ADULT RECALL OF CHILDHOOD AND ADOLESCENT TELEVISION VIEWING

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CHAPTER I

INTRODUCTION

The first television image was transmitted by a cathode ray television in 1929; the image was Felix the Cat. The first regular U.S. broadcasts began in 1946 and the broadcast schedule ran 4-6 hours per week. In 1949, only 2 percent of U.S. households owned television sets but by 1970 the number of U.S. households reporting ownership of a television had increased dramatically to around 98 percent. As of 2005, approximately 70 percent of homes contained two television sets and often times the additional television set is located in a bedroom. As a result, in homes with more than one television, it would not be uncommon to find a television set in a child's room. Audience ratings that figure average time spent watching television show that a television set is on in the average U.S. household over 7 hours each day and over 8 hours each day for homes with cable and subscription services. The typical American child between the ages of 4 and 18 watches 2 to 4 hours of television per day, although 25 percent of children in this age range watch between 4 to 10 hours per day (Harris, 2004). Thus, television watching is an extremely prevalent leisure time activity. Each week American residents spend 15 out their estimated 39 hours of leisure time watching television. The only activities adults engage in more often than watching television are work and sleep and the only activity children engage in more often than watching television is sleep (Roberts, 2000).

Consumption of television starts at a very young age. According to Roberts (1973), upwards of 50 percent of parents report placing their infant in front of the television. This "electronic babysitter" seems to affect children's cognitive development at a very young age, as by 2 ½ years most toddlers can identify their favorite TV characters, e.g. Big Bird, Barney, etc. Television viewing levels fluctuate across the lifespan. There is a dramatic increase in television viewing from around 15 minutes to 2.5 hours per day between the ages of 2 and 4, a slight decrease when children enter school, and leveling off until around 8 years of age. After age 8, viewing levels begin to rise again and reach a peak of approximately 2-4 hours per day by the age of 12. Then, from mid-adolescence to young adulthood television viewing decreases as individuals attend high school and college and are kept busy engaging in other tasks such as studying, dating, and rearing young children. After this period, there is a rise in television viewing as individuals enter young adulthood and this increase continues into older adulthood as individuals reach retirement and child rearing has ended (Harris, 2004).

Television has been an important topic of study for developmental psychologists because this medium is consumed across the entire lifespan and viewing of television dominates the free time of most individuals. Parents, peers, and teachers have been regarded as major sources of socialization in children. Many in the field of psychology have recognized television as a major source of socialization of children and have accordingly studied how this medium affects thoughts, feelings, and actions. As about half of the typical person's free time is spent in front of the television, it is likely that an individual's interaction with television is at comparable levels with parent and peer

interactions. Also, because 5 to 12 year old children spend more time watching television than attending school, it is likely that children interact with the television more than they interact with their teachers. Given this abundant consumption of television, it is appropriate and necessary to recognize this medium as a major influence on development.

Specifically, developmental psychologists are concerned with the effects of children's exposure to television content. The increased number of television sets in the average American household has made it possible for children to experience television viewing in the privacy of their own rooms, where program choices may go unsupervised by parents. A study by Greenberg, Ericson, and Vlahos (1971) found a considerable lack of correspondence between parent and child estimates of average weekday television viewing, with parents reporting 2.55 hours and children reporting 5.88 hours daily. Also, Rossiter and Robertson (1975) found that aggregate comparisons of parent and child reports show that parents claim much lower viewing by children, stricter household rules governing viewing, and more co-viewing with children than the children themselves reported. Some content (such as a show that conveys prosocial behaviors and lowers risk taking behaviors) has a positive impact on the viewer, while other content (such as a show that increases risk taking behaviors or teaches aggressive solutions to problems faced) has a negative impact on the viewer. Therefore, it is necessary to understand the role of television in the socialization and development of children and to measure the effects of exposure to television content on the viewer.

To date, there have been several thousand experimental and correlational studies that have examined the effects of exposure to television content on the viewer. These

studies have consistently found that exposure to television content can impact the attitudes, beliefs, and actions of viewers over the short-term. However, a more difficult research question to answer concerns whether exposure to television content produces long-term, durable or even permanent changes in viewers. The few existing longitudinal studies that have been conducted to assess the long-term impact of television exposure on viewers have found evidence of long-lasting effects. However, because longitudinal studies are difficult to conduct, in terms of the financial burden and time-constraints inherent in their methodology, their number is few in scientific research to date. The purpose of the current research is to suggest an alternative method for studying the long-term effects of television exposure. Using a retrospective television viewing measure, researchers may be able to quickly and accurately assess past television viewing frequency and content in order to establish a relationship between past exposure to television and current psychological states. To understand how a retrospective television viewing measure would be able to reliably and accurately assess past television viewing, it is first necessary to understand the relevant psychological theories of media effects in order to establish how television exposure affects viewers, the past empirical literature that has examined the effects of television exposure on viewers, and the research literature that has looked at the accuracy of very long-term memories, both in general and for past television exposure.

CHAPTER II

REVIEW OF THE LITERATURE

Psychological Theories of Media Effects

Thousands of studies have been conducted in the fields of psychology and mass communication to determine the potential effects of television exposure on viewers. Although there are several theories that examine television exposure effects, observational learning theory, cultivation theory, and script theory have been particularly important to research on media effects and therefore require further examination.

Observational learning theory is a general theory of behavior acquisition. Also called social-cognitive learning theory (Bandura, 1986), observational learning refers to acquiring information through observing the experiences of others and has considerable adaptive value. An organism does not have to directly experience a dangerous or harmful stimulus to learn that this stimulus should be avoided and consequences for certain behaviors may be learned vicariously through the experiences of others. For example, a young monkey does not have to have a fatal encounter with a venomous snake to learn the snake is dangerous, it can simply observe its mother's fear reaction to the snake to learn that the snake should be avoided. Likewise, a young adult might learn about the consequences of drinking and driving, we hope, from another individual who has already experienced the negative consequences of that decision rather than through personal experience. Bandura and colleagues developed observational learning theory and put

forth the concept of modeling, or the natural tendency to imitate the behavior of significant others. Modeling consists of four steps. Step one requires that the viewer attend to the model's behavior. Step two requires that the viewer must retain the modeled behavior. Step three requires that the viewer must be capable of reproducing the modeled behavior. Finally, step four requires that there must be reinforcement or motivation to perform the learned behavior. Models may be teachers, peers, parents, professional athletes, or even television characters; any individual whom the viewer considers to be a significant role model. In one early study by Bandura, Ross, and Ross (1961), nursery school children were shown a film depicting adults modeling violent play with an inflatable Bobo doll. The children watched the adult models punch, kick, and strike the inflatable doll and were then placed in a room with the doll and given a chance to play. Bandura and colleagues monitored the children's play and found that the children imitated the violent behaviors of the adult models that they had seen on the film. In another study, the adult models were rewarded through verbal praise for kicking the Bobo doll. When this occurred, the children who were exposed to this film were observed kicking the doll significantly more often than the children who were shown a film in which no reinforcement was given (Bandura, Ross, & Ross, 1963). Numerous additional studies have provided evidence for observational learning theory.

Another theory which addresses the processes that may underlie television exposure effects is cultivation theory. Cultivation theory was initially developed by Gerbner and his colleagues and posits that extensive repeated exposure to television over time gradually shapes one's view of the world and social reality (Gerbner, 1969). Cultivation research (Gerbner, Gross, Morgan, & Signorielli, 1980; Gerbner, Gross,

Morgan, & Signorielli, 1984; Gerbner, Gross, Morgan, & Signorielli, 1986; Gerbner, Gross, Morgan, & Signorielli, 1994) typically measures the viewing level of the sample and then divides the sample into light viewers (< 4 hours per day) and heavy viewers (4 or more hours per day). Then, subjects complete measures of their perceptions of themes in the real social world (e.g., "Is the percentage of persons involved in violent crime 1% (real world answer), or closer to 10% (television answer)?"). Finally, light and heavy viewer's perceptions are compared to determine the effect that amount of television viewing has on people's perceptions of the real world. Gerbner and colleagues found that heavy viewers give more "television answers" than light viewers, suggesting that heavy viewers' beliefs about the real world are shaped (cultivated) by the massive hours spent watching television and suggested that, in this case, knowledge and information from the real world and television cannot always be separated in one's memory due to the fact that the source of the information is often forgotten. As a result, Gerbner suggested that frequent or heavy television viewing leads to a "mean world syndrome" such that heavy television viewers believe that the real world is a mean and scary place. This may be due to the fact that they see numerous violent acts on television and it may also be due to the fact that they spend so much time inside watching television that they are not out in the real world experiencing life as it actually is (Gerbner, Gross, Morgan, & Signorielli, 1980; Gerbner, Gross, Morgan, & Signorielli, 1984; Gerbner, Gross, Morgan, & Signorielli, 1986; Gerbner, Gross, Morgan, & Signorielli, 1994).

A third theory that examines television exposure effects is script theory. Scripts are memory schemas for recurring experiences, e.g., eating at a restaurant (Schank & Abelson, 1977), that help to interpret and guide one's experiences and offer behavior

norms about what is expected to occur in a given situation. An individual's restaurant script may be to enter the restaurant, get seated, place an order with the server, server brings the food, individual eats, and then pays the server or cashier and leaves the restaurant. Having this script may help the individual quickly and efficiently process information when eating at a restaurant. Huesmann (1986) used script theory to account for how knowledge gained from exposure to television situations can prompt certain beliefs or fixed patterns of response when similar situations are encountered in real life. For example, an individual may watch a television program that depicts its characters going to a rowdy bar where the characters and the people around them may engage in physical violence against each other. After repeated exposure to similar situations on television, the individual may form a script of how to behave in a rowdy bar. In the future, if the individual were to go to a rowdy bar in real life and while getting a drink was bumped by another individual, he or she may use the television script to help interpret the situation and thus respond in an aggressive manner.

Taken together observational learning theory, cultivation theory, and script theory all describe how repeated exposure to television content may effect the formation of our attitudes and beliefs about the real world and how we should behave in given situations. Much evidence supports all of these theories from research conducted on the effects of television exposure on viewers.

Social Behavior and Television

Thousands of research studies concerning both short-term and long-term television effects on children's and adults' social behaviors have been conducted since the 1950s. Because television has been regarded as a major source of socialization in

children, it is likely that interaction with this medium shapes individuals' personalities as they grow into adults. This section will focus on television and aggression, television and risk-taking behavior, television and prosocial behavior, and television and education because these four areas represent a wide array of television exposure effects. Experimental, correlational, and field experimental research will be reviewed with an emphasis on longitudinal studies so that a link may be established between the long-term effects of television viewing and the need to establish a retrospective recall measure to accurately assess these effects.

Television and Aggression Literature

By the time a child reaches the age of 18, he or she has seen 200,000 televised acts of violence (Huston et al., 1992). Violence in the media may represent "mass socialization" of the viewing audience by demonstrating techniques, conditions, and situations in which a violent response to interpersonal conflict is appropriate, desirable, or likely to succeed. It also sets norms by conveying information about the pervasiveness of violent responses. More is known, in terms of the total number of scientific studies published, about the effects of televised violence on viewer's aggressive behaviors than any other topic in psychology.

Findings on television violence from experimental, correlational, and field experiment studies all consistently demonstrate a connection between watching violent television and aggressive behaviors. In a laboratory study by Liebert and Baron (1972), children 5-9 years old were exposed to either a violent television clip (experimental condition) or a nonviolent clip (control condition). After exposure, a measurement of peer aggression and solitary aggressive play were obtained. The results showed more

aggression toward peers and more aggressive solitary play for children in the violent television group than children in the non-aggressive control group. Another laboratory study by Steuer, Applefield, and Smith (1971) examined the effects of repeated exposure to televised cartoon violence by showing preschool children real cartoon stimuli over multiple days and then measuring aggressive play with peers during play sessions. Every child in the violent cartoon condition showed more aggression during play sessions than children in the nonviolent cartoon control condition. These two studies clearly demonstrate the effects of exposure to televised violence on children's aggressive behaviors. Additionally, research demonstrating these effects in adults has also been reported. Berkowitz (1965) conducted a study in which adults were either insulted or treated in a neutral fashion and were then shown either a "justified violence" or "less justified violence" version of a prize fighter movie. Berkowitz then measured aggression through the use of a shock machine that recorded the number of shocks delivered by the participant to the insulting confederate. Results showed that, following an insult, more shocks were administered by participants in the "justified violence" condition than participants in the "less justified" condition.

While laboratory studies are important for establishing causal relationships, many correlational studies have been conducted to assess the naturally-occurring relationships between exposure to television and aggression. McIntyre and Teevan (1972) measured the relationship between self-reported television viewing habits, asking participants to list their four favorite television programs, and self-reported deviant behavior in adolescents. Results revealed a positive relationship between levels of violence in the programs reported and participants' deviance scores. In another correlational study, Belson (1978)

measured television violence exposure, through a television viewing measure, as well as a variety of other aggressive and anti-social behaviors, such as delinquency. Positive correlations were found between participants' exposure to televised violence and their aggressive and anti-social behaviors.

Field experiments are important studies in the television and aggression literature because they provide information about the effects of exposure to televised violence on aggressive behaviors in a natural setting while maintaining experimental control. One such field experiment was conducted by Stein and Freidrich (1972) measuring exposure effects of televised violence on summer preschool children's aggressive behaviors. First, baseline measures of free play and lab tasks for aggression, self-control, prosocial behaviors, and many other behaviors were collected in a baseline phase. Then, in the television phase, one-third of the participants were shown violent cartoons, one-third were shown a prosocial television program, and one-third were shown nature films (control condition). Finally, in the follow-up phase, no television was shown but behaviors continued to be measured. Results showed that exposure to violent cartoons led to increases in physical and verbal aggression during the television phase, but this effect was found only for those children above the aggression median (top 50%) in the baseline phase. This indicated some interaction between pre-existing violent tendencies and watching violent television. Results also indicated some decrease in self-control, measured as less task-persistence on lab tasks, in children exposed to violent television. The physical aggression change persisted into the 2 week follow-up phase but the decrease in self-control went away after violent television was no longer viewed.

Television and Risk-Taking

Another area of research looking at the effects of exposure to television has focused on risk-taking behaviors. Will, Porter, Geller, and DePasquale (2005) analyzed the content of risk-taking behaviors in primetime television programs aired from 1997 to 1998. The results showed that characters in vehicles were unrestrained 74% of the time and that violence, risky sex, and substance use were shown in 47%, 29%, and 55%, respectively, of 30-min intervals observed in 1998. These risky, irresponsible behaviors were modeled on primetime television and were rarely followed by punishing consequences. Another content study of children's television programs was conducted by Potts and Henderson (1991) and showed an overall rate of 15 injuries per hour on children's programs. In addition, this study found 46 injuries per hour in weekday cartoon programs; 24 injuries per hour in Saturday morning programs; 3 injuries per hour in primetime programs; and 1 injury per hour in educational programs. Only 5% of these injuries showed severe consequences associated with them, and the injuries resulting in the highest risk situations had the least severe consequences. This study suggests that children may not learn to associate severe negative consequences with the risky behaviors depicted in these programs.

While content studies are important for establishing the amount of risk-taking behavior expressed on television, experimental studies show the effects of exposure to these behaviors. In a laboratory study by Potts, Doppler, and Hernandez (1994) self-report measures of willingness to take risks in several common situations (e.g., crossing the street or climbing a tree) were administered to children 6-9 years old. Participants were given a risk-taking pretest, were then exposed to either a high-risk or low-risk

television program, and were finally given a risk-taking posttest. Results revealed that participants who saw the high-risk program increased risk-taking more than those who saw the low-risk program. This study suggests that children who see television characters modeling risky behaviors without experiencing the negative consequences often associated with these unsafe behaviors could try to imitate the behaviors and possibly increase their chance of injury. Whereas some televised programs may increase the likelihood of risk-taking behaviors in child viewers, some programs may decrease risk-taking. Another experimental study by Potts and Swisher (1998) examined whether children's self-reported risk-taking behaviors would decrease after exposure to programs containing safety content and hazard identification. Five to eight year old children were given a risk-taking and hazard identification pretest, were then exposed to one of three different television stimuli (an overt safety program; a television cartoon with incidental safety content; or the same televised cartoon without any safety content), and were then given a risk-taking posttest. The results revealed that risk-taking declined significantly in the overt safety program group but not for the incidental safety content group or the control group; and both the incidental safety content and the overt safety content significantly increased hazard identification, whereas the control content did not. This study indicates that even minor safety content in televised programs can be sufficient to change a child viewer's awareness of hazards but there must be overt demonstrations of safety behaviors modeled by television characters to inhibit the risk-taking behaviors of children viewers.

Television and Prosocial Behavior

As the Potts and Swisher (1998) study has shown, positive content in television programs can lead to positive outcomes in the behaviors of their viewers. A broad category of socially desirable, or prosocial, behaviors is defined as any behavior that, in some way, benefits another person or society at large (e.g., helping or sharing); that shows socially-desirable self-regulation of impulses; or shows concern or sensitivity to others' needs and differences. A content study conducted by Lee (1988) found that 97% of the primetime programs in the 1985/1986 season showed at least one prosocial behavior. Additionally, results revealed that 80% of the prosocial actions attempted were successful. Therefore, although violent content is widespread in television, it appears that the majority of television programs also contain some prosocial content.

As in the television and aggression studies, experimental studies have been conducted to establish a causal relationship between exposure to prosocial television and viewers' prosocial behaviors. In one experimental study by Bryan and Walbek (1970), third and fourth grade children were shown a model clip in which the model either verbally advocated donating prizes to others or not and then either donated the prizes or did not donate them. Results found that children imitated what the model did, not what the model said. This study showed that simply advocating prosocial messages in television programs is not enough to lead to prosocial behaviors in viewers; the programs must show prosocial behaviors for them to be effectively imitated. In another experimental study by Sprafkin, Liebert, and Poulos (1975), preschool children saw either a prosocial episode of *Lassie* that depicted Lassie helping puppies in trouble, a neutral plot *Lassie*, or a neutral *Brady Bunch* episode. Participants were then given the

task of monitoring puppies in another room while they played an enjoyable game and were asked to get the experimenter if anything happened to the puppies. Results indicated that participants who saw the prosocial *Lassie* episode spent nearly two times as long notifying the experimenter and sacrificing game play than the other two conditions.

Correlational studies have been conducted to examine the relationship between exposure to prosocial television and prosocial behaviors in viewers. Rosenkoetter (1999) studied elementary school children's comprehension of prosocial messages in *The Cosby Show*. The results found a correlation between home viewing levels of prosocial television and teacher ratings of prosocial behavior at school, especially in those who showed the best comprehension of the prosocial message on *The Cosby Show* test.

Field studies have also been conducted to assess the effects of prosocial television on viewers. Stein and Freidrich (1972) gathered baseline, television treatment, and follow up measurements of preschool children's prosocial behaviors across several weeks. The television treatment phase consisted of exposure to one of three television programs (a violent cartoon, the prosocial program, or a neutral program). Results found that participants who saw the prosocial program increased self-control and altruism, although only the self-control changes lasted into the follow up phase. Another field experiment was conducted by Loye, Gorney, and Steele (1977) in which prosocial behaviors were studied among married couples. Couples were assigned to one of four research conditions (a normal television condition, a violent television only condition, a prosocial television only condition, and a violent and prosocial television only condition). Loye and colleagues found that husbands in the prosocial television only condition reduced hurtful behaviors and showed the best mood compared to the other conditions.

This study was influential in that it demonstrated that exposure to prosocial television may lead to a reduction in the hurtful behaviors of viewers.

Educational Television

In 1962 federal legislation to fund educational television via public stations was passed. One result was the production of *Sesame Street*, the most successful children's program in history. To study its effectiveness, Ball and Bogatz (1970) compared a sample of viewers who were encouraged to watch *Sesame Street* to a sample not given special encouragement. Results were based on amount of viewing and showed a linear pattern in which the more the participants watched *Sesame Street*, the more they learned and the higher they were rated by a 1st grade teacher as ready for school. In study two, *Sesame Street* was mass broadcast only on a local UHF station, so Ball and Bogatz provided one group with UHF converters so that a true *Sesame Street* group and a true control group could be established. Results were similar to the first study in that *Sesame Street* improved pre-academic skills and school readiness. Many other educational television studies and outcomes support the idea that educational content portrayed on television can have a beneficial effect on viewers of all ages.

Longitudinal Effects Research

While short-term relationships between exposure to television content and subsequent effects on viewers have been frequently demonstrated in the television effects literature, many theories of socialization and personality development emphasize cumulative processes that begin in childhood and continue across the lifespan (Bandura, 1986; Bronfenbrenner, 1979). Longitudinal studies examine these long-term effects but are less frequent in the literature due to the time and cost constraints inherent in their

methodology. One valuable longitudinal study that has been conducted to assess the relationship between television violence exposure and aggression was conducted by Lefkowitz, Eron, Walder, and Huesmann beginning in 1972 and spanning 22 years. Measures of favorite violent television shows and peer-nominated aggression were initially taken from participants in the third grade (Lefkowitz, Eron, Walder, & Huesmann, 1972). The researcher returned to measure these same participants when they were in the twelfth grade and again measured violent television preferences and peer-nominated aggression while additionally measuring participants' police records. A correlation was found between third grade television violence exposure and twelfth grade aggression. The researchers continued to follow these participants into adulthood and found that third grade exposure to television violence predicted aggression and police record in early adulthood (i.e., mid to late 20s). The researchers also found that the original participants' exposure to television violence in the third grade predicted their children's level of school yard aggression which supplied evidence for cross-generational transmission of aggressive dispositions with a television origin (Huesmann, Eron, Lefkowitz, & Walder, 1984; Huesmann, 1986). Another study by Huesmann, Moise-Titus, Podolski, and Eron (2003) examined the longitudinal relations between TV-violence viewing at ages 6 to 10 and adult aggressive behavior about 15 years later for a sample growing up in the 1970s and 1980s. Results revealed that childhood exposure to media violence predicted young adult aggressive behavior for both males and females. Identification with aggressive TV characters and perceived realism of TV violence also predicted later aggression. These relations persist even when the effects of

socioeconomic status, intellectual ability, and a variety of parenting factors are controlled. Thus several studies indicate that early television has very long-term effects.

Studies of the long-term effects of television exposure are not limited to the television and aggression literature. In addition to the short-term benefits of educational programs, such as *Sesame Street*, psychologists have also studied the long-term benefits of exposure to educational television. In a longitudinal study of the effects of *Sesame Street* on academic outcomes (Huston, Wright, Rice, Kerkman, & St. Peters, 1990; Anderson, Huston, Schmitt, Linebarger, & Wright, 2001), an initial sample was taken in the early 1980s of 2-5 year old children who watched an average of 1-2 hours of Sesame Street per week. Results revealed short-term gains of educational television in that those who watched Sesame Street at 2 and 3 years of age had higher academic (or pre-academic) scores at 5-7 years of age. In addition, the researchers found that amount of cartoon viewing in early years was negatively correlated with academic scores (Huston et al., 1990). This original sample was retested when the participants were in high school. Results showed that the amount of Sesame Street viewing at 2-4 years of age correlated positively with high school grade point average and correlated negatively with the likelihood of dropping out of high school, even when controlling for parent I.Q. and early language ability (Huston et al., 2001). This study demonstrated the impact of early educational stimulation on very long-term outcomes.

The current review of the literature indicates that the majority of television effects research to date has examined the short-term effects of exposure to television. Taken together, this literature has clearly demonstrated both the positive impact of television on social behaviors (increasing prosocial behaviors, improving educational skills, and lower

risk-taking behaviors) and the negative (increasing aggression and risk-taking). The relatively few longitudinal studies that have been conducted in television effects research have demonstrated that exposure to television has long-lasting effects and serious implications for subsequent development. However, as previously stated, longitudinal studies are infrequent in the literature because they are costly and very time-consuming. As an alternative approach, the development of a reliable and valid retrospective recall measure for past television viewing would allow researchers to collect such information quickly and easily, and could then be correlated with current psychological states. Because the proposed recall measure would assess memory of remote past experiences, existing evidence for very long-term memory is reviewed in the next section.

Long-Term Memory for Television Viewing

The present study will examine the accuracy of individuals' assessments of their own television viewing patterns from childhood and adolescence. The main goal of this study is to assess persons' recall of childhood and adolescent television viewing frequency. However, no studies to date have been published which have examined one's long-term memory for the frequency of childhood and adolescent television viewing. Presented here is research on two areas relevant to the present study. First, frequency estimation and behavior estimation literature has examined how accurate individuals are in making frequency of occurrence and frequency of behavior judgments. Accurate reporting of one's frequency of viewing specific television programs is suggested by evidence that humans encode frequency of occurrence as a basic encoding mechanism (Sedlmeier, Betsch, & Renkewitz, 2002). The repetitious nature of television viewing would seem to facilitate frequency encoding which could be reported at a much later

time. However, only short-term frequency estimation has been studied thus far. Second, there have only been a few studies that have assessed the accuracy of long-term memory using television as the to-be-remembered stimulus. While these studies have only assessed recognition memory for television content, it is reasonable to assume that, due to the repetitious nature of television which will facilitate encoding and strengthen memory through increased opportunities for rehearsal, individuals will be able to accurately recall television content viewed during childhood and adolescence.

Long-term memory is the system used to maintain information for extended periods of time. Most psychologists agree that long-term memory capacity is effectively unlimited. There is potentially no limit to the amount of information that can be remembered, but not everything that is experienced gets stored in long term memory and information is not always stored in a way that makes it easy to remember (Broadbent, 1958). To promote effective memory storage, it is necessary that experience is encoded in a way that makes it retrievable. Episodic and semantic memories are memories for past experiences stored in long-term memory (Tulving, 1972). Episodic memories are memories of one's personal past, such as the name of one's 4th grade teacher or the street one lived on as a child. Semantic memories represent our meaningful knowledge about the world, with no reference to particular episodes from our past (i.e., the 16th president of the United States of America or the capitol of New Hampshire). As the individual ages, memories continue to accumulate through the encoding and storage of new experiences creating the potential for mental clutter. As a result, psychologists studying memory have been interested in the accuracy of reported memories. Individuals can oftentimes accurately recall information from their past, such as their favorite color as a

child, where they went on vacation when they were 9 years old, or who their 3rd grade teacher was. Therefore, it is at least plausible that individuals may be able to accurately recall television viewing patterns and content of programs experienced in childhood and adolescence.

Research on memory assessment has typically employed one of three tasks to measure memory. Free recall is the first and most cognitively difficult task which involves remembering without any retrieval aid. An example of free recall would be if an individual were to recall some of the shows that were aired as part of the primetime schedule in 2002 without any retrieval cues. The second task is cued recall which involves retrieval prompted by cues and is cognitively easier to perform than free recall. An example of cued recall would be if someone was given the name of a television show that appeared as part of the primetime schedule in 2002 and was asked to recall characters from that show. The third task is recognition which involves making assessments about whether or not a presented stimulus has been encountered before and is cognitively easier than free recall and cued recall. An example of recognition would be if an individual was shown a picture of a television character and was asked if that character appeared on a particular television show of interest. Because recognition places the least cognitive demands on an individual, studies assessing memories over the long-term should utilize this retrieval task (Ashcraft, 2002). Also, Shoemaker, Schooler, & Danielson (1989) and Singh, Rothschild, & Churchill (1988) suggest that free recall typically indicates a relatively high degree of current information salience and accessibility, whereas recognition involves a somewhat lower standard of past cognitive engagement. In light of this distinction Lang (1995) has argued that recognition

measures likely indicate whether the information in question has ever been encoded, which is a basic outcome that resides at a different conceptual level than the retrieval ability likely tapped by recall tasks.

The ability to encode, store, and retrieve memories is a remarkable and seemingly limitless process, but can be fallible at times. Flashbulb memories and eyewitness memories are both instances in which memory deficits have been found due to source misattribution, misinformation acceptance, and false memories. Flashbulb memories represent a rich record of the circumstances surrounding emotionally significant and surprising events (e.g., the terrorist attacks on September 11, 2001). Despite the significance associated with these events, research on flashbulb memories has revealed that they can be surprisingly inaccurate, possibly because later experiences are incorporated into the memories which then interfere with the memory for the original event (Brown & Kulick, 1977). Eyewitness memories are also influenced by the incorporation of new information into the existing memory for an event. Accounts from police officers, information provided by attorneys, or coverage in the media can all interfere with the original memory of the eyewitness. Source misattribution occurs when an individual is unable to distinguish between the original event and some later event as the true source of the information. When there is confusion about the original source of the information, the individual may also engage in misinformation acceptance in which information from the later event is accepted as part of the original experience. Memory distortions can also occur in the form of false memories. A false memory is a memory for an event or stimulus that never occurred or was never presented. An example of a false memory would be if an individual were presented with a list of highly related words

(e.g., tired, blanket, slumber, snore, drowsy) and falsely recalled encountering a semantically-related word on the list, such as sleep. Flashbulb and eyewitness memories are susceptible to source misattribution, misinformation acceptance, and the presence of false memories because human memory is a largely constructive process. Because new information may be constructed into the original memories for a particular event, verifying the accuracy of memories can be difficult.

Unlike flashbulb memories, not all memories associated with one-time surprising and emotionally-charged events are fallible and sometimes these memories can be quite durable. Research by Hoekstra, Harris, and Helmick (1999) found that young adults were not only able to recall their first frightening film experience from as early as 5 years of age, but they were also able to vividly recall the movie selection process and the social details of watching the film. Similarly, Harrison and Cantor (1999) were able to demonstrate the enduring effects of one's first frightening film experience and found that participants could vividly recall the coping skills used to alleviate those effects. Taken together, these studies provide scientific support that some single experiences can create vivid and durable memories.

While single experiences can create durable memories, it is important to note that watching television is, for most purposes, a repetitive activity, so it is likely that memory for viewing behaviors as well as memory for content experienced is rehearsed often. Research on rehearsal has found that the amount of recall for a list of words is increased when participants are allowed to rehearse the information as opposed to no rehearsal (Ebbinghaus, 1885/1964). Television series are typically aired once per week across several weeks and depict recurring characters, often in recurring situations. Therefore,

viewers are allowed to rehearse information on characters and plot elements through repeated exposure. The rehearsal and repetition involved in television viewing should strengthen the accuracy of memories for program content and viewing frequency and facilitate frequency encoding which could be reported at a much later time.

Frequency Estimation Literature

It is believed that frequency of occurrence is one of the fundamental aspects of information that people classify about their experiences in the world and that this information plays an important role in a wide range of behaviors (Zacks & Hasher, 2002). Hasher and Chromiak (1977) found that participants who were only given general memory instructions produced frequency judgments of a list of words that were just as accurate as participants who were explicitly informed prior to list presentation that they would be tested on frequency. There was also evidence that frequency judgments remain accurate, even in the absence of practice or feedback on performance. Based on these findings, Hasher and Zacks (1979) concluded that frequency of occurrence information is automatically encoded in the context of a general theoretical framework relating attention and memory encoding. This automatic encoding mechanism ensures that, for attended events, frequency information is continually registered in memory, regardless of the age, the ability, the education, or the motivation of an individual (Hasher & Zacks, 1984).

In addition to evidence for the automatic encoding of frequency information, researchers have proposed that beyond the age of four or five, estimation of frequency may not change. Hasher and Chromiak (1977) found no age differences testing participants ranging in age from second grade to college students on frequency judgments and also found no evidence of an age difference in the patterns of frequency judgments

between college students and healthy older adults. These findings demonstrate that the ability to encode frequency information is functional at a very early age and that this ability remains fairly stable across the lifespan. Individual ability differences also do not impact frequency processing. Another study by Goldstein, Hasher, and Stein (1983) compared the frequency processing of children who were proficient classroom learners with those who were not (e.g., learning disabled children) and found that the children did not differ in sensitivity to frequency despite the generally poorer memory performance of learning disabled children. These examples show that under a wide range of conditions, people of different ages and abilities reliably encode a record of the frequency with which particular events occur. Also, Zajonc (1968) reported that in general, organisms are especially sensitive to the frequency of experiences with hedonic relevance, in other words, events paired with an affective or emotion reaction. Also, attitude research has shown that humans are remarkably sensitive to the frequency of value-charged experiences with objects and that even when concrete memories about experiences with an object are lost or can no longer be accessed in memory, intuitive judgments still reflect the frequency (and intensity) of the entire amount of prior encounters (Betsch, Plessner, Schwieren, & Gutig, 2001). As much of television content has an affective tone (Zillmann, Hezel, & Medoff, 1980), it is likely that this tone will facilitate an individual's sensitivity to the frequency of this experience. No long-term frequency estimation literature exists at this time, but the robustness and durability of the short-term effects suggests the possibility of long-term frequency estimation.

Behavior Estimation Literature

Another area of frequency judgments that has been examined concerns estimates of one's own behavior frequency. One such behavior estimation study was reported by Blair and Burton (1987) in which researchers assessed whether people use episodic enumeration or a mathematical formula when making judgments about the frequency of events from everyday life. Episodic enumeration involves simply counting the number of times an event occurs and was believed by Sudman and Bradburn (1974) to be the fixed process used in the formulation of behavioral frequency reports. However, Blair and Burton suggested that individuals may sometimes base frequency estimates on a rate of behavioral occurrence without recalling any specific behavioral episodes (e.g., when responding to a question about the number of gasoline purchases in the past month, a respondent may estimate that gasoline is purchased once per week and then multiply this number by the number of weeks in a typical month to yield an answer of four times in the past month). Blair and Burton administered telephone surveys asking respondents to make judgments concerning the frequencies of six everyday behaviors: purchasing gasoline, purchasing clothing, making a long-distance telephone call, attending a movie, viewing a favorite weekly television show, and dining at a restaurant. The amount of time participants were asked to report on varied from two-weeks to two-months to six-months in order to manipulate both the number of events and the recency of the most distant events, and the question format varied from how many times a behavior occurred to how often a behavior occurred. Results revealed that increasing the frequency of events appears to produce a rapid decline in the likelihood of episodic enumeration, that time frame had a modest effect beyond that attributable to differences in frequency, and

that question wording had a weak effect, if any (Blair & Burton, 1987). This study supports the notion that frequency processing is accurate beyond laboratory tasks and that valid estimates can be made for the frequency of events from everyday life. As with frequency estimation, there are no long-term studies of behavioral frequency estimation at this time, but the robustness and the durability of the short-term effects suggest the possibility of long-term behavioral frequency estimation.

Television Content Recall Validation

The present study will validate participants' television viewing frequency reports by assessing persons' television program content recall from a set of programs which have been given previous viewing frequency ratings. No published studies exist at the current time that examine very long-term recall of televised content, but there are a few studies that have examined very long-term recognition for television content as well as other content. The repetitive nature of television is likely to facilitate encoding through repeated exposure to content, which in turn allows for increased rehearsal of television content. Therefore, it is likely that increased recall will result from greater exposure.

Long-Term Ecological Memory Literature

The vast majority of memory studies to date have largely focused on the short-term (i.e., intervals of a few seconds or minutes). Memories have often been labeled "long-term" if the retention interval exceeds 30 seconds (Bahrick & Karis, 1982). Also, because most of the studies on both short- and long-term memory have been restricted to the laboratory, little is know about long-term ecological memory. In one study examining long-term ecological memory, Bahrick (1984) tested participants' retention of Spanish learned in school between 1 and 50 years prior to being tested. Tests of reading

comprehension, recall, and recognition vocabulary and grammar were administered together with a questionnaire to determine the amount of original training (e.g., semesters taken), the grades received, and rehearsals during the retention interval in the form of reading, writing, speaking, or listening to Spanish. Results showed that retention throughout the 50-year period was mainly a function of the amount of original training. Given that the majority of subjects rehearsed so little, rehearsal effects, which most reported very infrequently, were not significant predictors of retention. Bahrick identified memory curves which declined exponentially for the first 3-6 years of the retention interval, but after which retention remained unchanged for periods of up to 30 years before showing a final decline. Overall, large portions of the originally acquired information remained accessible for over 50 years, despite having never been used or rehearsed since the original training (Bahrick, 1984).

In another study of ecological long-term memory, Huang (1997) examined long-term memory by using himself as a research participant and testing recognition memory of names for former students in his classes held between 6 months and 26.5 years prior to testing. Huang tested his recognition memory one student at a time and recorded the following items: whether a given name was or was not one of his former students, response time, a confidence rating, and the grade the student had received. Results showed that there was an initial drop in retention followed by a slow forgetting rate. Correct responses were associated with higher confidence ratings and shorter response times than the incorrect responses. Huang's memory for grades assigned was only at chance levels (Huang, 1997).

The results of the Bahrick's and Huang's studies provide support for the accuracy of human memory over very long retention intervals. Their research also shows that long-term ecological memory for information to which one is repeatedly exposed may remain accessible in a relatively accurate manner for many years, given the slow forgetting curves observed. Past research on very long-term memory for televised content is limited but informative regarding individuals' abilities to accurately recall information over long retention intervals.

Television and Long-Term Memory

Very few studies, such as those of Bahrick (1984) and Huang (1997), have examined very long-term memory. Even fewer have examined very long-term memory for television content. The study proposed here will add to the limited literature on memory for television viewing frequency and assess the accuracy of this memory by examining memory for program content based on viewing frequency. For the present study, in order to gain confidence in the use of a retrospective television viewing measure, it is important to establish whether individuals can accurately recognize televised content they were previously exposed to. If individuals are able to accurately recognize television content they were exposed to long ago, then perhaps people can recall remote television content as well. In a study by Squire, Chace, and Slater (1975), two retrospective memory tests were used to assess adults' and children's recognition memory for titles and basic plot premises of television programs broadcast for a single season from 1957 to 1972 (2 to 15 years prior to data collection). Single season programs were selected in order to eliminate subsequent exposure to the programs since their original airing, i.e., controlled for exposure beyond the single season. Results

indicated that individuals demonstrated an ability to accurately recognize program titles and basic plot themes above chance levels, if they were aired when the individuals were 5 years of age or older. This pattern was also seen in the 11-13 year old children tested, despite the fact that they were probably too young to have actually watched the original broadcasts. The researchers speculated that the 11-13 year old children had probably encountered some information about the programs from conversations with their parents and through television advertisements which allowed them to perform at above chance levels. Squire and colleagues also found that overall accuracy for recognition of program titles and plot themes was related to how many weeks these programs aired.

In a series of studies that demonstrated recognition of television material experienced in the recent past (Southwell, Barmada, Hornik, and Maklan, 2002; Southwell, 2005), researchers tested 9 to 18 year-olds' and their parents' recognition memory for exposure to anti-drug PSAs aired 2 months prior to testing. Participants were shown four anti-drug PSAs, which aired numerous times, as well as a bogus anti-drug advertisement that had been produced but never aired. Frequency of airings was provided by the anti-drug campaign staff so that a measure of the sheer prevalence of the campaign advertisements could be established. After viewing each advertisement, participants were asked whether or not they had ever heard of or seen the advertisement and if they answered in the affirmative, they were asked how many times they had seen or heard the advertisement. Results indicated that participants showed greater recognition of the aired anti-drug PSAs than the unaired advertisements; they showed higher recognition for advertisements that were aired more often; and those reporting higher levels of television viewing reported greater recognition of the anti-drug PSA.

Perhaps this is due to the fact that repeated exposure to recurring events provides an opportunity for increased encoding and rehearsal of information that should increase accuracy. Even though existing research on long-term memory for televised content has focused on recognition, it is likely that the repetitive nature of television would lead individuals to produce accurate recall of program content for remote television viewing.

Adult Recall of Childhood Television Viewing Literature

The previously mentioned studies have measured the dynamics of very long-term memory, some using television programs as the to-be-remembered stimulus, but have not assessed participants' recall of their own viewing patterns of television programs aired during their childhood and adolescent years. This latter topic was investigated in one previous effort. Potts, Belden, and Reese (in press) conducted two studies of young adults' recall of childhood television viewing patterns using a retrospective television viewing measure. In one study, college-age participants were given several questions designed to cue memories of life circumstances in the target year and then shown a schedule of primetime television programs broadcast during the fall season of a specific target year and asked to indicate their viewing level for each program series during that year, using a scale ranging from 1 ("never/rarely watched it") to 5 ("never missed watching it"). Afterwards, they were asked to complete a television program content recall measure in which they attempted to recall as many characters and plot elements as they could from one show, chosen by them, for which they had assigned a rating of "1: never/rarely watched it", one rated "3: watched it occasionally", and one rated "5: never missed watching it." Results for the viewing frequency reports indicated individual consistency in reported viewing levels across the years of interest with participants

reporting a small number of "never missed" programs, a somewhat larger number of "occasionally watched" programs, and a larger number of "never/rarely watched" programs. Results for the television content recall measure indicated that recall of characters and plot elements was greater for the "5: never missed" programs than for the "3: occasionally watched" programs, which in turn was greater than recall for the "1: never/rarely watched" programs. This finding strongly supported the validity of participants' reports of past television viewing levels and indicated that more recall resulted from more frequent exposure. Accuracy of recalled content was examined by comparing the specific characters, actors, and plot themes recalled by participants against descriptions of each program series listed in a primetime TV encyclopedia (Brooks & Marsh, 2003). Each TV series' entry in that book listed all recurring actors and the characters they portrayed, as well as generic series premises. Two coders independently coded the accuracy of all recall responses from approximately 25% of the sample, representing 867 character names, actor names, and plot elements. Coders disagreed on 3 of the 867 items, representing inter-rater reliability of over 99%.

In a second study, Potts et al. (in press) expanded the years of television viewing assessed from three to four, counterbalanced the order of presentation of the target years to eliminate potential order and fatigue effects, and included two fictitious programs into the broadcast schedules for each target year. They also included a measure of perceived realism of television. Results for the viewing frequency reports and the television content recall measures remained consistent with those of the first study. According to previous research, children, adolescents, and adults who are frequent television viewers believe more strongly that the social reality portrayed in television programs is reflective of real

life compared to infrequent viewers (Elliot & Slater, 1980; Greenberg & Reeves, 1976; Slater & Elliot, 1982). Consistent with this research, results revealed that perceived realism scores were significantly correlated in a positive direction with overall viewing levels for three of the four years, providing evidence of nomological validity to the viewing reports.

In a small additional sample in Potts et al. (in press), the experimenter chose the programs for the television content recall measure in order to examine a potential inflation of the amount recalled due to an accessibility bias. To determine whether participants in the first study deliberately chose programs which they knew they could recall or had at least some familiarity with, the experimenter randomly selected one "5-," one "3-," and one "1-rated" program for the person's content recall task after they had completed the viewing frequency measure. Fewer characters and plot elements were recalled from programs given a rating of "1: never/rarely watched" when the experimenter selected the program for the recall task, suggesting that participants in the first study chose "1-rated" programs with which they were somewhat familiar. Despite the lower recall of "1-rated" programs in the second study for the television content recall measure, the pattern of results remained consistent with those of the first study; recall of characters and plot elements was greater for the "5: never missed" programs than for the "3: occasionally watched" programs, which in turn was greater than recall for the "1: never/rarely watched" programs. This finding further supported the validity of participants' reports of past television viewing levels and indicated that better memory results from greater exposure.

Taken together, the results of Potts et al. (in press) support the assertion that people can accurately recall their childhood television viewing patterns. The results are also consistent with the research demonstrating very long-term memory for various experiences (Bahrick, 1984; Huang, 1997) which indicates that some material learned early is accessible for decades and may never be forgotten across the lifespan. These results are also consistent with the frequency estimation literature (Hasher & Chromiak, 1977; Hasher & Zacks, 1979; Hasher & Zacks, 1984; Hasher & Zacks, 2002) and provide concurrent validity that humans appear to be very accurate in their ability to judge how often events occur (Sedlmeier et al., 2002).

CHAPTER III

STATEMENT OF PURPOSE

The retrospective television viewing procedure developed by Potts et al. (in press) appeared to produce valid reports of remote television viewing and recall of content. The purpose of the present study is to investigate adult recall of childhood and adolescent television viewing patterns and extend the research of Potts et al. using methods that will address some of the limitations of the previous study. The present study will employ a revised response scale for assessing viewing frequency that better differentiates between viewing levels of programs. The revised response scale will allow respondents to differentiate between programs they have never heard of and programs they have heard of but never seen. Also, for programs seen, instead of using the more relative viewing intervals of the Potts et al. scale (2 = watched it a few times; 3 = watched it occasionally; 4 = watched it fairly often; and 5 = never missed watching it), the revised scale will use numerically-based intervals (2 = watched only 1 or 2 episodes during entire season; 3 = watched a few episodes, maybe 1x/mo during season; 4 = watched semi-regularly during season, 2-3x/mo; and 5 = watched often during season, nearly every episode, 4x/mo). In addition the study will validate the accuracy of self-reported television viewing patterns by asking participants to complete an extracurricular activities checklist, in order to observe corresponding patterns of viewing. The present study will also validate the accuracy of self-reported viewing patterns by asking participants if there was a family

time rule limiting how late they could stay up and watch primetime programs, a family content rule limiting the types of primetime programs they were allowed to watch, or a combination of the two rules, and then comparing these responses with overall viewing levels.

In the present study, television viewing frequency reports will be validated through an assessment of television program content recall. The Potts et al. (in press) findings indicated that having the experimenter choose the programs for the television content recall measure could reduce the potential inflation of the amount recalled due to an accessibility bias, while maintaining a pattern of viewing indicating that better memory results from greater exposure. Thus, the experimenter will select one program series from the target year for which the participant assigned a rating of "0: never heard of that program, never watched any episode", one the participant rated "1: heard of it, but never watched any episode", one the participant rated "3: watched a few episodes, maybe 1x/mo during season", and one the participant rated "5: watched often during season, nearly every episode, 4x/mo." For each of these programs, the participant will be asked, "to write down the names of as many characters and actors as you can remember and the general themes or plot lines from the program."

Hypotheses

The general hypotheses of this study predict that people will show accurate memories for past television viewing patterns as identified through two types of data. First, when given a list of programs broadcast in a target year, participants should be able to report a pattern of viewing frequency consistent with a small number of television programs "watched often during the season", a larger number programs for which "a few

episodes were watched", and an even larger group of programs that were either "never heard of" or "heard of, but never watched". This would indicate an ecologically valid pattern of past television viewing. Given the large number of shows available for viewing, individual and age-related viewing preferences, and the limited amount of viewing hours during primetime, it is likely that there would only be a few "favorite," or frequently viewed, programs, a larger number of programs watched on occasion, and an even larger number of programs the person never watched. The accuracy of one's recall for past television viewing patterns will also be assessed by including a few false programs in the list of actual programs as was done by Potts et al. (in press). Therefore, when assessing frequency of viewing, it is predicted that the false programs will be rated by participants as "0: never heard of". To further assess the validity of the self-reported viewing patterns, participants will be asked about extracurricular activities that may have occurred during the time that primetime television programs were aired. It is predicted that there will be an inverse relationship between reports of other activities and viewing frequency for primetime programs. Also, participants will be asked two questions concerning family rules which may have had an impact on their viewing frequency of primetime programs. One question will ask whether there was a family time rule limiting how late they could stay up to watch primetime programs and another question will ask whether there was a family content rule limiting the types of primetime programs they were allowed to watch. It is hypothesized that there will be an inverse relationship between reports of family rules and viewing frequency for primetime programs.

Second, validity of self-reported past television viewing frequency will be obtained by asking people to recall characters/actors and plot elements from a selection

of programs that were previously assigned a viewing frequency rating. It is predicted that participants will recall more characters/actors and plot elements from frequently viewed programs, compared to programs reported as occasionally viewed, which in turn will be more than programs reported as never watched. This is because there would have been more opportunities to encode the details of programs viewed more frequently compared to programs viewed less frequently. Additionally, the scale used to assess frequency of past television viewing will further measure the accuracy of an individual's recall by allowing a person to distinguish between programs they have "never heard of" (corresponding to a "0" on the scale) and programs they have "heard of, but never watched" (corresponding to a "1" on the scale). It is hypothesized that participants will demonstrate some recall of content for programs given a rating of 1 ("heard of, but never watched") because exposure to television advertisements and promotions for these programs will result in general knowledge about the program, and thus some content recall, despite having never actually watched the program. The accuracy of the content recall information will be checked against the same primetime TV encyclopedia (Brooks & Marsh, 2003) used in the Potts et al. (in press) experiment for the 1996 and 2002 schedules, and a television information website for the 2006 schedule (http://www.tv.com).

Finally, an assessment of nomological validity of the viewing level reports will be obtained through a measure of perceived realism of television, which refers to individual differences in beliefs about the degree to which television content accurately resembles real life persons and situations. Previous research has found that individuals' weekly television viewing levels are correlated with their level of perceived realism of television

(Greenberg & Reeves, 1976; Elliot & Slater, 1980; Slater & Elliot, 1982). The measure that will be used in the present study (Potter, 1988) consists of 20 items, such as "The people who act in TV shows about families probably behave the same way in their real lives," and "I feel I can learn a lot about people from watching TV." Each item is rated using a 5-interval response scale where "5 = definitely agree…1 = definitely disagree" and summed for an overall perceived television realism score. Overall level of television viewing in each year is hypothesized to be positively related to perceived realism of television programs.

CHAPTER IV

METHOD

Participants

The participants were 76 predominantly Caucasian college undergraduate students (32 females, 44 males) with an age range of 18 to 32 (M = 19.42, SD = 2.02). Participants were recruited using the university psychology department's existing research recruitment pool. Participants received one unit of credit for participation in this research study and if, at any time, a participant wished to discontinue participation he or she was allowed to do so free of penalty. Recruitment and procedures were in accordance with the ethical guidelines of the local institutional review board.

Materials

Television program viewing frequency report. This measure was administered to participants via a printed questionnaire in the form of primetime network television program schedules from the years 1996, 2001, and 2006; data was collected in 2007 (see Appendix A, C, and E for 1996, 2001, and 2006, respectively). Given the age range listed above, participants were, on average, 8 years old in 1996, 13 years old in 2001, and 18 years old in 2006. The primetime schedules from 1996 and 2001 consisted of programs aired on the ABC, CBS, Fox, NBC, UPN and WB networks and the 2006 primetime schedule consisted of programs aired on ABC, CBS, the CW, Fox, and NBC networks. The fall season program schedules for 1996 and 2001 were obtained from *The*

Complete Directory to Prime Time Network and Cable TV Shows: 1946 – Present (Brooks & Marsh, 2003), a book containing all primetime television programs aired between 1946 and 2003, as well as TV Guide listings for the 2006 season (TV Guide, 2006). The format of this questionnaire resembled a newspaper television matrix, with day of week and network appearing down the side of the matrix, timeslot appearing at the top of the matrix, and the specific television series titles appearing in the intersecting cells. The target years were presented one at a time on separate sheets of paper and approximately 100 programs appeared in the weekly schedule for each target year. In addition to the list of programs that actually aired as part of the primetime broadcast schedule for the target year, 2 false program titles per year were added to the schedule in order to further verify the accuracy of participant reports. The false program titles were selected from the list of programs used in the Squire, Chace, and Slater (1975) study and therefore represented real television programs, but ones which had aired over 30 years ago. Given that these programs were only aired for a single season when they originally broadcast, the amount of time that had passed since these programs were aired, and the average age of the sample, it was reasonable to conclude that the participants should have no prior knowledge of these programs as they originally existed. Viewing levels were assessed for each target year using the following scale: 0 = never heard of that program, never watched any episode; 1 = heard of it, but never watched any episode; 2 = watched only 1 or 2 episodes during entire season; 3 = watched a few episodes, maybe 1x/mo during season; 4 = watched semi-regularly during season, 2-3x/mo; and 5 = watched often during season, nearly every episode, 4x/mo. Participants indicated viewing

frequencies of programs in a target year by placing a rating from the scale beside each program title in the television matrix.

Television program content recall. After participants completed the television program viewing frequency reports for the first target year, a television program content recall measure was administered for that year (see Appendix B, D, and F for 1996, 2001, and 2006, respectively). First, the experimenter selected one program series from the target year to which the participant assigned a rating of "0: never heard of that program, never watched any episode", one the participant rated "1: heard of it, but never watched any episode", one the participant rated "3: watched a few episodes, maybe 1x/mo during season", and one the participant rated "5: watched often during season, nearly every episode, 4x/mo." For each of these programs, the participants were asked, "to write down the names of as many characters and actors as you can remember and the general themes or plot lines from the program." Finally, each program selected for the recall measure was followed by one question asking the participants if they had watched that program in re-runs since the target year, using the scale "0: never." "1: occasionally," and "2: frequently." Upon completion of the first television program content recall measure, the participant was given the viewing frequency report for the next target year followed by the recall measure for that year, and then the last two measures for the last target year.

Contextual cues, activities checklist, and family rules. Menon and Yorkston (2000) found that contextual cues facilitated memory-based processing of behavior frequency estimates. Prior to assigning viewing frequency ratings to television programs in a target year, each participant was first asked four questions intended to orient his or her memory to a specific target year. For example, when asked to recall television

viewing and content from 1996, they were first oriented to that year by being asked: "Where did you live in 1996?", "Name up to three schoolteachers you had in 1996", "How old were you in 1996?", and "What grade were you in during 1996?".

Participants were also asked to complete an activities checklist designed to identify any other activities that participants might have been engaged in other than television viewing during the primetime broadcast hours in a given target year. For example, the activities checklist asked participants, "During the 1996 year, how many nights per week, if any, were you involved in extracurricular activities that occurred between 7:00 and 10:00 pm? Place a number beside each activity that you participated in, indicating how many nights per week you engaged in the activity (i.e., 1 for one night per week, 4 for four nights per week, etc.)." The checklist included the following activities: sports, dance, clubs (4H, etc.), music, art lessons, Scouts, church, martial arts, volunteer work, academics, and miscellaneous activities.

Additionally, participants were asked two questions identifying family rules which might have affected their viewing frequency of primetime programs. For example, the family rule questions asked participants, "During the 1996 year, did your family have a time rule for watching television (i.e., no television past 8:00 pm)?" and "During the 1996 year, did your family have a content rule for watching television (i.e., no television containing violence)?". For each question, participants gave either a "0: no" response or a "1: yes" response. For an example of the television viewing measure, the contextual cues, the activities checklist, and the family rules questions, see Appendix A, C, and E for 1996, 2001, and 2006, respectively.

Perceived realism of television. As a final measure, participants completed a perceived realism of television scale (see Appendix G). Each item was rated using a 5-interval response scale where "5 = definitely agree…1 = definitely disagree" and summed for an overall perceived television realism score.

Procedure

All measures were presented as printed questionnaire documents. The participants wrote their responses directly on the questionnaires and completed the contextual cues, activities checklist, and family rules questions, followed by the television program viewing frequency report, and then the television program content recall measure. In order to decrease demand characteristics, participants were not allowed to see any ratings associated with the program titles for which they were asked to recall characters/actors and plot elements. Participants were asked to complete these measures for the year 1996, 2002, and 2006 in systematically counterbalanced fashion to eliminate order effects or fatigue effects. Specifically, complete counterbalancing was used for order of presentation of year (3 years represented 6 distinct orders) and program content recall (4 levels of content recall represented 24 distinct orders). Questionnaire packets were made up prior to testing for 75 participants, so there were 12 packets per each distinct year combination and 3 packets per each distinct viewing level combination. This process provided questionnaire packets for 72 of the 75 participants. The remaining 3 participant packets were composed of distinct year and viewing level combinations selected using a random number generator. Program titles chosen for the content recall task were selected from different days of the week during testing based on a prearranged pattern using a random number generator to determine the starting point. Finally,

participants completed the perceived realism of television measure. Individuals completed the questionnaires in approximately one hour.

CHAPTER V

RESULTS

Television program viewing frequency reports

The television program viewing frequency report assessed past television viewing patterns by asking participants to rate the viewing frequency of every program in a primetime network television schedule for three target years (1996, 2001, and 2006). Participants were expected to report a pattern of viewing frequency consistent with a small number of television programs "watched often during the season", a larger number of programs for which "a few episodes were watched", and an even larger group of programs that were either "never heard of" or "heard of, but never watched". To test the hypothesis viewing frequencies were obtained for each of the ratings levels used in the television program viewing frequency reports. The data supported this hypothesis as, across the three years of programming schedules, participants reported that 44.07% of program series were rated "0: never heard of, never watched," 35.04% were rated "1: heard of, but never watched," 9.65% were rated "2: only 1 or 2 episodes watched during entire season," 5.70% were rated "3: a few episodes watched, maybe 1x/mo during season," 3.42% were rated "4: watched semi-regularly during season, 2-3x/mo," and 2.13% were rated "5: watched often during season, nearly every episode, 4x/mo." Distributions of viewing levels were similar for each year measured and were consistent with the results of Potts et al. (in press).

The validity of the television program viewing frequency reports was further assessed by examining ratings given to programs which were broadcast opposite the programs to which participants gave ratings of 5 ("watched often during the season, nearly every episode, 4x/month"). If participants reported accurate patterns of viewing, there should be low viewing frequencies given to programs broadcast in the same time slots as the 5-rated programs. Results showed that the average rating given to programs broadcast opposite 5-rated programs was 1.36, which confirms the expected patterns of viewing and indicates only infrequent viewing of programs broadcast opposite the frequently-viewed favorite programs.

As in Potts et al. (in press), the correlations among participants' overall viewing levels across the three target years were examined for individual consistency across years in reported viewing levels. A total viewing score was computed by summing the individual viewing level ratings for all programs in a target year. The means and standard deviations for the total viewing scores obtained for each year were 151.26 (SD = 24.87), 159.78 (SD = 25.45), and 130.78 (SD = 16.71), for 1996, 2001, and 2006, respectively. These overall viewing level scores were significantly correlated with each other: $r_{96\text{-}01}$ = .66, $r_{96\text{-}06}$ = .49, and $r_{01\text{-}06}$ = .44, all ps < .001, indicating individual consistency across years in reported overall viewing levels.

False programs

Discriminant validity of television viewing reports was assessed by including two false programs per year in the list of actual programs. It was predicted that the false programs would be rated by participants as "0: never heard of, never watched." Out of 456 total ratings given to false programs across the three target years, 454 (99.6%) were

ratings indicating never having watched the false programs. Specifically, there were 425 (93.2%) rated as "0: never heard of, never watched" and 29 (6.4%) rated as "1: heard of, but never watched. In only 2 instances (.04%) did a participant report having viewed a false program, and in both instances the rating was a 2 (only 1 or 2 episodes watched during entire season). These results support accuracy in participants' recall for past television viewing patterns and are consistent with Potts et al. (in press).

Extracurricular activities checklist

Overall viewing levels were predicted to reflect participants' opportunities to watch the primetime programs in the provided schedules. Extracurricular activities occurring during primetime programming were expected to limit a person's overall viewing level by taking the individual away from television and therefore limiting opportunities to view primetime programs. An inverse relationship was predicted between reports of extracurricular activities and viewing frequency reports. Table 1 presents individual and total extracurricular activities means and standard deviations for each of the three target years.

Table 1

Mean number of activities per week participants engaged in according to the activities checklist

	Year		
Activity	1996	2001	2006
Sports	2.42 (1.69)	2.61 (2.04)	1.25 (1.62)
Cultural	0.59 (1.04)	0.86 (1.31)	0.68 (1.44)
Clubs	0.58 (1.06)	.80 (1.32)	1.33 (1.85)
Church	1.03 (1.01)	1.12 (1.10)	0.61 (0.88)
Volunteer	0.24 (0.94)	0.28 (0.92)	0.29 (0.81)
Jobs	0.93 (1.72)	1.62 (2.21)	1.62 (1.97)
Academic	2.70 (1.94)	3.37 (1.77)	4.18 (1.72)
Socializing	2.83 (2.27)	3.51 (2.00)	4.57 (1.85)
Computer	2.00 (2.21)	3.32 (2.33)	3.88 (2.26)
Activity Total	13.41 (7.05)	17.57 (7.27)	18.71 (6.89)

Note: Standard deviations in parentheses.

In 1996, overall viewing frequency scores were not correlated with any of the individual extracurricular activity scores or an overall activities summary score. In 2001, the overall viewing frequency was correlated only with the volunteer activity (i.e., working at shelters, picking up trash, etc.), $r = .26$, $p = .02$, indicating a positive relationship between overall viewing scores and volunteer activities during primetime programs. In 2006, the overall viewing frequency was correlated only with the socializing activity (i.e., dates, friends, family, etc.),

r = -.27, p = .02, indicating a negative relationship between overall viewing frequency and socializing activities occurring during primetime programs. Although the correlation between overall viewing frequency and the socializing activity was in the expected direction, the correlation between overall viewing frequency and the volunteer activity was of the same magnitude and was opposite the predicted direction, possibly indicating spurious findings that neither support nor refute the hypothesized relation between evening activities and television viewing.

Because most of the individual and total extracurricular activity scores were not correlated with overall viewing frequency scores, the correlations between extracurricular activities and a summary score of only the 5-rated programs (watched often during the season, nearly every episode, 4x/month) were examined. Individuals who reported such high viewing frequencies for these programs should not often report participation in other activities while these shows were being broadcast. Therefore, an inverse relationship was predicted between the programs receiving the highest viewing frequency ratings and extracurricular activities that occurred during the time these programs would have aired. However, results revealed no significant correlations between individual or total extracurricular activity scores and number of 5-rated programs for any of the three target years.

Individual and total extracurricular activity scores within each year were then correlated with a summary score of only the 0-rated programs to test for a positive relationship between extracurricular activities and the number of programs reported as "never heard of, never watched." Perhaps persons who provide many 0 reports ("never heard of, never watched") are less oriented towards television as a leisure activity and

engage in non-television activities in the checklist. In 1996 and 2001, 0-rated programs were correlated only with the volunteer activity, $r = -.34$, $p = .003$ and $r = -.27$, $p = .02$, respectively, indicating that those who did volunteer activities reported fewer programs as "never heard of, never watched," which is counter to the predicted relationship. In 2006, 0-rated programs were not significantly correlated with any of the individual or the total extracurricular activity scores.

Family rules

Childhood and adolescent viewing levels were predicted to be related inversely to family rules concerning the amount of primetime television participants were allowed to watch. Participants' reports of time and content television rules followed an expected age-related pattern. Rules were most prevalent in the earliest year, when participants were, on average, 8 years of age, and then decreased in successive years. In 1996, 51.3% of the sample reported a time rule and 75% reported a content rule; in 2001, 18.4% reported a time rule and 46.1% reported a content rule; and in 2006, only 1.3% reported a time rule and 2.6% reported a content rule.

A significant negative correlation was found between reports of time-limit TV rules and total viewing scores in both 1996 and 2001, $r = -.24$, $p = .04$ for both years, indicating less overall viewing for those who had time rules during the two earliest years. Television time rules and total viewing was not significantly correlated for 2006 when participants were in college. Correlations between content-limiting TV rules and total viewing scores were not significant for any of the three target years.

The relationship between time-limit rules and more specific viewing patterns was also explored. Television time rules should mainly limit late evening viewing.

Therefore, a late night viewing score was computed for each participant by summing his/her viewing level ratings for all programs aired between 9:00 pm and 10:00 pm. First, a one-factor within-subjects ANOVA was used to test whether participants watched more late night television as they got older. The difference between the late night viewing scores for the years 1996, 2001, and 2006 was significant, $F(2, 150) = 20.84$, $p < .001$, $\eta^2 = .22$. Tukey's adjusted pairwise comparisons indicated that more late night television was watched in 2006 ($M = 17.20$, $SD = 7.69$) than in 2001 ($M = 13.78$, $SD = 8.19$), $F(1, 75) = 15.93$, $p < .001$, $\eta^2 = .18$, and more late night television was watched in 2006 than in 1996 ($M = 12.28$, $SD = 7.82$), $F(1, 75) = 35.40$, $p < .001$, $\eta^2 = .32$. The difference between late night viewing in 1996 compared to 2001 was not significant. Next, an independent samples t-test was used to compare late night viewing scores of those who reported a time-limit TV rule and those who did not. Results revealed a significant relationship between late night viewing scores and family time rules in 1996, $t(74) = 2.38$, $p = .02$, $\eta^2 = .07$, indicating that participants who reported a television time rule in their childhood years had lower late night viewing scores ($M = 10.26$, $SD = 6.29$) than participants who reported no time rule in that year ($M = 14.41$, $SD = 8.74$). There was no significant difference between late night viewing scores of those who reported a time-limit television rule and those who did not in 2001, when participants were of high school age.

Television set in own room

Participants' reports revealed the fewest number of television sets in their bedrooms in the earliest year and then an increasing number of television sets in bedrooms as they increased in age: 32.9% in 1996, 60.5% in 2001, and 78.9% in 2006.

However, correlations between bedroom television set and overall television viewing were not significant for any of the three target years. Having a television set in one's own bedroom was negatively correlated with both family time and content rules in 1996 and 2001, $r_{time} = -.31$, $p = .007$; $r_{content} = -.44$, $p < .001$ and $r_{time} = -.24$, $p = .04$; $r_{content} = -.39$, $p = .001$, respectively.

Parental television viewing frequency

Means and standard deviations of weekly parental television viewing scores remained roughly equivalent from the year 1996 to 2001: $M_{mother} = 4.2$, $SD = 1.75$; $M_{father} = 4.24$, $SD = 2.01$ and $M_{mother} = 4.16$, $SD = 1.95$; $M_{father} = 4.11$, $SD = 2.24$, respectively. In 2006, too few participants lived with their parents for meaningful analyses of weekly parental television viewing scores. All correlations between participants' overall viewing frequencies and parental viewing frequencies were not significant.

Television program content recall

Construct validity of self-reported past television viewing frequency was obtained by asking people to recall characters/actors and plot elements from a selection of programs that they had previously assigned a viewing frequency rating. For each year's TV schedule, the experimenter selected one program series for which the participant assigned a rating of "0: never heard of that program, never watched any episode", one the participant rated "1: heard of it, but never watched any episode", one the participant rated "3: watched a few episodes, maybe 1x/mo during season", and one the participant rated "5: watched often during season, nearly every episode, 4x/mo." Participants were predicted to recall more characters/actors and plot elements from frequently viewed programs compared to programs reported as occasionally viewed, which in turn would be

more than programs reported as never watched. The majority of participants provided no recall responses at all for 0-rated programs, so this data was excluded from the main recall analyses.

Before analyzing the television program content recall, a subsample of 27 participants, or approximately 33% of the total sample, was randomly selected for assessment of inter-rater reliability in coding the number of recall responses. Participants' responses were coded separately by two different raters. Of the 3754 characters, actors, and plot elements coded, the two experimenters disagreed on only 4 responses, representing an inter-rater reliability rate of 99.89%.

Characters and actors recalled. Zero order correlations between number of characters/actors recalled and responses to the rerun viewing question for each selected program were significant for 7 of the 9 character/actors recall scores (3 viewing levels across 3 years), and ranged from .25 to .70, all *p*s < .05. Of the two other character/actor recall scores, 1 was nearly significant, $r = .20$, $p = .08$, and one was nonsignificant, $r = .10$, $p = .38$. The significant correlations indicated that rerun viewing subsequent to the targeted broadcast season possibly contributed to participants' ability to recall content detail from the programs. This finding is consistent with the research conducted by Potts et al. (in press), whose results showed a strong main effect of viewing level but a non-significant interaction and main effect of year. Therefore, planned contrasts were used in this study to test the predicted recall level differences between the "5: watched often during season, nearly every episode, 4x/mo," "3: watched a few episodes, maybe 1x/mo during season," and "1: heard of it, but never watched any episode" programs within each target year once amount of rerun viewing ("0: never," "1: occasionally," "2: frequently")

had been co-varied out. Although no year differences in recall were found by Potts et al., overall effects in year (1996 versus 2001, 2001 versus 2006, and 1996 versus 2006) were nevertheless explored as well.

Table 2 presents means and standard deviations for characters/actors recalled in 1996, 2001, and 2006.

Table 2

Memory for TV program characters/actors according to program viewing level and year

	Program viewing level		
Year	5: watched often during season	3: watched a few episodes	1: heard of it, but never watched
	Characters and actors recalled		
1996	6.05 (4.91)	3.82 (2.75)	0.69 (1.03)
2001	6.08 (4.96)	3.64 (2.67)	1.18 (1.67)
2006	7.73 (6.17)	3.20 (2.94)	0.67 (2.40)

Note: Standard deviations in parentheses.

In 1996, planned contrasts showed that significantly more characters/actors were recalled from 5-rated programs than from 3-rated programs, $F(1, 65) = 7.72$, $p = .007$, $\eta^2 = 0.11$. Additionally, the covariate effect was significant, $B = 2.63$, $\beta = .49$, $SE\ B = .59$, $t = 4.48$, $p < .001$. There were also significantly more characters/actors recalled from 3-rated programs than from 1-rated programs, $F(1, 65) = 21.02$, $p < .001$, $\eta^2 = 0.24$. Additionally, the covariate effect was significant, $B = 2.03$, $\beta = .52$, $SE\ B = .41$, $t = 4.94$, $p < .001$.

In 2001, planned contrasts showed a marginally significant difference in amount of characters/actors recalled from 5-rated versus 3-rated programs, with more

characters/actors recalled from 5-rated programs than from 3-rated programs, $F(1, 65) = 3.63$, $p = .06$, $\eta^2 = 0.05$. Additionally, the covariate effect was significant, $B = 2.69$, $\beta = .46$, $SE\ B = .65$, $t = 4.13$, $p < .001$. There was also a marginally significant difference in amount of characters/actors recalled from 3-rated versus 1-rated programs, with more characters/actors recalled from 3-rated programs than from 1-rated programs, $F(1, 65) = 2.99$, $p = .09$, $\eta^2 = 0.04$. Additionally, the covariate effect was significant, $B = 2.23$, $\beta = .54$, $SE\ B = .43$, $t = 5.18$, $p < .001$.

In 2006, planned contrasts showed that significantly more characters/actors were recalled from 5-rated programs than from 3-rated programs, $F(1, 64) = 8.40$, $p = .005$, $\eta^2 = 0.12$. Additionally, the covariate effect was significant, $B = 2.44$, $\beta = .31$, $SE\ B = .93$, $t = 2.63$, $p = .01$. There were also significantly more characters/actors recalled from 3-rated programs than from 1-rated programs, $F(1, 64) = 11.15$, $p = .001$, $\eta^2 = 0.15$. The covariate effect was not significant for this contrast.

To test the effect of year, character/actor scores were averaged across viewing frequency within each year. For the measure of characters and actors recalled, the ANCOVA revealed a significant main effect of year, $F(2, 103) = 3.18$, $p = 0.05$, $\eta^2 = 0.06$. However, the covariate effect was not significant. Contrasts revealed no significant differences in amount of characters/actors recalled in 1996 versus 2001. However, there was a significant difference in the amount of characters/actors recalled in 2001 versus 2006, $F(1, 51) = 3.90$, $p = 0.05$, $\eta^2 = 0.07$, with more characters and actors recalled in 2006 ($M = 3.99$, $SD = 2.72$) than in 2001 ($M = 3.45$, $SD = 1.42$). Additionally, the covariate effect was marginally significant, $B = 1.48$, $\beta = .26$, $SE\ B = .77$, $t = 1.91$, $p = .06$. Contrasts revealed a marginally significant difference in the amount of

characters/actors recalled in 1996 versus 2006, $F(1, 51) = 3.16$, $p = 0.08$, $\eta^2 = 0.06$, with more characters and actors recalled in 2006 ($M = 3.99$, $SD = 2.72$) than in 2001 ($M = 3.42$, $SD = 1.65$). The covariate effect was not significant for this contrast.

Plot elements recalled. Zero order correlations between number of plot elements recalled and responses to the rerun viewing question for each selected program ranged from .29 to .50; 4 of the 9 were significant at $p < .05$. Of the 5 remaining correlations, 3 were nearly significant, with ps < .10, and 2 were nonsignificant, with ps = .34 and .43. These results indicated that rerun viewing possibly contributed to participants' ability to recall such content from several of the programs. A repeated measures analysis of covariance was used to analyze the data with year (1996, 2001, 2006) and program viewing level (5, 3, 1) as independent variables and amount of rerun viewing ("0: never," "1: occasionally," "2: frequently") as a covariate. Again, based on the previous results of Potts et al. (in press) planned contrasts were run to analyze the number of plot elements recalled by participants.

Table 3 presents means and standard deviations for plot elements recalled in 1996, 2001, and 2006.

Table 3

Memory for TV program plot elements according to program viewing level and year

Year	Program viewing level		
	5: watched often during season	3: watched a few episodes	1: heard of it, but never watched
	Plot elements recalled		
1996	6.81 (3.77)	4.45 (2.94)	1.08 (1.35)
2001	6.82 (3.66)	5.30 (3.84)	1.33 (2.54)
2006	7.74 (4.40)	4.79 (3.31)	1.15 (1.69)

Note: Standard deviations in parentheses.

In 1996, planned contrasts showed that significantly more plot elements were recalled from 5-rated programs than from 3-rated programs, $F(1, 65) = 22.52$, $p < .001$, $\eta^2 = 0.26$. Additionally, the covariate effect was significant, $B = 1.25$, $\beta = .33$, $SE\ B = .44$, $t = 2.82$, $p = .006$. There were also significantly more plot elements recalled from 3-rated programs than from 1-rated programs, $F(1, 65) = 30.97$, $p < .001$, $\eta^2 = 0.32$. Additionally, the covariate effect was significant, $B = 1.62$, $\beta = .43$, $SE\ B = .43$, $t = 3.80$, $p < .001$.

In 2001, planned contrasts showed that more plot elements were recalled from 5-rated programs than from 3-rated programs, $F(1, 65) = 4.06$, $p = .05$, $\eta^2 = 0.06$. Additionally, the covariate effect was significant, $B = 1.42$, $\beta = .38$, $SE\ B = .43$, $t = 3.28$, $p = .002$. There were also significantly more plot elements recalled from 3-rated programs than from 1-rated programs, $F(1, 65) = 13.84$, $p < .001$, $\eta^2 = 0.18$. Additionally, the covariate effect was significant, $B = 1.85$, $\beta = .34$, $SE\ B = .63$, $t = 2.94$, $p = .005$.

In 2006, planned contrasts showed that more plot elements were recalled from 5-rated programs than from 3-rated programs, $F(1, 64) = 14.06$, $p < .001$, $\eta^2 = 0.18$. The covariate effect was not significant for this contrast. There were also significantly more plot elements recalled from 3-rated programs than from 1-rated programs, $F(1, 64) = 19.85$, $p < .001$, $\eta^2 = 0.24$. Additionally, the covariate effect was significant, $B = 1.72$, $\beta = .29$, $SE\ B = .70$, $t = 2.46$, $p = .02$.

To test the effect of year, plot element scores were averaged across viewing frequency within each year. For the measure of plot elements recalled, the ANCOVA revealed a marginally significant main effect of year, $F(2, 103) = 2.93$, $p = 0.06$, $\eta^2 = 0.05$. The covariate effect was not significant. Contrasts revealed no significant difference in the amount of plot elements recalled in 1996 versus 2001 or in 2001 versus 2006. There was a significant difference in the number of plot elements recalled in 2006 versus 1996, $F(1, 51) = 5.60$, $p = 0.02$, $\eta^2 = 0.10$, with more plot elements recalled in 2006 ($M = 4.65$, $SD = 2.19$) than in 1996 ($M = 4.10$, $SD = 2.04$). The covariate effect was not significant for this contrast.

Recalled content from infrequently-viewed programs

The revised scale used in the present study permitted researchers to assess more clearly the relationship between program viewing level and content recalled, as individuals in this study could distinguish between programs they had "never been heard of" (corresponding to a "0" on the scale) and programs they had "heard of, but never watched" (corresponding to a "1" on the scale). It was hypothesized that participants would demonstrate more recall of content for 1-rated programs than from 0-rated programs, because even incidental exposure to television advertisements and promotions

for these programs, as well as peer conversations, may result in some general knowledge about the "1-rated"programs, despite having never actually watched those programs. A dependent-samples t-test was used to test the difference between characters/actors recalled from 1-rated programs versus 0-rated programs combined across the three target years. Results revealed a significant difference between characters/actors recalled for the two different viewing level ratings, $t(70) = 6.11$, $p < .001$, $\eta^2 = .35$, indicating that participants recalled more characters/actors from 1-rated programs ($M = 0.82$, $SD = 1.05$) than from 0-rated programs ($M = 0.07$, $SD = 0.17$). A dependent-samples t-test was also used to test the difference between plot elements recalled from 1-rated programs versus 0-rated programs combined across the three target years. Results revealed a significant difference, $t(70) = 9.12$, $p < .001$, $\eta^2 = .54$, indicating that participants recalled more plot elements from 1-rated programs ($M = 1.30$, $SD = 1.13$) than from 0-rated programs ($M = 0.10$, $SD = 0.23$).

Of 228 opportunities to recall content from 0-rated programs (76 participants times 3 years), in only 25 instances did a participant report any recall. Of those 25 instances, 12 of the recalled items were judged to be directly discernable from the program title (e.g., participant recalled "Roger" as a character from the television program entitled "Life with Roger"). Interestingly, 13 of the recalled items could not be discerned from the title, yet were correct, suggesting these participants did have some prior knowledge of the programs they rated (perhaps mistakenly) as "0: never heard of, never watched."

Accuracy of recalled content

Data from several participants, or approximately 20% of the total sample, were randomly chosen for assessment of accuracy of recall data. Accuracy was determined by comparing recalled content with the information provided in the encyclopedia of primetime programs (Brooks & Marsh, 2003) for the 1996 and 2001 schedules, and from a television information website for the 2006 schedule (http://www.tv.com). Of the 982 characters/actors and plot elements recalled by this subsample, 13 individual responses were identifiable as errors, representing an accuracy rate of 98.67%. This result is highly comparable to the accuracy of program content recalled in the Potts et al. (in press) study.

Perceived realism of television

A perceived television realism measure was included for nomological validity (see Appendix D). Scores on the measure of perceived television realism ranged from 23 to 67, with a mean of 41.80 (SD = 10.80). These scores are comparable to those reported in Potts et al. (in press). Unlike in the previous study, the perceived TV realism scores in this sample were not significantly correlated with overall viewing levels for any of the three target years (1996, 2001, 2006).

To further explore the TV realism scores, correlations were examined between perceived realism scores and a summary viewing score of only the 5-rated programs ("watched often during the season, nearly every episode, 4x/month"). Individuals who reported high viewing frequencies for many programs may be the most likely persons to exhibit high perceived television realism. However, results revealed no significant correlations between perceived realism scores and 5-rated program viewing for any of the three target years.

Perceived realism scores were then correlated with a summary score of only the 0-rated programs ("never heard of, never watched"), and an inverse relationship was predicted. Perhaps persons who provide many 0 reports are less oriented towards television, and would exhibit lower perceived realism scores. However, for all three target years there were no significant correlations between perceived realism scores and 0-rated programs.

CHAPTER VI

DISCUSSION

The purpose of the present study was to investigate young adults' recall of childhood and adolescent television viewing patterns. The main hypothesis, that adults can recall childhood television viewing patterns, was generally supported and extended the research of Potts et al. (in press). Young adults appear to be able to recall past television viewing patterns when presented with past primetime television schedules.

Support for the validity of viewing frequency reports was obtained from several measures. One measure identified whether or not participants could accurately recall the frequency with which they watched primetime programs broadcast during three target years (1996, 2001, 2006), and represented television viewing from when participants were as young as eight years of age. Because primetime television viewing of major network channel programs represents only a fraction of that viewing, and viewers are selective in their program choices (Rubin, 2002), participants were predicted to report a "natural" pattern of viewing frequencies, namely a small number of television programs "watched often during the season", a larger number programs for which "a few episodes were watched", and an even larger group of programs that were either "never heard of" or "heard of, but never watched". The viewing reports observed in this study followed just such an ecologically valid pattern.

Validity of these television viewing frequency reports was further supported by an examination of ratings given to programs which aired opposite programs rated as "5: watched often during the season, nearly every episode, 4x/month." If participants were accurate in their reported viewing frequencies, then watching a 5-rated program should leave little or no time to watch other programs broadcast opposite these programs. Results showed very limited viewing of any other programs broadcast during the highly-watched programs.

Significant correlations found between overall viewing levels across the three target years showed individual consistency in participant reports of their viewing patterns. This evidence is convergent with previous research findings of observed longitudinal consistency in overall television consumption levels (Himmelweit & Swift, 1976; Tangey & Feshbach, 1988; Huston et al., 1990; Hancox, Milne, & Poulton, 2004) as well as the findings of Potts et al. (in press).

Discriminant validity was assessed for the program viewing frequency reports by including two false program titles for each target year in the list of actual primetime programs. Discriminant validity was quite good as evidenced by very few erroneous reports of ever having viewed the fictitious program titles. This result replicated the Potts et al. (in press) findings and indicates that persons appear to make few "false positive" errors in their recall of past television viewing experiences.

Construct validity of the television viewing reports was further assessed by the inclusion of measures of variables which were hypothesized to affect overall primetime television viewing levels. One measure was an evening activities checklist, which asked about activities that may have occurred during the hours when primetime television

programs were aired. Engaging in non-television activities during primetime hours should limit the amount of primetime television a person was able to watch, so an inverse relationship was predicted between the activities reports and overall viewing levels for primetime programs. However, no such relationship was observed in this study. While the lack of support for this hypothesis is not fully understood, it is possible that the activities checklist did not measure what it was designed to measure. One potential problem with the checklist is the inclusion of activities in which participants could have engaged while watching primetime television, such as socializing with family/friends, studying, or jobs, church, or volunteer activities where a television could be located; such activities would not supplant television viewing. Another potential problem with the checklist concerns the subjective definitions of the specific activities listed. It is possible that some participants may have interpreted an activity one way whereas other participant interpreted the same activity differently. For example, one individual may have defined the "sports" item as including a quick game of catch with a friend or sibling and possibly occurring "7 nights a week," whereas another individual may have defined sports as organized practices and competition, which would not occur as often. Also, participants could have engaged in an activity during only part of the fall primetime season, which made it possible to report participation in an activity 7 nights a week but still rate programs as frequently viewed, reflecting viewing that occurred later in the season. In future studies the activities checklist should be modified to more clearly specify activities that would necessarily take the participant away from television viewing, to clearly define the individual activities (i.e., separating out-of-the-home jobs from household

chores), and to define time durations for participation in the activities that would allow researchers to determine if the activity truly limited primetime television consumption.

Other home environment factors were measured which could also limit primetime television viewing. Two questionnaire items asked participants whether there were family rules that either limited how late they could stay up to watch primetime programs or limited the content of primetime programs allowed. The hypothesized relationship between family rules and overall viewing was partially supported by a negative correlation between viewing time-limit rules and overall television viewing scores for the two earliest years, 1996 and 2001, but not 2006. This follows a logical and natural pattern, with more participants reporting the presence of family time rules in 1996, when they would have been approximately 8 years of age; somewhat fewer reporting family time rules in 2001, when they would have been approximately 13 years old; and almost none reporting family time rules in 2006, when participants were approximately 18 years of age and most were away from home attending college.

For further validation of participants' reports of the family time rule, a late night TV viewing score was computed and compared across participants that either had or did not have a time rule. Those with a family time rule had significantly lower viewing frequencies for late night programs than those without a family time rule. Also, results from an ANOVA on late night television scores indicated that participants reported more late night television viewing in 2006 than in 2001, and more late night television viewing in 2001 than in 1996, which follows an expected and natural developmental pattern where individuals watch more late night television as they get older.

The hypothesized relationship between the family content rule (e.g., no television containing violence, sex, language) and overall viewing was not supported for any of the three target years. Family content rules may have reduced overall viewing for some individuals, however it is possible that for others the content rule, when present, may have limited viewing of certain programs but not all programs. For these individuals, programs that were not prohibited by the content rule may have been watched occasionally or frequently, potentially leading to high overall TV viewing.

Finally, although not hypothesized, an interesting finding resulted from examining the correlations of family rules and participants' reports of televisions in their own bedrooms; those who reported televisions in their rooms also reported significantly fewer family rules. This suggests there may be fewer rules governing television viewing placed on children with televisions in their own rooms, and may reflect individual differences in family regulation of children's television viewing.

The second measure used to support the main hypothesis, namely, that persons can recall earlier television viewing patterns, asked participants to recall as many characters/actors and plot elements as they could from programs for which they had previously assigned ratings of 5, 3, and 1. Results revealed a strong relationship between level of reported viewing of programs and the amount recalled from them. This pattern was consistent across all three target years and replicates findings of both of the Potts et al. (in press) experiments. Findings of the content recall task lend support to the notion that retrospective viewing reports are valid assessments of past television viewing.

The observed pattern of recall supports past literature suggesting that repetition of a stimulus leads to improved recall. The more frequently the participants in this study

reported watching programs, the better their recall was of the content from those programs. In fact, participants' reported viewing of programs in rerun was correlated with the amount of content recalled from that program, adding support to the hypothesis that more content will be recalled from programs the more frequently those programs are viewed. However, the recall of program content was found to be related to the reported viewing level during the program's original broadcast year even when rerun viewing frequency was covaried out.

Participants' recall of program content, as referenced against the Brooks and Marsh (2003) encyclopedia of primetime television programs, was overwhelmingly accurate. The low amount of factual errors in recalled program content was highly comparable to that of Potts et al. (in press), indicating that individuals retained accurate program content originally experienced when they were as young as 8 years of age. This high accuracy also lends support to the validity of the viewing frequency reports.

The present study included some methodological improvements over previous research. In the two main experiments reported by Potts et al. (in press), participants were allowed to select the 1-, 3-, and 5-rated programs to be used for the content recall task. Allowing participants to select those programs could have inflated the relationship between viewing frequency and recall, as participants may have chosen programs for which they knew they could recall many details. In the present study, the experimenter chose the programs for the recall task instead of having participants select their own programs. This was a more stringent measure that controlled for inflation of recall by preventing participants from deliberately selecting programs with which they were familiar. Furthermore, participants in the earlier studies could have used their television

viewing ratings as guides for how much recalled material was expected. Such demand was reduced in the present study by not allowing participants to see their previous viewing ratings during the content recall task. Under these more stringent conditions, patterns of recall remained in the predicted direction, in which more content was recalled from frequently-watched programs than from less-frequently-watched programs. Also, it is important to note that participants did not simply guess at the recall task as evidenced by a 98.67% accuracy rate for responses given and that program content was only one of several other items participants were able to recall from remote periods in their lives. Taken together, these results confirm the validity of the retrospective memory for past television viewing.

Nomological validity of the viewing reports was tested by use of a perceived realism of television measure (Potter, 1988). Past studies, including Potts et al. (in press), have found a positive relationship between overall television consumption and beliefs about the realism of information presented on television. However, such relationships were not seen in the present results, as correlations between reported viewing levels for the three target years and a current measure of perceived TV realism were not significant. Perhaps the programs selected as examples in the television realism scale, although generally well known, were not watched by a significant portion of the sample and therefore could not be judged regarding the extent to which the characters and situations in those programs are reflective of real life.

The present results are consistent with those of Potts et al. (in press) as well as other previous research demonstrating very long term memory for various information (e.g., Bahrick, 1984; Bahrick, Bahrick, & Wittlinger, 1975; Schmidt, Peeck, & Paas,

2000), suggesting that some material, including television viewing frequency and content of programs, learned at an earlier period in life can be remembered with accuracy for several years and may in fact remain in memory throughout the lifespan. Results are also supportive of the notion that individuals can be accurate in their ability to judge the frequency with which events occur and correspond to past memory research conducted on individuals' sensitivity to stimulus frequency (Hasher & Zacks, 1984; Zacks & Hasher, 2002). Evidence from this study, as well as Potts et al. (in press), show that people can recall their own television program viewing frequency, as well as specific content from those programs stored during viewing, for several years after the original exposure.

Establishing a valid measurement of retrospective television viewing has various implications for future research on relationships between past media exposure and long-term psychological outcomes. Researchers could investigate the relationship between past exposure to specific media content at different developmental periods and current psychological characteristics, with a focus on individual differences in media consumption. Exposure to different genres of programs, such as reality television, comedic sitcoms, etc., could be examined at various developmental stages along with later adult characteristics to determine the psychological impact of viewing these types of programs over the course of development. Additionally, because specific television program titles were used in this measure, researchers could examine exposure to individual programs in early life for their influence on later thoughts and behaviors.

One understudied area concerning the impact of past television exposure on current psychological states is the long-term effect of exposure to prosocial television.

With a valid retrospective measure of television viewing, investigators would be able to test whether viewing prosocial television programs at different points in childhood has the same relationship to adult prosocial attitudes as viewing prosocial television programs during adolescence or adulthood. For example, viewing the prosocial themes (e.g., helping, sharing, control of impulses) in a program like "Mr. Rogers" during childhood might have a different impact on adult prosocial behavior than viewing the prosocial messages (e.g., tolerance of diversity, empathy or sympathy for another) in a program like "Full House" when the individual is an adolescent.

Although much research has been previously reported, another important area of study concerns the effects of long-term exposure to television violence on viewers' aggressive behaviors. Some longitudinal studies (Lefkowitz et. al, 1972; Huesmann et. al, 1986; Huesmann et. al, 2003) have demonstrated that exposure to televised violence at an early age is associated with aggressive, and in some cases, criminal behaviors, later in life. Valid retrospective television reports would not only allow researchers to corroborate past findings in a cost-efficient manner, but would also allow for more in-depth analyses of program selection and content viewed. For example, researchers could examine long-term effects of viewing fictional violence (i.e., programs like "24" or "Heroes") versus non-fictional violence (i.e., programs like "The Ultimate Fighter" or "The Contender").

A third area of study that may benefit from the use of valid retrospective television reports is body image and exposure to television research. Previous studies, such as Kilbourne (1995), have revealed long-term psychological and physical effects of exposure to television images and body satisfaction. These include multiple failed

dieting attempts as well as more serious outcomes, such as bulimia nervosa, anorexia nervosa, and depression. Using retrospective reports of television viewing, researchers could gain valuable knowledge concerning the types of programs that individuals are watching over the course of their development and how that might impact the way they feel about their bodies as they get older. As one example, it may be helpful when treating individuals with disorders such as anorexia nervosa or bulimia nervosa to have an accurate record of the programs those individuals were or are currently watching to determine if the content of those programs play a role in self-image.

Although the present study produced results generally consistent with Potts et al. (in press) as well as other past research, several limitations should be addressed in future studies. Researchers have not examined participants' depth of processing of specific programs and the impact that different levels of processing might have on recall of content from those programs and, ultimately, its effects on behavior. It is possible that individuals identify with certain programs and characters more than others, despite similar viewing frequencies. This could mean that although two programs were given identical frequency ratings on the television viewing reports, the individual might identify with one program more than the other, which could determine the impact of those programs on the viewer. For example, although "Scrubs" and "Seinfeld" might both be given a rating of "5: watched often during season, nearly every episode, 4x/mo," the individual might have identified more with the characters and themes in "Seinfeld" than those in "Scrubs" and therefore potentially process the content more deeply than the former. Future studies could determine the extent to which individuals identify with

certain programs within a particular rating by asking questions about the impact of those programs in other aspects of the participants' lives.

According to Bahrick and Karis's (1982) discussion of research methods in very long-term "ecological" memory, knowledge of initial exposure to a target stimulus is limited or nonexistent in much of long-term memory research, so verifying the accuracy of self-reports can be difficult. For instance, in this study there is no independent record of the actual programs participants viewed during the target years, so verification of the accuracy of participants' self-reported viewing frequencies becomes difficult. Bahrick and Karis (1982) suggested three methods that could be used to help verify the accuracy of self-reported behaviors and provide some experimental control. These include natural control groups, recognition foils, and knowledgeable informants. One potential natural control group includes individuals who lived out of the country and did not have access to information from broadcast programs during the target years. Testing their knowledge of the programs against the knowledge of individuals living in the country during the programs' original broadcasts would provide further validation of participants' viewing frequency reports. Also, if an individual's memory is accurate for a past event, he/she should not report remembering things that did not occur or were not present. It is for this reason that researchers can use recognition foils; if the participant reports memory for a recognition foil, then the accuracy of his/her memory is in question. In the present study, as in Potts et al. (in press), false program titles were inserted into the actual program schedules for the three target years as recognition foils and results showed almost no reports of viewing the false titles. Finally, knowledgeable informants can offer independent corroboration of persons' viewing reports. Siblings of similar age to the

target individual may have common coviewing preferences and experiences and may be able to validate the target individuals' past viewing reports. Parents who co-viewed programs with their children or talked with their children about the programs they watched could also provide validating information about the target's past viewing.

In conclusion, the present study replicated and extended the primary research findings of Potts et al. (in press), supporting the notion that retrospective self-reports of past television viewing can be valid. Such a measure may be an efficient way to study the various long-term outcomes of early media consumption.

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APPENDICES

APPENDIX A

FALL 1996 TV SEASON

1. In what city did you live in the fall of 1996?

2. What school grade were you in during the fall 1996 semester?

   K 1 2 3 4 5 6 7 8 9 10 11 12 FR SO JR SR Out of School
   College

3. List up to 3 teachers you had in fall 1996?

   _____ _____ _____

4. How old were you in the fall of 1996?

5. During the fall of 1996, how many nights a week, if any, were you involved in extracurricular activities that occurred between 7:00 and 10:00 pm? Place a number beside each activity that you participated in, indicating how many nights a week you engaged in the activity (i.e., "1" for one night a week, "4" for four nights a week, etc.).

Activity	# of evenings
sports (team, practice, individual, etc.)	_____
cultural (dance, music, theater, art, etc.)	_____
clubs/organizations (4H, Scouts, Young Life, Greek, etc.)	_____
church (services, youth groups, etc.)	_____
volunteer work (shelters, picking up trash, etc.)	_____
jobs (employment, farm, chores, etc.)	_____
academics (classes, homework, library, etc.)	_____
socializing (dates, friends, family, etc.)	_____
computer/internet/videogames (more than 30 minute session)	_____
other _____	_____
_____	_____
_____	_____

6. During the fall of 1996, did your family have a time rule for watching television (i.e., no television past 8:00 pm)? No Yes

7. During the fall of 1996, did your family have a content rule for watching television (i.e., no television containing violence, sex, language, etc.)? No Yes

8. During the fall of 1996, did you have a television set in your own room? No Yes

9. During the fall of 1996, how many nights a week did your mother watch television between the hours of 7:00 and 10:00 pm?
   1 2 3 4 5 6 7 did not live with mother that year

10. During the fall of 1996, how many nights a week did your father watch television between the hours of 7:00 and 10:00 pm?
    1 2 3 4 5 6 7 did not live with father that year

Use the television schedule on the following page for the fall 1996 season. Next to each television program title in the schedule, indicate how much you watched it in that year using the scale below:

0	1	2	3	4	5
never heard of that program, never watched any episode	heard of it, but never watched any episode	watched only 1 or 2 episodes during the entire season	watched a few episodes, maybe 1 time a month during the season	watched semi-regularly, 2-3 times a month during the season	watched often, nearly every episode, 4 times a month during the season

The following is an example of how to fill out the television viewing report.

		7:00 PM	7:30 PM	8:00 PM	8:30 PM	9:00 PM	9:30 PM
Monday	A	Drew Carey Show	Whose Line Is It Anyway?	Monday Night Football			
	C	King of Queens	Yes, Dear	Everybody Loves Raymond	Still Standing	CSI: Miami	
	F	Boston Public		Girls Club			
	N	Fear Factor		Third Watch		Crossing Jordan	
	U	The Parkers	One on One	Girlfriends	Half & Half		
	W	7th Heaven		Everwood			

Fall 1996

		7:00 PM	7:30 PM	8:00 PM	8:30 PM	9:00 PM	9:30 PM
Sunday	A	Lois & Clark		ABC Sunday Movie			
	C	Touched by an Angel		CBS Sunday Movie			
	F	The Simpsons	Ned and Stacey	The X-Files			
	N	3rd Rock from the Sun	Boston Common	NBC Sunday Movie			
	W	The Parent 'hood	SteveHarvey Show	Unhappily Ever After	Life with Roger		
Monday	A	Dangerous Minds		Monday Night Football			
	C	Cosby	Pearl	MurphyBrown	Cybill	Chicago Hope	
	F	Melrose Place		Party Girl	Lush Life		
	N	Jeff Foxworthy Show	Mr. Rhodes	Time Tunnel			
	U	In The House	Malcolm & Eddie	Goode Behavior	Sparks		
	W	7th Heaven		Savannah			
Tuesday	A	Roseanne	Life's Work	Home Imprv.	Spin City	N.Y.P.D. Blue	
	C	Promised Land		Longstreet			
	F	Fox Night at the Movies					
	N	Mad About You	Something So Right	Fraiser	Caroline in the City	Dateline NBC	
	U	Moesha	Homeboys in Outer Space	Burning Zone			
Wednesday	A	Ellen	Townies	Grace Under Fire	Drew Carey Show	Primetime Live	
	C	The Nanny	Almost Perfect	CBS Wednesday Movie			
	F	Beverly Hills, 90210		Party of Five			
	N	Wings	John Larro-quette Show	News Radio	Men Behaving Badly	Law & Order	
	U	The Sentinel		Star Trek: Voyager			
	W	Sister, Sister	Nick Freno: Licen. Teacher	Wayans Bros.	Jamie Foxx Show		
Thursday	A	High Incident		Murder One		Turning Point	
	C	Diagnosis Murder		Moloney		48 Hours	
	F	Martin	Living Single	New York Undercover			
	N	Friends	Single Guy	Seinfeld	Suddenly Susan	ER	
Friday	A	Family Matters	Sabrina, the Teenage Witch	Clueless	Boy Meets World	20/20	
	C	Dave's World	Everybody Loves Raymond	Mr. & Mrs. Smith		Nash Bridges	
	F	Sliders		Millennium			
	N	Unsolved Mysteries		Dateline NBC		Homicide: Life on the Street	
Saturday	A	Second Noah		Coach	CommonLaw	Relativity	
	C	Dr. Quinn, Medicine Woman		Early Edition		Walker, Texas Ranger	
	F	Cops		Married with Children	Love and Marriage		
	N	Dark Skies		The Pretender		Profiler	

APPENDIX B

FALL 1996 PROGRAM CONTENT RECALL MEASURE

The experimenter will have selected 4 programs from the preceding television schedule. For each program write down the names of as many characters or actors you can remember and the general themes or plot lines of the show.

A. Please provide the following information for the program listed:

PROGRAM TITLE: _____

Characters/Actors remembered:

Plot elements remembered (i.e., common locations, recurring activities, & general relationships):

Is this a program you have watched in re-reruns since 1996?

No Occasionally Frequently

B. Please provide the following information for the program listed:

PROGRAM TITLE: _____

Characters/Actors remembered:

Plot elements remembered (i.e., common locations, recurring activities, & general relationships):

Is this a program you have watched in re-reruns since 1996?

No Occasionally Frequently

C. Please provide the following information for the program listed:

PROGRAM TITLE: _____

Characters/Actors remembered:

Plot elements remembered (i.e., common locations, recurring activities, & general relationships):

Is this a program you have watched in re-reruns since 1996?

No Occasionally Frequently

D. Please provide the following information for the program listed:

PROGRAM TITLE: _____

Characters/Actors remembered:

Plot elements remembered (i.e., common locations, recurring activities, & general relationships):

Is this a program you have watched in re-reruns since 1996?

No Occasionally Frequently

APPENDIX C

FALL 2001 TV SEASON

1. In what city did you live in the fall of 2001?

2. What school grade were you in during the fall 2001 semester?

   K 1 2 3 4 5 6 7 8 9 10 11 12 FR SO JR SR Out of School
   College

3. List up to 3 teachers you had in fall 2001?

   _____ _____ _____

4. How old were you in the fall of 2001?

5. During the fall of 2001, how many nights a week, if any, were you involved in extracurricular activities that occurred between 7:00 and 10:00 pm? Place a number beside each activity that you participated in, indicating how many nights a week you engaged in the activity (i.e., "1" for one night a week, "4" for four nights a week, etc.).

Activity	# of evenings
sports (team, practice, individual, etc.)	_____
cultural (dance, music, theater, art, etc.)	_____
clubs/organizations (4H, Scouts, Young Life, Greek, etc.)	_____
church (services, youth groups, etc.)	_____
volunteer work (shelters, picking up trash, etc.)	_____
jobs (employment, farm, chores, etc.)	_____
academics (classes, homework, library, etc.)	_____
socializing (dates, friends, family, etc.)	_____
computer/internet/videogames (more than 30 minute session)	_____
other _____	_____
_____	_____
_____	_____

6. During the fall of 2001, did your family have a time rule for watching television (i.e., no television past 8:00 pm)? No Yes

7. During the fall of 2001, did your family have a content rule for watching television (i.e., no television containing violence, sex, language, etc.)? No Yes

8. During the fall of 2001, did you have a television set in your own room? No Yes

9. During the fall of 2001, how many nights a week did your mother watch television between the hours of 7:00 and 10:00 pm?
   1 2 3 4 5 6 7 did not live with mother that year

10. During the fall of 2001, how many nights a week did your father watch television between the hours of 7:00 and 10:00 pm?
    1 2 3 4 5 6 7 did not live with father that year

Use the television schedule on the following page for the fall 2001 season. Next to each television program title in the schedule, indicate how much you watched it in that year using the scale below:

0	1	2	3	4	5
never heard of that program, never watched any episode	heard of it, but never watched any episode	watched only 1 or 2 episodes during the entire season	watched a few episodes, maybe 1 time a month during the season	watched semi-regularly, 2-3 times a month during the season	watched often, nearly every episode, 4 times a month during the season

The following is an example of how to fill out the television viewing report.

		7:00 PM	7:30 PM	8:00 PM	8:30 PM	9:00 PM	9:30 PM
Monday	A	Drew Carey Show	Whose Line Is It Anyway?	Monday Night Football			
	C	King of Queens	Yes, Dear	Everybody Loves Raymond	Still Standing	CSI: Miami	
	F	Boston Public		Girls Club			
	N	Fear Factor		Third Watch		Crossing Jordan	
	U	The Parkers	One on One	Girlfriends	Half & Half		
	W	7th Heaven		Everwood			

Fall 2001

		7:00 PM	7:30 PM	8:00 PM	8:30 PM	9:00 PM	9:30 PM
Sunday	A	Wonderful World of Disney		Alias		The Practice	
	C	Education of Max Bickford		Many Happy Returns			
	F	The Simpsons	Malcolm in the Middle	The X-Files			
	N	Weakest Link		Law & Order: C.I.		UC: Undercover	
	W	Steve Harvey Show	Men, Women & Dogs	Nikki	Off Centre		
Monday	A	Who Wants/Millionaire?		Monday Night Football			
	C	King of Queens	Yes, Dear	Everybody Loves Raymond	Becker	Family Law	
	F	Boston Public		Ally McBeal			
	N	Weakest Link		Third Watch		Crossing Jordan	
	U	The Hughleys	One on One	The Parkers	Girlfriends		
	W	7th Heaven		Angel			
Tuesday	A	Dharma & Greg	What About Joan?	Bob Patterson	Spin City	Philly	
	C	JAG		The Guardian		Judging Amy	
	F	That70sShow	Undeclared	Love Cruise: Maiden Voyage			
	N	Emeril	ThreeSisters	Fraiser	Scrubs	Dateline NBC	
	U	Buffy, the Vampire Slayer		Roswell			
	W	Gilmore Girls		Smallville			
Wednesday	A	My Wife and Kids	According to Jim	Drew Carey Show	Whose Line Is It Anyway?	20/20	
	C	60 Minutes II		Amazing Race		Wolf Lake	
	F		Grounded for Life	Bernie Mac	Titus		
	N	Ed		West Wing		Law & Order	
	U	Enterprise		Special Unit 2			
	W	Dawson's Creek		Felicity			
Thursday	A	Whose Line Is It Anyway?		Who Wants/Millionaire?		Primetime Thursday	
	C	Survivor: Africa		CSI		The Agency	
	F	Family Guy	The Tick	Temptation Island 2			
	N	Friends	Inside Schwartz	Will & Grace	Just Shoot Me	ER	
	U	WWF Smackdown!					
	W	Popstars 2	ElimidateDeluxe	Charmed			
Friday	A	Mole II: The Next Betrayal		Thieves		Once and Again	
	C	TheEllenShow	Danny	That's Life		48 Hours	
	F	Dark Angel		Pasadena			
	N	Providence		The Outcasts		Law & Order: S.V.U.	
	U	UPN Friday Movie					
	W	Sabrina, the Teenage Witch	Maybe It's Me	Reba	Raising Dad		
Saturday	A	ABC Saturday Movie					
	C	Touched by an Angel		Citizen Baines		The District	
	F	Cops		America's Most Wanted: America Fights Back			
	N			NBC Saturday Movie			

APPENDIX D

FALL 2001 PROGRAM CONTENT RECALL MEASURE

The experimenter will have selected 4 programs from the preceding television schedule. For each program write down the names of as many characters or actors you can remember and the general themes or plot lines of the show.

A. Please provide the following information for the program listed:

PROGRAM TITLE: _____

Characters/Actors remembered:

Plot elements remembered (i.e., common locations, recurring activities, & general relationships):

Is this a program you have watched in re-reruns since 2001?

No Occasionally Frequently

B. Please provide the following information for the program listed:

PROGRAM TITLE: _____

Characters/Actors remembered:

Plot elements remembered (i.e., common locations, recurring activities, & general relationships):

Is this a program you have watched in re-reruns since 2001?

No Occasionally Frequently

C. Please provide the following information for the program listed:

PROGRAM TITLE: _____

Characters/Actors remembered:

Plot elements remembered (i.e., common locations, recurring activities, & general relationships):

Is this a program you have watched in re-reruns since 2001?

No Occasionally Frequently

D. Please provide the following information for the program listed:

PROGRAM TITLE: _____

Characters/Actors remembered:

Plot elements remembered (i.e., common locations, recurring activities, & general relationships):

Is this a program you have watched in re-reruns since 2001?

No Occasionally Frequently

APPENDIX E

FALL 2006 TV SEASON

1. In what city did you live in the fall of 2006?

2. What school grade were you in during the fall 2006 semester?

   K 1 2 3 4 5 6 7 8 9 10 11 12 FR SO JR SR Out of School
   College

3. List up to 3 teachers you had in fall 2006?

   _____ _____ _____

4. How old were you in the fall of 2006?

5. During the fall of 2006, how many nights a week, if any, were you involved in extracurricular activities that occurred between 7:00 and 10:00 pm? Place a number beside each activity that you participated in, indicating how many nights a week you engaged in the activity (i.e., "1" for one night a week, "4" for four nights a week, etc.).

Activity	# of evenings
sports (team, practice, individual, etc.)	_____
cultural (dance, music, theater, art, etc.)	_____
clubs/organizations (4H, Scouts, Young Life, Greek, etc.)	_____
church (services, youth groups, etc.)	_____
volunteer work (shelters, picking up trash, etc.)	_____
jobs (employment, farm, chores, etc.)	_____
academics (classes, homework, library, etc.)	_____
socializing (dates, friends, family, etc.)	_____
computer/internet/videogames (more than 30 minute session)	_____
other _____	_____
_____	_____
_____	_____

6. During the fall of 2006, did your family have a time rule for watching television (i.e., no television past 8:00 pm)? No Yes

7. During the fall of 2006, did your family have a content rule for watching television (i.e., no television containing violence, sex, language, etc.)? No Yes

8. During the fall of 2006, did you have a television set in your own room? No Yes

9. During the fall of 2006, how many nights a week did your mother watch television between the hours of 7:00 and 10:00 pm?
   1 2 3 4 5 6 7 did not live with mother that year

10. During the fall of 2006, how many nights a week did your father watch television between the hours of 7:00 and 10:00 pm?
    1 2 3 4 5 6 7 did not live with father that year

Use the television schedule on the following page for the fall 2006 season. Next to each television program title in the schedule, indicate how much you watched it in that year using the scale below:

0	1	2	3	4	5
never heard of that program, never watched any episode	heard of it, but never watched any episode	watched only 1 or 2 episodes during the entire season	watched a few episodes, maybe 1 time a month during the season	watched semi-regularly, 2-3 times a month during the season	watched often, nearly every episode, 4 times a month during the season

The following is an example of how to fill out the television viewing report.

Monday

	7:00 PM	7:30 PM	8:00 PM	8:30 PM	9:00 PM	9:30 PM
A	Drew Carey Show	Whose Line Is It Anyway?	Monday Night Football			
C	King of Queens	Yes, Dear	Everybody Loves Raymond	Still Standing	CSI: Miami	
F	Boston Public		Girls Club			
N	Fear Factor		Third Watch		Crossing Jordan	
U	The Parkers	One on One	Girlfriends	Half & Half		
W	7th Heaven		Everwood			

Fall 2006

		7:00 PM	7:30 PM	8:00 PM	8:30 PM	9:00 PM	9:30 PM
Sunday	A	Extreme Makeover: Home Edition		Desperate Housewives		Brothers & Sisters	
	C	Amazing Race 10		Cold Case		Without a Trace	
	CW	7th Heaven		Runaway			
	F	The Simpsons	American Dad	Family Guy	The War at Home		
	N	The Outsider		Friday Night Lights		Friday Night Lights	
Monday	A	Wife Swap		The Bachelor: Rome		What About Brian	
	C	How I Met Your Mother	The Class	Two and a Half Men	New Adv. of Old Christine	CSI: Miami	
	CW	7th Heaven		Runaway			
	F	Prison Break		Justice			
	N	Deal or No Deal		Heroes		Studio 60 on the Sunset Strip	
Tuesday	A	Dancing With the Stars			Help Me Help You	Boston Legal	
	C	NCIS		The Unit		Smith	
	CW	Gilmore Girls		Veronica Mars			
	F	House		Breaking Point			
	N	Friday Night Lights		Law & Order: C.I.		Law & Order: S.V.U.	
Wednesday	A	Dancing With the Stars		Lost		The Nine	
	C	Jericho		Criminal Minds		CSI: NY	
	CW	America's Next Top Model		One Tree Hill			
	F	Bones		Bones			
	N	30 Rock	20 Good Yrs.	Biggest Loser		Kidnapped	
Thursday	A	Ugly Betty		Grey's Anatomy		Six Degrees	
	C	Survivor: Cook Islands		CSI		Shark	
	CW	Smallville		Supernatural			
	F	The Simpsons	American Dad	Family Guy	Family Guy		
	N	My Name Is Earl	The Office	Deal or No Deal		ER	
Friday	A	Grey's Anatomy		Men in Trees		20/20	
	C	Ghost Whisperer		Close to Home		NUMB3RS	
	CW	Friday Night SmackDown!					
	F	Nanny 911		Trading Spouses			
	N	1 vs 100		Las Vegas		Law & Order	
Saturday	A	Saturday Night College Football					
	C	48 Hours Mystery					
	CW						
	F	Cops		America's Most Wanted			
	N	Dateline NBC		Heroes		Law & Order: S.V.U.	

APPENDIX F

FALL 2006 PROGRAM CONTENT RECALL MEASURE

The experimenter will have selected 4 programs from the preceding television schedule. For each program write down the names of as many characters or actors you can remember and the general themes or plot lines of the show.

A. Please provide the following information for the program listed:

PROGRAM TITLE: _____

Characters/Actors remembered:

Plot elements remembered (i.e., common locations, recurring activities, & general relationships):

Is this a program you have watched in re-reruns since 2006?

No Occasionally Frequently

B. Please provide the following information for the program listed:

PROGRAM TITLE: _____

Characters/Actors remembered:

Plot elements remembered (i.e., common locations, recurring activities, & general relationships):

Is this a program you have watched in re-reruns since 2006?

No Occasionally Frequently

C. Please provide the following information for the program listed:

PROGRAM TITLE: _____

Characters/Actors remembered:

Plot elements remembered (i.e., common locations, recurring activities, & general relationships):

Is this a program you have watched in re-reruns since 2006?

No Occasionally Frequently

D. Please provide the following information for the program listed:

PROGRAM TITLE: _____

Characters/Actors remembered:

Plot elements remembered (i.e., common locations, recurring activities, & general relationships):

Is this a program you have watched in re-reruns since 2006?

No Occasionally Frequently

APPENDIX G

PERCEPTIONS OF TELEVISION SCALE

Please use the following scale for the questions below:

1	2	3	4	5
Definitely Disagree				Definitely Agree

1._____The people I see playing parts on TV are just like their characters when they are off camera in real life.
2._____The people who act in TV shows about families probably behave the same way in their real lives.
3._____The people who are funny as characters on comedy shows are probably very funny in their real lives
4._____ Zack Braff, who plays “J.D.” in the TV show Scrubs, probably acts in real life the way J.D. does on the TV show.
5._____The things that happen to Zack Braff in real life are probably the same as the things that happen to his character (J.D.) on TV.
6._____The things that happen to Jason Lee in real life are probably the same as things that happen to his character on "My Name is Earl."
7._____Jason Lee, who plays Earl on "My Name is Earl" probably acts in real life the same as Earl does on the TV show.
8._____I feel I can learn a lot about people from watching TV.
9._____I get useful ideas about how I should act around my friends and family by watching characters on situation comedies.
10._____By watching TV I feel I can learn about life's problems and situations.
11._____The characters I see on situation comedies help give me ideas about how to solve my own problems.
12._____I feel I can learn a lot about people by watching America Ferrara on the "Ugly Betty" show.
13._____I feel I can learn alot about how to solve my own problems by watching Kiefer Sutherland’s character Jack Bauer on "24"
14._____I can learn a lot about people by watching Zack Braff on the TV show "Scrubs."
15._____There are certain characters on TV shows that I admire.
16._____There are a few characters in TV shows that I would like to be more like.
17._____I know someone in real life like Jack Bauer on "24"
18._____I know someone in real life like America Ferrara’s character on "Ugly Betty."
19._____On "CSI (Crime Scene Investigation)", Catherine Willows (played by actress Marg Helgenberger) is like someone I know in real life.
20._____On the TV show "My Name is Earl", Earl acts like someone I know in my life.

APPENDIX H

IRB REVIEW FORM

Oklahoma State University Institutional Review Board

Date:	Tuesday, April 03, 2007
IRB Application No	AS0727
Proposal Title:	Young Adults' Recall of Childhood Television Viewing
Reviewed and Processed as:	Exempt

Status Recommended by Reviewer(s): Approved **Protocol Expires: 4/2/2008**

Principal Investigator(s

Richard Potts
215 N. Murray
Stillwater, OK 74078

Jeff Seger
215 North Murray
Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,

Sue C. Jacobs, Chair
Institutional Review Board

VITA

Jeffrey Lane Seger

Candidate for the Degree of

Master of Science

Thesis: ADULT RECALL OF CHILDHOOD AND ADOLESCENT TELEVISION VIEWING

Major Field: Psychology

Biographical:

Personal Data: Born in Bartlesville, Oklahoma, on March 27, 1981, the son of Steven and Retta Seger.

Education: Graduated from Bartlesville High School, Bartlesville, Oklahoma, in May 1999; received Bachelor of Science degree in Psychology from Oklahoma State University, Stillwater, Oklahoma, in May 2003. Completed the requirements for the Master of Science degree in psychology at Oklahoma State University, Stillwater, Oklahoma, in December, 2007.

Professional Memberships: The Honor Society of Phi Kappa Phi, Psi Chi – National Honor Society in Psychology, National Society of Collegiate Scholars, Phi Eta Sigma Honor Society, Golden Key International Honor Society.

Name: Jeffrey Lane Seger Date of Degree: December, 2007

Institution: Oklahoma State University Location: Stillwater, Oklahoma

Title of Study: ADULT RECALL OF CHILDHOOD AND ADOLESCENT TELEVISION VIEWING

Pages in Study: 107 Candidate for the Degree of Master of Science

Major Field: Psychology

Scope and Method of Study: The current study assessed young adults' retrospective reports of their childhood and adolescent television viewing patterns. Primetime network television program schedules from the years 1996, 2001, and 2006 were presented to participants who indicated how often they watched each program. Validity of the reports was assessed, in part, by examination of the logical consistency in the reported patterns, and also by measuring participants' recall of content from programs they reported to have watched often, occasionally or never. Validity was also assessed by examination of an activities checklist designed to identify any other activities that participants might have been engaged in other than television viewing during the primetime broadcast hours, as well as family time and content rules which may have limited primetime television viewing.

Findings and Conclusions: As predicted, participants reported ecologically-valid patterns of TV viewing. Furthermore, in the two earliest years participants who reported a time-limiting family rule had lower overall television viewing scores than participants who did not report a time-limiting family rule. Participants also recalled more content from frequently-viewed programs than from ones viewed less frequently. Accuracy of recalled content was very high. Discussion includes implications of a retrospective measure of early TV viewing for research on relationships between early media exposure and later psychological characteristics.

ADVISER'S APPROVAL: Dr. Richard Potts