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# Counting or Discounting Television Information: An Examination of Viewer Perceptions About Old- Age From a Cognitive Processing Perspective of Cultivation Effects

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Counting or Discounting Television Information:  
An Examination of Viewer Perceptions About Old-Age From a Cognitive Processing  
Perspective of Cultivation Effects

by

Lynda Pasteur

A thesis submitted in partial fulfillment  
of the requirements for the degree of  
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COUNTING OR DISCOUNTING TELEVISION INFORMATION:  
AN EXAMINATION OF VIEWER PERCEPTIONS OF OLD-AGE FROM A  
COGNITIVE PROCESSING PERSPECTIVE OF CULTIVATION EFFECTS

Lynda Pasteur

ABSTRACT

Cultivation theory (Gerbner & Gross, 1976) suggests that the cumulative effect of heavy exposure to television's underrepresentation and negative portrayal of people 65+ as sexless, insignificant, and comical can cause people to assume such television-like perceptions of the age group in the real world. This study's purpose was to explore not only television's cultivation effect on viewers' perceptions of the number and nature of people 65+, but also the psychological processes that are expected to mediate this effect. As an extension of Shrum, Wyer, and O'Guinn's (1998) study on the role of source discounting in cultivation, this quasi-experiment employed three experimental conditions—no-priming, source-priming, and relation-priming—to manipulate participants' awareness of television as the source of the information they retrieve to make judgments about people 65+. The experimental conditions were expected to moderate the cultivation effect like they did in Shrum, Wyer, and O'Guinn's (1998) study; in the no-priming condition, but not in the source-priming or relation-priming conditions, heavy viewers were to report more television-like perceptions of people 65+ than light viewers. The results of this study revealed six major findings: first, heavy

television viewing does not cultivate viewers to underestimate the 65+ population in the U.S.; second, heavy television viewing cultivates viewers to perceive people 65+ as sexless (specifically, “not sexually attractive” and “not sexually passionate”) and comical (specifically, “unintentionally funny”); third, priming is not necessary to induce source discounting of television information for judgment-making about the number and nature of the elderly in the real world; fourth, whether people are prompted to recognize television as an information source, they will discount television information when making judgments about the number of people 65+, and they will count television information when making judgments about the nature of people 65+; fifth, high perceived reality of television encourages heavy viewers to perceive people 65+ as “comical”; sixth, high direct experience with people 65+ discourages heavy viewers to perceive people 65+ as “insignificant in society.”



## INTRODUCTION

America's baby boomers, those born between 1946 and 1965, are growing older, and the average age of a United States resident is aging with them. According to U.S. Census Bureau (2004) interim predictions, 86.7 million U.S. residents will be age 65 and older (65+) by the year 2050, accounting for 20.7% of the total population. In fact, the bureau estimates that between 2000 and 2050, the number of U.S. residents age 65 to 84 will increase by 113% while the number of residents age 85 and older will rise by 388%.

In light of this imminent demographic shift in the U.S. population, scholarly research dedicated to the effects of the mass media's portrayal of people 65 and older is both timely and essential. Research of old-age portrayals on television, in particular, is warranted for three reasons. First, Americans watch a lot of television. Despite the increasing popularity of streaming video through new media such as the Internet, cell phones, and MP3 players, average television viewing time continues to rise. According to Nielsen Media Research (2006), the 2005-2006 television year boasted a record-high average of eight hours and 14 minutes per day for total household television viewing; the average amount of television watched by an individual reached a record high of four hours and 35 minutes per day, which amounts to about 32 hours of television viewing per week. Nielsen Media Research (2007) also estimates that the total number of households in the United States owning at least one television set will grow from 111.4 million in 2008 to 163.7 million in 2050, amounting to a 47% increase.

Second, television has a well-documented reputation for negatively stereotyping people 65 and older and underrepresenting the age group (Davis & Kubey, 1982; Harris, 2004; Signorielli, 1985). Since the early 1970s, researchers from various disciplines—sociology, gerontology, psychology, and mass communication—have used content analysis to identify common themes in television’s depiction of people 65+ that cut across multiple television program genres as well as television commercials. The studies reveal that television portrays people age 65+ both negatively (Aronoff, 1974; Peterson & Ross, 1997) and positively (Miller, Leyell, & Mazachek, 2004; Roy & Harwood, 1997) in terms of their physical appearance, health, intelligence, and overall personality. However, television negatively portrays the age group in three consistent ways: people 65 and older are sexless, insignificant, and comical (Cassata & Irwin, 1997; Greenberg, Graef, Fernandez-Collado, Korzenny, & Atkin, 1980; Harwood & Giles, 1992). In terms of demographic representation, nearly all of the research conducted on the relative percentage of age 65+ television characters reveals that they are underrepresented in relation to their true percentage in the total population (Gerbner, Gross, Signorielli, & Morgan, 1980; Signorielli, 2004).

The third rationale for studying old-age depictions on television relates to the medium’s potential power for socialization. Gerbner and Gross (1976) posited that a process called *cultivation* molds television viewers’ understanding of the world. The cumulative effects of heavy viewing make them believe that the real world, often termed *social reality*, is actually identical to the world they see on the television screen. Hence, heavy exposure to underrepresentations and negative portrayals of people 65 and older on television could affect people’s judgments about the demographic set size and trait

characteristics of the age group. In other words, television could be molding viewer's perceptions about the number and nature of people age 65+.

However, cultivation theory has been heavily criticized, and it remains a topic of debate in media effects circles to this day. One major criticism is that the theory fails to account for the mediating processes that take place between television viewing and subsequent judgment-making about social reality. To counter this argument, cultivation process models have evolved. The earliest models proposed that cultivation occurs in four stages; *learning* from television yields *construction* of conceptions about social reality, fostering *first-order beliefs* that eventually lead to generalized *second-order attitudes* (Gerbner, Gross, Morgan, & Signorielli, 1980; Hawkins, Pingree, & Adler, 1987). Although the linearity of this process-oriented model of cultivation was not supported by the research, results did demonstrate that second-order attitudes do not stem from first-order beliefs, and the two should be tested independently.

The accessibility model of first-order cultivation effects (Shrum, 1999b; 2002) emerged from the learning theory of cultivation. Suggesting that people typically rely on heuristic, or unlabored, processing strategies when making decisions about social reality, Shrum's model is based theoretically on two highly supported principles of social cognition research, the *availability heuristic* (Tversky & Kahneman, 1973) and *construct accessibility* (Wyer & Srull, 1986). Tversky and Kahneman's availability heuristic proposes that when individuals make judgments about the probability or the frequency of some object or occurrence in nature, they assign higher frequency estimates to those things that come to mind with the greatest ease. Construct accessibility conceptualizes an individual's long-term memory as an assortment of mental storage bins; when an

informed decision needs to be made, people search the appropriate bin by starting from the top and moving down so that the most recent information is what is called upon (Wyer & Srull, 1986).

The availability heuristic and construct accessibility are the basis for the first two of Shrum's five propositions in the accessibility model of cultivation, which include: 1) television viewing influences accessibility, 2) accessibility mediates the cultivation effect, 3) television exemplars are not discounted, 4) motivation to process information moderates the cultivation effect, and 5) ability to process information moderates the cultivation effect (Shrum, 2002, pp. 80-85). The model posits that if people are motivated and able to process a message, they will engage in systematic processing (central, high-involvement) and discount the television source such that no cultivation effect occurs. However, when either motivation or ability is absent, people will engage in heuristic processing (peripheral, low-involvement) of a message, and the presence or absence of source-priming will determine whether the information source (i.e., television) is discounted.

If, as cultivation theory suggests, portrayals of people 65 and older on television can ultimately manipulate viewers' beliefs about the age group, it will be imperative to validate the psychological processes that are expected to mediate this effect. The current study will explore television's cultivation of perceptions about people 65+ by testing the third cognitive subprocess proposed by Shrum's accessibility model of cultivation effects, source discounting (Shrum, 2002).

As an extension of Shrum, Wyer, and O'Guinn's (1998) study on the role of source discounting in cultivation, this study will employ an experiment involving three

priming conditions—no-priming, source-priming, and relation-priming—to determine the effects of both television viewing and priming conditions on first-order social reality perceptions about the number and nature of people 65+. It is hypothesized that the findings of this study will be concurrent with those of Shrum et al. (1998). Priming conditions are expected to moderate the cultivation effect such that heavy television viewers will report more television-like perceptions of people age 65+ than light television viewers under no-priming conditions but not under source-priming or relation-priming conditions.

Since it is also important to recognize that not all television viewers believe that the medium offers them an accurate depiction of reality (Hawkins, 1977; Potter, 1986), this study predicted that perceived reality of television content would influence the cultivation effect. Real life direct experience with people age 65+ was also expected to influence participants' perceptions of the number and nature of the age group.

## LITERATURE REVIEW

### Old-Age Stereotypes

Seminal studies on stereotyping of particular population groups reveal that next to gender-based prejudice, ageism is one of the most ubiquitous forms of discrimination in America. In fact, one important study by Kite, Deaux, and Miele (1991), which sought to understand the interrelationship of stereotypes attached to the two general categories of age and gender, claimed that age stereotyping is extensively widespread. Despite the fact that so much research has been conducted to recognize and interpret gender stereotypes, the results of Kite et al.'s (1991) study suggest that age stereotypes are even more prominent in American culture.

In reference to the 65+ population, Kite Deaux, and Miele (1991) asserted that “there is general agreement that the stereotype is multidimensional and includes characteristics such as ill, tired, grouchy, unlikely to participate in activities, unhappy, undesirable for company, and physically unattractive” (p. 20). This notion was one of the many phenomena their study intended to test. The sample consisted of college students (n=98) and members of a senior community (n=100), and the study examined both group's beliefs about 35-year-old men and women as well as 65-year-old men and women. Results of the study suggested that when considering traits, role behaviors, and

physical characteristics, the 65-year-old targets of both genders were consistently perceived more negatively than the 35-year-old male and female targets.

Providing evidence for the existence of negative perceptions of old-age among America's youth, the younger subjects had less favorable perceptions of the 65-year-old targets compared to observations of the older subjects; the 35-year-old targets were rated similarly by both the younger and older research participants. Another notable finding was that although the college-aged subjects were prone to negative perceptions of the 65-year-old targets, the subjects from the senior community "did not reverse this trend" by rating the 35-year-old targets less favorably than the 65-year-old targets, who more closely matched their age (Kite, Deaux, & Miele, 1991, p. 25).

Another influential study on stereotyping of people 65 and older conducted by Hummert, Garstka, Shaner, and Strahm (1994) examined perceptions of the age group across young, middle-aged, and elderly adults in a two-part study. Part one sought to gather a more comprehensive trait list for older adults. Since the extensive list of 99 positive and negative traits of old-age compiled by Schmidt and Boland (1986) was only representative of young adult perceptions, Hummert et al. (1994) looked to the middle-aged and elderly participants in their study to identify additional traits of seniors. In part two, the young, middle-aged, and elderly participants were asked to organize the people 65+ traits list that they had compiled in the first part of the study, ranking the traits according to their assessments of how well each one described the age group.

Results of the study supported Hummert, Garstka, Shaner, and Strahm's (1994) hypothesis that complexity of old-age perceptions increases with age. The middle-aged group of participants could account for far fewer older adult stereotypes than the elderly

group. Similarly, the middle-aged group had a more complex view of older adult stereotypes than did the young participant group, who came up with the least amount of older adult stereotypes. Significant correlations among perceived older adult stereotypes among the three age groups' trait lists revealed seven stereotypes of people 65 and older: Perfect Grandparent, Golden Ager, John Wayne Conservative, Severely Impaired, Shrew/Curmudgeon, Despondent, and Recluse.

It is important to note that the studies conducted by Kite, Deaux, and Miele (1991) and Hummert, Garstka, Shaner, and Strahm (1994) uncovered both positive and negative stereotypes of people 65 and older. "Although the elderly are thought to be grouchy, critical, miserly, and hard of hearing,... they are also viewed as likable, intelligent, and experienced" (Kite et al., 1991, p. 25). Therefore, it is hasty to assume that all stereotypes of people 65 and older are adverse; sometimes, albeit less often, older individuals are viewed in a favorable light (Kite et al., 1991).

#### Television's Depiction of People 65+

Over the past fifty years, numerous research studies have used content analysis to determine whether television paints a favorable or unfavorable picture of people 65 and older. Like the research on old-age stereotyping, research conducted to determine television's depiction of the age group has yielded mixed results; television's age 65+ characters are portrayed both positively and negatively in terms of their physical appearance, health, intelligence, and overall personality.

Two of the first and most cited scholars in research on television's depiction of people 65 and older reported very different results. The first scholar, Petersen (1973),



sampled 30 half-hour time slots from prime-time commercial television broadcast in 1972 on the three major networks. Image of people age 65+ was operationalized as the sum of rating scores on a checklist of 21 pairs of attributes (e.g., “friendly/unfriendly”; “liked/disliked”; “strong/weak”), and the attributes were rated by each investigator on a seven-point scale (p. 572). The middle position was considered “neutral,” and the three positions on each side were collapsed to be considered “favorable” and “unfavorable.” Although Petersen expected to find that old people had an unfavorable image on television, her results were quite the opposite; only 18.2% of the summed attribute ratings were classified as unfavorable. A total of 58.7% were favorable, and 23.1% were neutral. What’s more, 92.9% of the age 65+ characters analyzed were described as “active,” and 82.1% were in “good health” as well as “independent” (p. 573).

The other research scholar, Aronoff (1974), studied network prime-time dramatic programming from 1969 to 1971. In stark contrast to Petersen’s (1973) findings, his results showed that television portrayed the elderly in a mostly negative manner. In fact, the elderly were more likely than characters of any other social age category (child-adolescent, young adult, settled adult, and elderly) to be featured as one of the “bad guys” and to be portrayed as failures (p. 86).

In a prominent study that followed the seminal work of Petersen (1973) and Aronoff (1974), Harris and Feinberg (1977) analyzed samples of television dramas, comedies, game shows, news programs, and commercials broadcast on the three major networks in 1976. The research team found that on the television programs as well as commercials, health problems increased and physical activity decreased with age. Twenty-five percent of the age 60 to 70 characters on the television programs were

depicted as being in poor health. In the commercials, 35% of the characters in the 60 to 70 age group had health problems. The research team concluded the following:

“Although it is true that in real life the incidence of health problems is higher among older age groups, it is nonetheless noteworthy that television has chosen to dramatize subject matter where old people fail (health) rather than subject matter where they are successful...” (p. 466).

Sampling dramatic television programming broadcast over an eight-year period, between 1969 and 1976, Signorielli and Gerbner (1978) analyzed prime-time and weekend daytime network television. The research team posited that in terms of their attractiveness, rationality, efficiency, and happiness, the elderly were portrayed less positively than young and middle-aged adults.

In 1980, Gerbner, Gross, Signorielli, and Morgan studied an ever larger sample of prime-time and weekend daytime television dramas. The ten-year sample was drawn from network programming broadcast from 1969 to 1978. Like Aronoff (1974), the researchers found that older characters were often depicted as “bad guys” and were relatively less successful when compared to their younger counterparts. Additionally, about two-thirds of the elderly television characters in the sample were disrespected by others, and the age group was portrayed as eccentric and foolish. Gerbner et al. (1980) concluded, “In every case, heavier viewing makes a consistently negative contribution to the public’s image of the personal characteristics of the elderly, and the quality of their lives. We did not find watching television to be associated with any positive images of older people” (p. 47).

Nevertheless, Greenberg (1980) came up with contradictory results when studying television programming broadcast from 1975 to 1977. Unlike examinations of television programming broadcast during similar time periods (Gerbner, Gross, Signorielli, & Morgan, 1980; Harris & Feinberg, 1977; Signorielli & Gerbner, 1978), Greenberg's content analysis posited that people 50 and older were depicted in a primarily positive fashion. Specifically, the research team studied the positive social behavior of altruism, or unselfishness, and found that people 50 and older both performed and received acts of humanity at comparable levels to the other age categories.

Cassata, Anderson, and Skill (1983) also found mostly positive portrayals of age 55+ characters when they analyzed a sample of daytime network serial dramas broadcast in 1978. Their results suggested that out of the older characters, age 55+, observed in the sample, 92.9% were portrayed as healthy and over 98% had a "pleasant" physical appearance and demeanor (p. 40). In addition, Cassata et al. (1983) executed a personality assessment of the 58 characters age 55+ in much the same way as Petersen (1973). Fifteen attributes of opposing positive and negative polarity were presented on a five-point scale where the middle response was considered "neutral," and the two positions on each side were collapsed to be considered "favorable" and "unfavorable." While 18.2% of the summed attribute ratings in Petersen's (1973) study were classified as unfavorable, even fewer, less than 9%, were unfavorable in Cassata et al.'s (1983) study. Additionally, 51.7% of the older characters were placed in the wealthy or upper middle class socioeconomic categories, and 87% of them were judged to be "friendly" (p. 42).

In an analysis of Saturday morning cartoons, Bishop and Krause (1984) sampled 24 hours of programming broadcast on network television during 1981. When comparing young, adult, and old characters, the research team concluded that on cartoon programming, “old” characters were most likely to be portrayed as unhealthy, unattractive, and bad. The researchers noted that “it is striking that, when age was mentioned in these cartoons, the remarks were nearly always negative and easily classified into the stereotypes so frequently found in attitudinal research on aging” (p. 93).

Over a decade later, a study conducted by Peterson and Ross (1997) also examined the level of favorability of television characters in three age ranges, but the sample consisted of 1,437 television commercials broadcast on the three major networks, one local station, and five cable companies in 1991. The study analyzed not only age 65 and older characters, but also age 45 to 64 characters and characters age 44 and younger. The research pair discovered that the proportion, 46%, of characters age 65+ who made undesirable appearances in television ads was a great deal higher than that of the age 45 to 64 category, 34%, and the age 44 and younger category, about 17%.

The results of Peterson and Ross’ (1997) study suggested that the oldest characters on television commercials are indeed the most negatively portrayed. Conversely, two studies published in the same year described the nature of old-age portrayals in television commercials as relatively positive. A total of 778 commercials were sampled by Roy and Harwood (1997) from a 30-hour block of television programming broadcast on the three major networks in 1994. One hundred and forty-two of the commercials were discarded because they did not feature people, and the human

characters in the remaining 636 commercials were analyzed. Roy and Harwood's results suggested that the commercials in their sample featured older adult characters as strong (96.9%), active (100%), happy (93.7%), and lucid (100%).

The other 1997 study of television commercials, conducted by Hajjar, sampled just over 61 hours of daytime television broadcast in 1995. Elderly characters, those assumed to be over 60 years old, were classified as being depicted favorably or unfavorably according to the presence of one of more positive ("good," "friendly," "credible," etc.) or negative ("inactive," "unattractive," "dependent," etc.) personality attributes (p. 238). If a character was not obviously portrayed as favorable or unfavorable, he or she was labeled neutral. Hajjar's results showed that the sampled commercials exhibited more favorable (48%) than unfavorable (8%) depictions of old-age.

A recent content analysis of 50 years of television commercials found the elderly to be generally portrayed in desirable ways. Miller, Leyell, and Mazachek (2004) studied commercials from the 1950s to the 1990s to discover whether American advertisements negatively stereotype older persons, as many scholars have argued. After obtaining a convenience sample of 1,662 commercials from multiple databases containing television advertisements from portions of time within the five decades to be studied, the research team coded 69 commercials portraying a total of 101 elderly people. Miller et al. (2004) categorized each older individual by age-group, "young-elderly" (age 60 to 74) or "old-elderly" (age 75+), and then identified seven stereotype clusters reminiscent of the Hummert, Garstka, Shaner, and Strahm's (1994) classifications, including: "Productive Golden Ager," "Adventurous Golden Ager," "Perfect Grandparent," "John Wayne

Conservative,” “Despondent,” “Shrew/Curmudgeon,” and “Mildly Impaired” (pp. 325-326).

Of the aforementioned stereotypes, both positive and negative in nature, the favorable Adventurous Golden Ager was found to be the most common. In fact, Miller, Leyell, and Mazachek (2004) posited that 78.2% of the 101 elderly people in their sample of television commercials were portrayed as one of the positive stereotypes (Perfect Grandparent, John Wayne Conservative, Adventurous Golden Ager, or Productive Golden Ager) while only 11.9% were portrayed as one of the negative stereotypes (Despondent, Mildly Impaired, or Shrew/Curmudgeon).

Even more recently, Robinson and Anderson (2006) sampled 45 hours of animated children’s programming from five network and cable stations, including 121 different episodes of 41 different programs. The study analyzed a total of 82 older characters, age 55+, and found that 59% of them had positive personality traits and 41% had negative personality traits. However, the four most commonly portrayed traits included both positive and negative attributes. At 37%, the most common trait was intelligent, followed by angry (28%), happy (27%), and senile/crazy (22%).

#### *People 65+ as Sexless*

Clearly, both positive and negative depictions of age 65+ people’s physical appearance, health, intelligence, and overall personality are present on television. However, research studies have consistently found that the medium portrays the age group as essentially void of positive romantic involvement and basically sexless.

In Harris and Feinberg's (1977) analysis of television programming, the research team placed all of the characters in the sample into age groups and rated each character's romantic involvement. They reported that the age distribution of the positive romantic involvement observed in the study was very heavily skewed towards the younger age groups; characters under age 30 accounted for 84% of all of the positive love relationships. On the other hand, characters over age 60 were not shown having any positive romantic involvement at all. Even when individuals in this age category were shown in the context of marriage, the relationship was never portrayed as sexually active and there were no elements of love to speak of.

Signorielli and Gerbner (1978) as well as Signorielli (1983) reported results similar to Harris and Feinberg's. In Signorielli's (1983) sample of prime-time dramatic programming broadcast between 1969 and 1981, older characters, especially women, were found to be significantly less likely to engage in romantic relationships. In fact, while 60% of young women and 50% of middle-aged women were depicted as romantically involved, only 9% of older women were portrayed as such. Likewise, Signorielli and Gerbner (1978) reported that in their sample of dramatic television programming, there were almost no depictions of elderly characters being romantically involved.

Greenberg, Graef, Fernandez-Collado, Korzenny, and Atkin (1980) sampled two weeks of prime-time programs broadcast in 1977 and 1978 and analyzed television characters in terms of whether they were initiators of intimate sexual references, targets of intimate sexual references, both, or neither. A total of 156 initiators of intimate sexual references and 146 targets of those references were observed. Only 15% of the initiators

and targets were characters age 50 to 64, and characters age 65+ were never the initiator or target of any intimate sexual references.

Research shows that not only positive romantic involvement and sex, but also displays of affection are lacking in television's characterizations of people 65 and older. Greenberg, Edison, Korzenny, Fernandez-Collado, and Atkin (1980) sampled over 3,549 characters in prime time and Saturday morning programs between 1975 and 1977. The research team discovered that characters between age 20 and 34 were the most likely to show signs of affection, while increasing age equaled decreasing affectionate displays.

#### *People 65+ as Insignificant*

In much the same way that research studies have found sexless portrayals of people 65 and older on television, time and again they have supported the notion that television depicts people 65+ as shallow characters who play trivial roles in social society.

Northcott (1975) sampled 41 prime time dramatic television shows, 35 total hours of programming, broadcast on the three major networks in 1974 and examined age-related differences between the "major" and "minor" characters. Characters playing major roles were central to the program's plot and appeared frequently throughout the show. Minor characters were not essential to the plot, and they existed only to support the storyline being played out by the major characters. Only 28.6% of age 64+ characters in Northcott's sample played major roles. What's more, the results suggested that when older people did appear in the programs, they were typically featured as dependents on younger people, who were portrayed as more capable and good-looking than their elders.



Northcott concluded that television positioned members of the age 64+ population in stark contrast to competent adult males and attractive, youthful adult females.

Harris and Feinberg's (1977) analysis of television programming suggested that characters age 60+ on television seriously lack depth; they have a relatively shallow range of emotions compared to characters in younger age categories. Hence, the researchers posited that television tends to highlight old people's surface-level flaws instead of presenting them as deeply emotional or full of knowledge from experience. Harris and Feinberg concluded that television programming presents a "remarkably one-dimensional" portrait of the elderly, characterizing them as useless and generally incompetent (p. 467).

Hiemstra, Goodman, Middlemiss, Vosco, and Zeigler (1983) examined a total of 136 television commercials broadcast during weekdays, weekends, and evenings in 1981 and studied how the older characters, age 50+, were portrayed in terms of family relationships. Despite the fact that most older people have children, grandchildren, and perhaps even great-grandchildren, and they are thus members of a family in some manner, the research team discovered that people 50 and older were usually depicted as "nondescript adults with no observable family ties" (p. 117).

Perhaps the reason that research shows television only shallowly depicts people 65 and older is that the medium almost always casts the age group in minor, not major, roles. In a study published in 1987, Swayne and Greco analyzed a total of 814 television commercials taken from 36 hours of network television programming broadcast in 1985. Examining the level of involvement of characters age 65+ in the commercials, the researchers classified each one as a "major," "minor," or "background" character. Major

roles were assigned to age 65+ characters who spoke on-camera and were visible throughout the duration of the ad. Minor characters did not speak on-camera and were only visible during half of the ad while background characters did not speak and only made a brief appearance in the ad. The data revealed that only 31.6% of people 65 and older in the sampled commercials played major roles; well over half, 56%, played minor roles.

Eight years later, Robinson and Skill (1995) studied television programming and found similar results in terms of the prominence of age 65+ role-portrayals. From 181.5 hours of network programming comprising 260 fictional series episodes broadcast in 1990, the researchers randomly sampled 100 episodes comprising 67.5 hours of programming for analysis. Using the same rules for classifying major and minor roles as Northcott (1975), Robinson and Skill performed their content analysis under the assumption that the proportion of age 65+ characters cast in major roles in their 1990 sample would be greater than the proportion found in Northcott's 1974 sample. However, the results revealed that the opposite was true; there was a drastic decrease in the amount of television program characters age 65+ cast in major roles from 28.6% in Northcott's study to only 2.8% in Robinson and Skill's study.

Another research study on the role-portrayals of people 65 and older on television, conducted by Cassata and Irwin (1997), also suggested that the number of age 65+ characters cast in major roles on television is seriously dwindling. In Cassata and Irwin's 45-hour sample of network daytime programming broadcast in 1994, only one percent of all the characters who played major roles were age 65 and older. The

researchers concluded with the following statement about the substance and depth of old-age characterizations on daytime television:

In conclusion, whereas the overall profile of the older character on soap operas is positive, it is important to note that our study revealed that a larger proportion of older characters are minor characters, that is, characters whose absence would not be detrimental to the storylines. If one considers the role that these portrayals may play in cultivating viewers attitudes, then one would expect that viewers would have a positive impression of older people but, at the same time, might question their significance in our lives (p. 229).

### *People 65+ as Comical*

As well as being consistently portrayed as sexless and insignificant, television's characters age 65+ are habitually featured as amusing characters. When television features characters 65 and older in any kind of real depth, it casts them in comical roles on both programming (Gerbner, Gross, Signorielli, & Morgan, 1980; Signorielli, 1983; Signorielli & Gerbner, 1978) and commercials (Francher, 1973). The older characters do not intend to be funny; rather, they are a subject of amusement because of their irrational and eccentric behavior.

Bell (1992) examined five prime time network television dramas that did feature elderly characters in major roles, including: *Murder, She Wrote*; *Matlock*; *Jake and the Fat Man*; *In the Heat of the Night*; and *The Golden Girls*. Bell posited that these shows, as part of a "golden age" of television programming broadcast in the mid- to late-eighties and early nineties, portrayed elderly characters in a richer, more respected light (p. 306). But many scholars (Gerbner, 1997; Harwood, 2000; Harwood & Giles, 1992; Kubey, 1980) argued that television shows like the *The Golden Girls* put elderly characters in the

spotlight only to mock and deride them for engaging in behaviors considered to be uncharacteristic of the age group.

Kubey (1980) was one of the first research scholars to propose that by placing members of social groups, including people 65 and older, in situations that are seemingly atypical, television shows could be using humor to propagate certain social stereotypes of those groups. In other words, Kubey posited that comical depictions of social groups do not counter negative social labels, but they serve to make those labels even stronger. Hence, reverse stereotyping of people 65 and older on television (e.g., showing an elderly woman getting her legs waxed or an elderly couple skydiving), which is intended to be funny, reinforces typecasting of the age group as being unconcerned about their physical appearance and unwilling to engage in wild, risky conduct.

Following Kubey's (1980) seminal work, Harwood and Giles (1992) examined humor in the television show *The Golden Girls*, arguing that in terms of television's role in bolstering social stereotypes, "the greatest threat to prosocial outcomes lies in the discounting of 'counter-stereotypical' messages that is facilitated by humor" (p. 415). *The Golden Girls* was a half-hour sitcom that featured four elderly women living in Florida: Dorothy, Rose, Blanche (all age 55-65), and Sophia, a woman in her mid-eighties (Harwood & Giles, p. 405).

Harwood and Giles randomly sampled six episodes of *The Golden Girls* that aired during the 1990-1991 season of the show and analyzed the character-based humor that each of the four elderly women brought to the show. In their analysis, none of the characters were portrayed more counter-stereotypically than Blanche, a man-hunter who appeared to be as sexually active in her later years as she was when she was a young

adult, if not more so. Unabashed by erotic innuendos and overt promiscuity, Blanche reveled in her sexuality. The research team suggested that a cursory glance at Blanche's character might offer a refreshing depiction of people 65 and older. However, the comical nature of the show's references to Blanche's sex life, which were explicitly intended to be amusing to both the other characters on the show and the audience, only accentuates the humor of "such an extreme portrayal of hypersexuality" in a character age 65+ (p. 423). Reverse stereotyping Blanche as a sex addict is supposed to be hilarious. Thus, this further perpetuates the first of the three negative ways that television consistently portrays people 65 and older, as sexless beings void of romantic involvement.

#### Television's Demographic Representation of People 65+

Scholarly research provides conflicting reports of how television depicts people 65 and older in terms of their physical appearance, health, intelligence, and overall personality; however, there is a consensus that television not only negatively portrays people 65+ as sexless, insignificant, and comical, but also that the medium grossly underrepresents the age group in comparison with its stake in the total population.

Gerbner (1972) was one of the first to look at the demographic representation of old-age on television. He studied prime time and weekend daytime network programming broadcast in 1967-1969 and found that the typical television character was male, American, middle or upper class, unmarried, and in the prime of his life. Thus, Gerbner reported that there was an obvious absence of both the young and the old on television. Children, adolescents, and old people combined only made up about 10% of the total 762 major characters analyzed in his sample.

Aronoff (1974), who analyzed 2,741 major characters of prime time network television drama broadcast between 1969 and 1971, found that less than five percent of the characters were elderly. Similarly, Northcott's (1975) sample of 41 prime time network dramatic television programming broadcast in 1974 contained a total of 464 major and minor characters, but only seven were age 64+. This amounts to 1.5% of the total population of characters analyzed, despite the fact that, according to Northcott, the U.S. Census Bureau's estimate for this age group was 10% at the time of the study.

From their sample of randomly selected drama, comedy, game shows, and news programs aired in 1976, Harris and Feinberg (1977) discovered that out of the 312 speaking television characters observed in the study, only 24 were members of the 60- to 70-year-old age group, and only two were classified as 70+; nearly 8% of the characters were 60 to 70, and less than 1% were over 70. In the research team's random sample of television commercials, an additional 198 characters were evaluated; 10.6% was 60 and older.

Signorielli and Gerbner's (1978) sample of prime time and weekend daytime network television programming aired between 1969 and 1976 also showed a dramatic underrepresentation of older people. The researchers analyzed a total of 9,131 characters, 1,898 major characters and 7,233 minor characters, and found that only four percent could be classified as elderly.

Greenberg, Korzenny, and Atkin (1980) analyzed a sample of television programming from a three-year time period, 1975 through 1977, and found that people 65 and older were sparsely represented on the small screen. Only about 100 characters, out of 3,549 analyzed over the entire three year study belonged to the over-65 age

bracket, More specifically, characters over age 65 made up only 4% of the 1975-1976 sample, 3% of the 1976-1977 sample, and 2% of the 1977-1978 sample. Adults of retirement age were greatly underrepresented, and there was an overrepresentation of people in their 20s, 30s, and 40s; these characters accounted for two-thirds of the sample even though they only made up one-third of the U.S. population at the time, according to Greenberg, Korzenny, and Atkin.

Gerbner, Gross, Signorielli, and Morgan's (1980) extensive study, which analyzed a total of 16,688 characters on 1,365 television programs from 1969 to 1978, also found seniors to be severely underrepresented. In fact, both the younger and older age groups were underrepresented in the research team's sample. Individuals under the age of 18 comprised only 8% of the sample's characters, even though they made up about 30% of the U.S. population at that time; only 2.3% of the sample characters were over 65, despite the fact that they represented 11% of the population at that time, according to Gerbner, Gross, Signorielli, and Morgan.

Gerbner and Signorielli (1982) sampled a total of 878 prime-time network programs broadcast from 1969 to 1981 and also found that the very young as well as the very old were underrepresented on television. Characters over 65 made up only two percent of the 14,037 major and minor characters analyzed, even though the age group made up 11% of the U.S. population at that time, according to Gerbner and Signorielli.

In Hiemstra, Goodman, Middlemiss, Vosco, and Zeigler's (1983) sample of 136 commercials broadcast in 1981, only 3% of the characters were 60 and older.

Likewise, in their analysis of Saturday morning cartoons broadcast on network television during 1981, Bishop and Krause (1984) studied a total of 378 characters of varying age and found that only 25 characters, or 7%, could be categorized as old people.

Elliott (1984) examined 20 consecutive weeks of 13 daytime television serial dramas aired in 1979, monitoring the presence of 65+ characters on a total of 260 episodes. The total number of characters analyzed in the study was 723, but only 46 of them were classified as members of the age 60 to 69 group, and 12 fell into the age 70+ category. Hence, Elliott's study revealed that 6.4% of the characters in her sample were between 60 and 69 while 1.6% were 70+, equaling a sum of 8% for characters 60+.

Swayne and Greco's (1987) wide-ranging content analysis of 814 commercials provided insight into the underrepresentation of older individuals in television advertising. Since the exact age of any of the individuals in television advertisements could not be determined, the research team created a framework for defining persons age 65 and older, which many research scholars modeled thereafter. Certain age-specific criteria were used, including: appearance of retirement, extensive grey hair and wrinkles of the skin around the eyes and/or hands, use of ambulatory aids such as canes or wheelchairs, parent of a son or daughter who was middle-aged or older, and evidence of grandchildren or great-grandchildren. Using the presence of one or more of these as a means for considering a person to be elderly, Swayne and Greco's results revealed that no more than 7.1% of ads on any of the three networks depicted elderly people, even though that age category represented 12% of the U.S. population at that time, according to the research team.



Robinson and Skill (1995), who studied television programs aired in 1990, monitored the ages of 1,228 adult speaking characters and found that people 65 and older made up only 2.8% of the sample. Perhaps more interesting is that Robinson and Skill noted a decrease in the percentage of characters over 65 reported by Greenberg, Korzenny, and Atkin (1980), 4.5% in programming broadcast from 1975, and the matching percentage found in their study, only 2.8% in programming broadcast in 1990. The percentage of characters 50-64 also decreased from 19% in 1975 (Greenberg, Korzenny, & Atkin) to 16.3% in 1990 (Robinson and Skill). These findings are especially interesting in light of the fact that in the national demographic population, the percentage of people 50+ increased, not decreased, between 1975 and 1990.

Two 1997 studies found that older adults age 60+ were not present in realistic numbers on both television commercials and programming in the mid-nineties. Sampling 778 television commercials aired in 1994, Roy and Harwood (1997) found that adults age 60 and older were not present in realistic numbers. According to the research team, the U.S. Census Bureau estimate for the percentage of the population age 60+ in 1994 was 16.74%. However, adults 60 and older only made up 6.9% of the characters in Roy and Harwood's data set; 246 out of the total 3,547 characters analyzed were 60+. Similarly, in Hajjar's (1997) sample of television programming broadcast in 1995, only 355 out of the total 4,617 characters observed, or nearly 8%, were over 60.

Two other 1997 studies found similar results for the 65+ age category. Positing that underrepresentation of old-age in television advertising truly does exist, Peterson and Ross (1997) discovered that individuals age 65 and older only made up a little over 8% of the population of the sample advertisements in their study. Cassata and Irwin's (1997)

examination of characters 65 and older on television programming also yielded comparable results; only 3% of the 328 total characters analyzed were age 65+.

A recent longitudinal study conducted by Signorielli (2004) analyzed a sample of prime-time television drama programming from 1993 to 2002. Signorielli studied the major, leading, and supporting characters from each sample year and found that not only was the percentage of older persons very low, but also there was a consistent decrease in the number of characters age 65+ from year to year. In fact, age 65+ characters comprised only 1% of the characters analyzed for the final sample year, 2002.

In the body of literature published on the demographic representation of the television's characters 65 and older, two well cited studies stand in contrast to the revelation that the medium underrepresents the age group. Age 65+ characters in Petersen's (1973) sample of television programs broadcast in 1972 accounted for 13% of the sample, overestimating the size of the age group by 3% since the U.S. Census Bureau's estimate was 10% at the time of the study, according to Petersen. However, it is important to note that Petersen's sample consisted of only 247 total characters, a relatively small and ungeneralizable number compared to far more cumbersome character totals like 9,131 (Signorielli & Gerbner, 1978) and 16,688 (Gerbner, Gross, Signorielli, & Morgan 1980).

### Cultivation Theory

Cultivation theory follows the cumulative model of media effects, which proposes that repeated exposure can socialize people to adopt the values and norms portrayed most often by the media, including stereotypical depictions of social groups like people age

65+ (Davis, 1985; Jeffres & Perloff, 1997). The basic premise of cultivation theory, developed by George Gerbner with the help of Larry Gross, is that long-term heavy television viewing causes people to perceive the television world as a representative depiction of what society is really like (Gerbner & Gross, 1976).

Gerbner and his colleagues at the University of Pennsylvania's Annenberg School of Communications operated under the assumption that in terms of its socialization capabilities, television reigns supreme compared to other American media. They posited that "the reach, scope, ritualization, organic connectedness, and non-selective use of mainstream television makes it different from other media of mass communications" (Gerbner & Gross, 1976, p. 175). Unlike print and film media, television is not limited by the public's immobility or illiteracy; it directly reaches people in the comfort of their own homes and requires minimal intellectual ability (Gerbner & Gross, 1976). Reasoning that television's omnipresence in American households grants the medium immense power for socialization, Gerbner, Gross, Morgan, and Signorielli (1980) put it best when they wrote:

The television set has become a key member of the family, the one who tells most of the stories most of the time... the more time one spends 'living' in the world of television, the more likely one is to report perceptions of social reality which can be traced to (or are congruent with) television's most persistent representations of life (p. 14).

Employed by the National Commission on the Causes and Prevention of Violence, Gerbner and his research team investigated violence on network television drama in 1967 and 1968. Their research continued through 1972 under the sponsorship of the Surgeon General's Scientific Advisory Committee on Television and Social Behavior

(Gerbner & Gross, 1976). In the spring of 1972, a team of consultants to the National Institute of Mental Health suggested that Gerbner's report to the Surgeon General (Gerbner, 1972) be expanded to account for social relationships and television viewer conceptions. Under this recommendation and a grant from the National Institute of Mental Health, Gerbner's research team began to periodically study television programming content and its effect on child and adult viewers' conceptions of social reality (Gerbner & Gross, 1976).

The project, called the *Cultural Indicators Project*, involved a three-pronged research strategy. The first prong was an *institutional process analysis* of the policies that dictated television's flow of messages. This part of the project proved difficult to fund, and the focus was placed on prongs two and three: *message system analysis* and *cultivation analysis* (Gerbner, Gross, Morgan, & Signorielli, 1986). Message system analysis involved sampling network television drama and conducting rigorous content analyses to identify television norms. These norms were considered to be "potential lessons" that viewers would learn from watching television, and they were used to develop questions for cultivation analysis (p. 22).

Gerber and Gross (1976) used cultivation analysis to determine what, if anything, heavy viewers were absorbing about real life from television. Participants were asked various questions about the prevalence of violence in the real world. For each question, there was a "real-world answer", devised from real life violence estimates, and a "television answer", formulated from the violence patterns that the researchers observed on television programming (p. 182). Controlling for covariates such as sex, age, and

education, Gerbner and Gross then measured the participants' relative amount of television viewing in comparison to their likelihood of choosing the television answer.

By contrasting the amount of heavy viewers and light viewers providing the television answers, Gerbner and Gross uncovered what they termed a "cultivation differential" between the two groups, which highlighted the social reality conceptions that television was supposedly cultivating in heavy viewers (p. 182). They found that participants in their national sample of adults who were classified as heavy television viewers (those who watched an average of four or more hours per day) were always more likely than light viewers (those who watched an average of two hours or less per day) to give the television answer. For example, when asked to estimate people's chances of being involved in violence during any given week, 52% of the heavy viewers overestimated the odds by giving the television answer while only 39% of the light viewers did so.

Gerbner, Gross, Morgan, and Signorielli (1980) defined two additional constructs of the cultivation effect, *resonance* and *mainstreaming*. The concept of resonance occurs when members of a certain group, such as all the people with a college education, experience comparable levels of a cultivation effect. Hence, the cultivation of some idea "resonates" with the entire group (Gerbner, Gross, Morgan, & Signorielli).

Mainstreaming, on the other hand, occurs when heavy television viewing causes a convergence of perceptions of objective reality across divergent groups, such as when two heavy viewers, one male and one female, hold concurrent opinions about something that is typically an object for disagreement between genders. In this way, cultivation theory suggests that television viewing overrides individual cultural, social, and political

differences so that common views are absorbed into society such that heavy television viewing perceptions are even adopted by those who do not watch television at all (Gerbner, Gross, Morgan, & Signorielli).

Gerbner, Gross, Morgan, and Signorielli (1986) asserted that their research on the cultivation effect was not limited to a comparison of television data and real-world statistics. They said, “Some of the most interesting and important topics and issues for cultivation analysis involve the symbolic transformation of message system data into hypotheses about more general issues and assumptions” (p. 28). Hence, statistical information learned from television lends itself to *first-order* cultivation beliefs, which provide a major source of assumptions that elicit *second-order* values, ideologies, and personal perspectives. For example, Gerbner, Gross, Morgan, and Signorielli (1980) discovered that heavy viewers who believe that the real world is just as saturated with violence as the television world experience a “mean world syndrome”; in their minds, most people “cannot be trusted” and are “just looking out for themselves” (Gerbner, Gross, Morgan, & Signorielli, 1986).

Although cultivation theory was originally devised to describe and predict the effects of violence on television, the theory was broadly-based from the outset; Gerbner and his research team have examined “the extent to which television viewing contributes to audience conceptions and actions in such realms as sex and age-role stereotypes, health, science, the family, educational achievement and aspirations, politics, and religion” (p. 22).

In terms of age-related cultivation research, Gerbner, Gross, Signorielli, and Morgan’s (1980) study was the most significant. The study took content analysis data

attained through the observation of a total 16,688 television programming characters on 1,365 shows broadcast between 1968 and 1978 and compared it with the results of the National Council on Aging's "Myth and Reality of Aging" survey. The survey, conducted by Louis Harris and Associates in 1974, measured both television viewing frequency and perceptions about the age 65+ population. Gerbner, Gross, Signorielli, and Morgan found a statistically significant positive relationship (a correlation of .10 where  $p < .001$ ) between heavy television viewing and the belief that the number of old people in society is diminishing, not growing. That relationship was even stronger (a correlation of .20 where  $p < .001$ ) among participants under age 30, even with the demographic variables of sex, age, income, and education held constant (p. 46).

Davis (1985) discussed the implications of cultivation theory on the findings of content analysis related to television's depiction of old-age. Positing that the medium's underrepresentation of elderly people teaches television viewers what to think about the significance of the age group in social society, Davis said, "When increasing age equals increasing invisibility on television, the message is clear: To be old is to be without importance" (p. 45).

### *Criticisms of Cultivation Theory*

Cultivation is a heavily-debated theory of media effects. Many critics disapprove of the theory's ambiguous definition of what constitutes "heavy" versus "light" television viewing, and they argue that cultivation effects are, at best, correlational; they can be reduced or eliminated when control variables—such as age, sex, income, education,

direct experience, etc.—other than an individual’s relative amount of television viewing are taken into account (Doob & Macdonald, 1979; Hirsch, 1981a & 1981b).

Many critics, the most noted of which are Hughes (1980) and Hirsch (1980, 1981a & 1981b), condemn cultivation theory for misattributing spurious relationships as causal ones. They contend that by overrating the power of television to manipulate viewers’ social reality perceptions, cultivation scholars fail to recognize that television viewing is but one of many variables that contribute to an individual’s concept of reality.

While these criticisms of cultivation theory are prevalent, it is the theory’s internal validity that has been called into question the most. Hence, the real bane of cultivation theory’s existence is that it cannot account for the steps that can be expected to mediate the cultivation process (Hughes, 1980). The theory does not explain the cognitive processes that take place between television viewing and social reality judgment-making. It is almost as if cultivation takes place within an unobservable “black box” deep inside the mind of the television viewer (Shanahan & Morgan, 1999, p. 172).

### Cognitive Subprocesses in the Cultivation Effect

Cultivation theory posits that television holds the power to influence people’s perceptions of social reality, but critics (Doob & Macdonald, 1979; Hirsch, 1980, 1981a & 1981b; Hughes, 1980) have argued contend that no causal relationship can be observed between television viewing and judgment-making about the real world.

In response to such scrutiny of cultivation theory, scholars began developing a process model of cultivation to provide a clearer understanding of the possible cognitive links that exist between the stimulus (i.e., television consumption) and the response (i.e.,



television-like social reality perceptions) in the cultivation effect. Their goal was to create an empirically verifiable model with testable links that could provide a theoretical framework for understanding the cognitive conditions that can be expected to either facilitate or inhibit cultivation. In so doing, they believed that they would boost cultivation theory's credibility by enhancing the case for its internal validity. L. J. Shrum, arguably the most prominent scholar of cultivation studies from a cognitive processing perspective, said "In virtually every discipline, it is incumbent upon researchers to explain the 'whys' and 'hows' of an effect, not just establish its existence" (1995, p. 402).

Unfortunately, the earliest attempts to achieve this goal were fruitless. Hawkins and Pingree (1980) examined how various social and psychological conditions as well as programming choice could affect cultivation. Drawing on Hawkins' (1977) postulation that the degree of trust in television's credibility as an information source varies from person to person, Hawkins and Pingree assumed that increased faith in television's ability to illustrate a realistic picture of the world would help to induce cultivation. However, there was not a significant relationship between perceived reality of television and cultivation. Likewise, there was little relation between cultivation and other potential variables that the researchers expected would mediate the cultivation effect. For example, participants who were classified as having high inference-making abilities, those who could presumably better interpret meaning from information, did not show stronger cultivation effects. Similarly, in Pingree's (1983) study, participants with low inference-making abilities actually exhibited a stronger cultivation effect than those with high inference-making abilities.

### *Perceived Reality of Television*

Following Hawkins (1977) and Hawkins and Pingree's (1980) seminal work that conceptualized the notion of perceived reality of television, Potter (1986) sought to more explicitly define the construct. In his multidimensional definition of perceived reality, he called the first dimension the *magic window*, which is the degree to which a television viewer thinks that television content is a precise representation of real life. The second dimension, *instruction*, refers to viewers' perceptions of television's ability to supplement their real life experiences and broaden their limited knowledge of foreign places and cultures. The third dimension is *identity*; it is the level of television viewers' perceived similarity between their lives in the real world and the lives of television characters.

Five years later, Potter (1986) studied these three perceived reality dimensions of television in relation to average television viewing frequency among a sample of college and high school students. Controlling for the variables of sex, age, and race, Potter examined the participant's estimates of their chances of being victimized—by murder, rape, assault, robbery, or fist fight—and of dying from particular causes, including: accidents, cancer, heart disease, homicide, and pneumonia. Potter's results disproved his assumption that increased perceived reality of television along any one of the three dimensions would increase the cultivation effect. Among the participants who scored high on the magic window dimension (i.e. those who thought that television content is a precise representation of real life), increased viewing frequency equaled increased estimates of being murdered, robbed, and dying in a car accident. However, the participants who scored low on the identity scale (i.e., those who did not personally identify with television characters) and on the instruction scale (i.e., those who did not

think that television can serve as an instructional aid) exhibited stronger cultivation effects than those who scored high. This supports the supposition that people who tend to think that television provides them with a “magic window” to the world will be more inclined to enculturation through television (p. 162).

Potter’s magic window dimension was subsequently adopted as the standard definition of perceived reality of television, but there was a lot of controversy over how to operationalize the dimension in order to effectively measure a person’s perceived reality of television (Potter, 1988). That is, until Rubin, Perse, and Taylor (1988) developed a five-item perceived reality scale to be used in their study of perceived realism as a variable in cultivating social reality perceptions of faith in others, life control, interpersonal connection, political efficacy, and safety. Like the findings reported by Potter (1986), the results of Rubin et al.’s (1988) study suggested that perceived realism of television does indeed mediate the cultivation effect; a sense of political efficacy, faith in others, and concern for personal safety could be at least partially attributed to a person’s perceived reality of television.

### *Learning Theory of Cultivation*

Another wave of scholarly research not only considered viewer’s perceived reality of television as a mediator in the cultivation effect, but also broke down the cultivation process into four linear stages, commonly referred to as “learning theory” (Shrum, 2007a, p. 247). Hawkins and Pingree (1982) were the first to propose that viewers take what they *learn* (stage one) about the world from television to *construct* (stage two) conceptions about social reality. Further, they proposed that the viewer then adopts what Gerbner,

Gross, Morgan, and Signorielli (1980) termed *first-order beliefs* (stage three), which eventually lead to the formation of generalized *second-order attitudes* (stage four).

Operating under the assumption that “there is considerable psychological distance between what is seen during individual acts of viewing or even the accumulation of many acts of viewing, and the construction of beliefs about social reality similar to those portrayed or implied by television,” Hawkins, Pingree, and Alder (1987, p. 555) tested two possible subprocesses in the cultivation effect in a two-part study. First, they examined whether perceived reality of television served as an intervening step between learning from television and constructing social reality beliefs. Second, they examined whether first-order beliefs based on television content can truly lead to generalized second-order attitudes.

A cultivation effect was observed in part one of Hawkins, Pingree, and Alder’s (1987) study; heavy television viewers provided higher estimates of violence and crime in social reality than light television viewers. Part two of the study revealed that first-order social reality beliefs were not conditional in the relationship between television viewing and second-order attitudes. Hence, Hawkins et al.’s (1987) study did not support their proposed four-stage learning theory of cultivation.

Replicating some of the same conclusions found by Hawkins, Pingree, and Alder’s (1987) and Potter’s (1991a) study on component subprocesses in the cultivation effect also refuted the learning theory of cultivation. Potter did find evidence for first-order cultivation effects; heavy television viewers were more likely to construct television-like perceptions of social reality than light viewers in terms of not only violence and crime, but also sex, affluence, divorce, and health. On the other hand, there

were no significant differences between heavy and light television viewers' second-order attitudes, demonstrating that "there is no construction effect with second-order measures" (Potter, 1991a, p. 94). Learning from television was found to lead only to the construction of first-order social reality beliefs.

Potter (1991b) conducted another study specifically designed to find out if first- and second-order measures of cultivation should be measured simultaneously or independently. The social reality measures used in this study pertained to three frequently-studied cultivation topics, including: women in the workplace, affluence, and divorce. Potter found that as a whole, first-order beliefs and second-order attitudes were only weakly related. Although first-order beliefs were more likely to predict second-order attitudes than vice versa, intercorrelations between the two measures on any one of the three topics were "very modest" and suggested "an ability for one of these measures to predict a maximum of less than 5% of the variance of the other" (Potter, 1991b, p. 107).

Hawkins and Pingree (1990) later concluded that the results of the Hawkins, Pingree, and Alder (1987) study and Potter's (1991a; 1991b) studies suggest that it is very unlikely that viewers form second-order attitudes from first-order beliefs. Therefore, although the learning theory process model of cultivation was not supported by the research, these studies did serve to identify a key idea for future research in the area of cultivation processes: first-order beliefs and second-order attitudes must be treated as independent of one another and tested as such. This major finding shows that "as a first step toward advancing research on the cognitive subprocesses underlying cultivation, the contribution of Hawkins and Pingree and others cannot be overemphasized" (Shrum, 2007a, p. 248).

## First-Order Cultivation Effects Models

Operating under the assumption that they should focus their research efforts on either first-order beliefs or second-order attitudes, scholars who continued to search for a process model of cultivation effects chose the former. This is because the research has consistently supported the presence of first order cultivation effects, but it has been much less definitive about the existence of cultivated second-order attitudes (Shrum, 1995). First-order beliefs (e.g., estimates of the frequency of people being mugged) also have a television answer, meaning that they can be clearly defined and observed in order to support the observation of a cultivation effect. Conversely, it is harder to find support for a cultivation effect with second-order attitudes (e.g., fear of walking alone at night), which are not directly comparable to some quantifiable reference in television content (Hawkins & Pingree, 1990).

The two most prominent social cognition models of first-order cultivation effects are the weighing and balancing model (Shapiro & Lang, 1991) and the accessibility model (Shrum, 1999b; 2002). Both of these models examine cultivation subprocesses from the perspective that social reality judgments are *memory-based* and not made *on-line*. In other words, people rely on their recollections of their previous exposure to things—in this case, through television viewing—instead of basing their judgments on the circumstantial context of those things in their present everyday lives (Shrum, 2007a).

### *Weighing and Balancing Model of Cultivation*

Shapiro and Lang (1991) proposed a weighing and balancing model to explain the cultivation effect. According to the model, the earliest stage of the cultivation process

occurs when a television viewer processes television information and stores it as “event memories” in his or her mind (Shapiro & Lang, 1991, p. 686). Viewers create memories of the event, its context, and the source of its memory (i.e., television). Then, in the stage where social reality judgments need to be made about something, viewers retrieve all of the relevant memories they have of that particular thing and “weigh and balance” the significance that each one bears on the decision at hand.

To test the weighing and balancing model, Shapiro (1991) compared participant’s perceptions of the likelihood of crime and the proportion of occupational or social groups in the population to their usage of various communication media, including: television, newspapers, magazines, and books. He also asked each participant to freely recall examples of information stored in his or her memory about the likelihood of crime and the proportion of occupational or social groups; the participants then self-reported the source of each memory.

Shapiro found that memories in a particular domain (e.g., crime) predicted participants’ worldviews in that domain and that participants truly did associate the perceived source of a memory with the memory itself. The results also at least partially supported Shapiro’s hypothesis that memories categorized by source would better predict a participant’s worldview than event memories alone. Finally although the participants in Shapiro’s study attributed more examples of recalled memories to sources of communication that they used most often, memories categorized by source better predicted. According to Shapiro, this showed that “the important process is not the accumulation of event memories but the weighing and balancing of those memories” to form judgments about social reality (p. 8).

According to the weighing and balancing model, if a viewer realized that television was the source of a particular memory, he or she would likely chose to deem that memory an unreliable means for constructing judgments about the real world. Therefore, careful weighing and balancing of information retrieved from a memory, especially the source of that memory, could mediate the cultivation effect. However, Johnson, Hashtroudi, and Lindsay's (1993) work on what they call *source monitoring* suggests that people cannot always remember the source of their memories; they might mistakenly attribute a memory to some other source instead of recognizing that television was the memory's originator. Such errors in source attribution could be caused by an individual's lack of motivation to closely examine the root of a memory or by a cognitive deficiency that disables him or her from correctly attributing the source.

#### *Accessibility Model of Cultivation*

While the weighing and balancing model assumes that people make laborious attempts to verify information retrieved from memory and that they will discount information if they think the original source lacks credibility, the accessibility model "does not assume that people (necessarily) make source discounting errors, but rather that they usually do not make the effort to source discount at all" (Shrum, 2007a, p. 259). The most basic premise of Shrum's accessibility model (1999b, 2002) is that people simplify decision-making about social reality by using cognitive shortcuts, which are known as "heuristics" (Sherman & Corty, 1984).

Shrum's model rests on two fundamental social cognitive concepts, Wyer and Srull's construct accessibility and Tversky and Kahneman's availability heuristic. Wyer



and Srull (1986) conceptualized an individual's long-term memory as an assortment of mental storage bins separated by subject, each containing vertical stacks of information. According to Wyer and Srull, when an informed decision needs to be made, people search the appropriate bin by starting from the top and moving down so that the most recent information is what is called upon. Wyer and Srull proposed that as new information is obtained and old information is reinforced, that information is automatically stacked in the top slot of a mental bin. They also posited that sometimes the information at the top of a storage bin can be overlooked. "This means that the more often a representation appears near the top of the bin, the greater the likelihood of it being retrieved" (Shrum & O'Guinn, p. 442). Therefore, Wyer and Srull's storage bin model suggests that both the recency and frequency of information on a certain topic affect how accessible that subject matter is in a person's mind, and hence, what information they might recall with the greatest ease.

Tversky and Kahneman's (1973) availability heuristic assumes that the ease with which something comes to mind creates a bias toward that thing. When asked to make judgments about the probability of something—whether it is a person, place, or occurrence—in real life, people will likely overestimate or underestimate that thing based on how extensively they have to search their minds for relevant examples of it. Tversky and Kahneman reasoned that "availability is an ecologically valid clue for the judgment of frequency because, in general, frequent events are easier to recall or imagine than infrequent ones" (p. 209).

Shrum (1995) applied the concepts of construct accessibility and the availability heuristic to cultivation theory and reasoned that it is quite possible that television, as a

potential information source, holds the power to influence people's perceptions of social reality by offering recent and frequent illustrations of a particular subject. In other words, an individual will perceive that the "prevalence of a construct" (e.g., the percentage of people age 65+ in the U.S. population) or the "trait characteristics of individuals" (e.g., the persona of people age 65+) correspond with the relative ease with which he or she can recall examples of that particular thing from memory (Shrum, 2007a, p. 254). The resulting accessibility bias is the basis for the first two propositions in Shrum's accessibility model of cultivation, which is made up of five testable propositions including the following: 1) Television viewing influences accessibility; 2) Accessibility mediates the cultivation effect; 3) Television exemplars are not discounted; 4) Motivation to process information mediates the cultivation effect; and 5) Ability to process information mediates the cultivation effect (2002, p. 80-86).

As a whole, these propositions posit that television viewing makes television exemplars more available in people's minds. This creates an accessibility bias that can be expected to promote or discourage cultivation, depending on whether people process the television information they retrieve from memory heuristically or systematically, the latter of which requires a laborious effort to scrutinize the retrieved information. According to the model, if people are motivated and able to process television information, they will engage in systematic processing. In turn, they will recognize television as the source of the information and discount the information because they have deemed television an unreliable source. On the other hand, if people are not motivated to process a message or if they are motivated but unable to process a message,

they will engage in heuristic processing. Since they do not realize that information is coming from something they saw on television, they do not see the need to discount it.

Proposition three, which assumes that television exemplars are not discounted, then acts as the determining factor in Shrum's accessibility model (1999b, 2002). If people who engaged in heuristic processing due to their lack of motivation or ability are primed to recognize that television is the source of information retrieved from memory, they will discount the source such that no cultivation effect will occur. However, if people are not primed to recognize television as the information source, they will not discount the source and a cultivation effect will be observed.

Therefore, Shrum's accessibility model of cultivation posits that when either motivation or ability is absent, people will engage in heuristic processing of a message, and the presence or absence of source-priming will determine if the source (i.e., television) will be identified and discounted or simply left undefined. The model has been tested and many studies have shown support for each of its five propositions (1999b, 2002). Several of these studies are outlined below. Proposition number three, which says that television exemplars are not discounted, is discussed last because it serves as the final stage in the accessibility model's flow from television exposure to judgment-making about social reality.

### Television Viewing Influences Accessibility

In an unprecedented attempt to determine whether the accessibility of information in memory can help explain cultivation effects, Shrum and O'Guinn (1993) conducted an experiment using reaction time testing, which measures the amount of time participants

use to generate responses to questions. If a certain construct has been activated in a person's mind recently and/or frequently, that information becomes more accessible; thus, the more accessible a construct is to a person, the faster he or she will be able to respond (Fazio, 1990).

In Shrum and O'Guinn's (1993) study, the participants were asked to provide percentage estimates to questions given to them via a computer screen that pertained to constructs that are overrepresented on television (e.g., crime, substance abuse, prostitution). Consistent with their hypotheses, the research team found that heavy television viewers gave higher estimates than light television viewers of the constructs' frequency in social reality. What's more, the heavy viewers were able to generate their responses faster than the light viewers, even when controlling for other variables such as grade point average and use of other media.

In an extension of the 1993 study conducted by Shrum and O'Guinn, Shrum (1996) used reaction time testing to measure participant responses to questions about three constructs that appear very often on television: crime, marital discord, and particular occupations. Shrum's findings replicated those found by Shrum and O'Guinn (1993); a cultivation effect was observed as heavy viewers provided higher frequency estimates of the three constructs than light viewers, and an accessibility effect was noted as heavy viewers were also able to provide their answers faster than light viewers. Similar results were uncovered in another study conducted by O'Guinn and Shrum (1997), which examined the effect of television exposure on consumer socialization. Heavy soap opera viewers gave higher prevalence estimates of products and behaviors associated with affluence than light viewers, and they also constructed their answers much faster.

## Accessibility Mediates Cultivation

Shrum and O'Guinn (1993) concluded that "enhanced accessibility of relevant information for heavier viewers can at least partially account for the cultivation effect" (p. 436). They based this position on indirect evidence uncovered in their research study. When the research team controlled for accessibility, which was measured by speed of response, the cultivation effect was significantly reduced.

Still, the indirect evidence obtained from Shrum and O'Guinn's study did not seem to be enough; just because television viewing influences accessibility does not mean that accessibility acts a mediator in the cultivation effect. To show that both the former and the later were true, Shrum (1996) used path analyses. His results showed that there was a significant relationship between the variables when moving from television viewing frequency to accessibility, and from accessibility to social reality judgments.

Busselle (2001) also found support for accessibility as a mediator in the cultivation effect. In his study, participants were exposed to two different experimental conditions. In the first condition, participants estimated the prevalence of three constructs that are consistently overrepresented on television—Black doctors, shootings, and extramarital affairs—before they were asked to recall a specific example of each construct. In the second condition, participants recalled a specific example of each construct before providing their prevalence estimates. Interestingly, a cultivation effect was observed in the first condition but not in the second. Heavy television viewers gave higher prevalence estimates than light television viewers only when the participants were not asked to recall an example the constructs first. In other words, the accessibility bias

for heavy viewers was eliminated in the second condition due to a leveling out of the accessibility of the constructs in the minds of the participants.

#### Motivation to Process Information Moderates Cultivation

The theoretical framework for this proposition comes from Petty and Cacioppo's elaboration likelihood model (Cacioppo & Petty, 1982; Petty & Cacioppo, 1986). The model suggests that the amount of cognitive elaboration, or "the extent to which a person carefully thinks about issue-relevant information" to make a decision, depends on his or her motivation and ability (Petty & Cacioppo, 1986, p. 7). When conditions promote motivation and ability, the "likelihood" of cognitive "elaboration" is high; when conditions discourage motivation and ability, the "likelihood" of cognitive "elaboration" is low.

Both the message and the message recipient can serve as motivational variables (Petty & Cacioppo, 1986). In terms of the message itself, an individual is unlikely to be motivated to systematically process information that has little or no personal relevance. Individuals also have a varying *need for cognition*, which can be defined as "a need to understand and make reasonable the experiential world" (Cohen, Stotland, & Wolfe, 1955). A message recipient with a high need for cognition is more likely to process information systematically while a message recipient with a low need for cognition will probably engage in heuristic processing (Cacioppo & Petty, 1982).

Shrum (2001) conducted an experiment to test the proposition that people who are not motivated to process a message will engage in heuristic processing while people who are motivated to process the same message will engage in systematic processing.

Participants in the study were randomly assigned to three experimental conditions. In the heuristic processing condition, participants were asked to provide prevalence estimates of constructs overrepresented on television—crime, certain occupations, affluence, and marital discord—quickly and spontaneously. Participants in the systematic processing condition were informed that accuracy was imperative for the important study they were taking part in, encouraging them to think carefully before providing their prevalence estimates. The other participants were part of the control group, who were asked to simply answer the questions. The results of Shrum’s (2001) experiment suggested that “processing strategy moderated the cultivation effect such that cultivation effects were noted in the heuristic and control groups but not in the systematic group” (p. 94).

#### Ability to Process Information Moderates Cultivation

Petty and Cacioppo’s elaboration likelihood model (Cacioppo & Petty, 1982; Petty & Cacioppo, 1986) also serves as the theoretic framework for this proposition. As previously mentioned, cognitive elaboration depends on both motivation and ability to process a message.

To discover whether people who are unable to process a message will engage in heuristic processing while able people will use systematic processing, Shrum (1999a) conducted an experiment that used time pressure to manipulate participants’ ability to engage in systematic processing to answer questions. Randomly sampled participants were selected for a mail survey, which was considered low time pressure, or a telephone survey, which was considered high time pressure. Shrum hypothesized that if cultivation was a result of heuristic processing of television information retrieved from memory, the

cultivation effect should be stronger among participants taking the phone survey than the mail survey. His predictions were supported; for four of the five constructs overrepresented on television—including societal crime, societal vice, marital discord, affluence, and certain occupations—, participants who took the telephone survey exhibited a greater cultivation effect. These results were replicated in a later experiment conducted by Shrum (2007).

#### Television Exemplars are Not Discounted

Several scholars have posited that if people recall an example of a construct retrieved from memory and deem it irrelevant to the judgment at hand, they will disregard that example and employ other information as the basis for decision-making (Higgins & Brendl, 1995; Shapiro & Lang, 1991). Rationalizing “the somewhat counterintuitive notion that people would use information from nonveridical sources (e.g., fictional programs) to form judgments about the real world,” Shrum (2007) said that because they lack either motivation or ability, “people will likely not attend to source features in constructing their judgments” (p. 256). Unmotivated people might engage in low involvement processing (Petty & Cacioppo, 1982), or people might lack the ability to remember the source of information and make source monitoring errors (Mares, 1996; Shrum, 1997).

A study conducted by Shrum, Wyer, and O’Guinn (1998) provided support for the proposition that people do not discount information they learn from television because they do not identify the source of retrieved information unless prompted to do so. To manipulate participants’ awareness that they were basing their judgments on television



information, Shrum et al. (1998) used three experimental *priming* conditions. Priming is an experimental technique that employs a stimulus to sensitize an individual to subsequent exposure to that person, place, thing, or idea (Iyengar & Kinder, 1987). Scholars like Iyengar and Kinder (1987) and Roskos-Ewoldsen, D., Klinger, and Roskos-Ewoldsen, B. (2002) have also applied the concept of priming to the media's ability to sensitize the public to violence and even to particular political candidates.

In the first condition of Shrum, Wyer, and O'Guinn's (1998) experiment, the no-priming condition, participants were asked to provide prevalence estimates of crime and certain occupations before they were questioned about their television viewing habits. In the source priming condition, the order of the questions was reversed such that participants answered questions about their television viewing habits before providing prevalence estimates of crime and certain occupations. Participants in the relation-priming condition answered questions in the same order as the no-priming condition, but they were first exposed to an instructional statement intended to prime them to think that television might be the source of the information they were calling upon to answer the prevalence estimate questions. The statement was as follows: "In order to answer these questions, you will use information from a variety of sources. You should be aware that the subjects of these questions are often depicted on television, more so than occurs in real life. Consequently, people often use this information to formulate answers" (Shrum, Wyer, & O'Guinn, 1998, p. 450).

As was predicted by Shrum, Wyer, and O'Guinn, priming did have an effect on cultivation. Only in the no-priming condition, when participants gave prevalence estimates of crime and certain occupations before they were questioned about their

television viewing habits, did heavy television viewers provide more television-like estimates than light viewers. In both the source-priming and relation-priming conditions, no cultivation effect was observed.

## Hypotheses

### *Cultivation Within Priming Conditions*

Shrum, Wyer, and O'Guinn's (1998) research on the role of source discounting in cultivation revealed that priming conditions moderate the cultivation effect; a cultivation effect was observable only when television was not primed as the source of information. Specifically, in the no-priming condition, heavy television viewers' perceptions of crime and occupations were more in line with what is portrayed on television than were the perceptions of light television viewers. If Shrum et al.'s (1998) findings are generalizable and not limited to television's cultivation of perceptions about crime and occupations, similar results should be obtained when employing the same methodology to a study of the relationship that exists between television viewing and social reality perceptions about people 65 and older.

As illustrated by Table 1, six priming groups were examined in this study. The vertical axis represents a pre-existing condition, participants' television viewing level. The horizontal axis represents the experimental condition that participants were exposed to, including: no-priming, source-priming, and relation-priming.

**Table 1: Priming Groups**

	Heavy TV Viewers (H)	Light TV Viewers (L)
No Priming (P1)	P1H: Heavy TV viewers exposed to the no-priming experimental condition	P1L: Light TV viewers exposed to the no-priming experimental condition
Source-priming (P2)	P2H: Heavy TV viewers exposed to the source-priming experimental condition	P2L: Light TV viewers exposed to the source-priming experimental condition
Relation-priming (P3)	P3H: Heavy TV viewers exposed to the relation-priming experimental condition	P3L: Light TV viewers exposed to the relation-priming experimental condition

Most of the research conducted on the availability heuristic, including Tversky and Khanemnan's (1973) seminal work, focused on how increased ease in recall of something from memory leads to increased estimates of the occurrence of that thing in real life. According to Schwarz, Bless, Strack, Klumpp, Rittenauer-Schatka, and Simons (1991), who studied the availability heuristic from the opposite end of the continuum, "difficulty in recall may decrease judgments of frequency, probability, or typicality, much as ease of recall has been assumed to increase these judgments" (p. 201) Therefore, the following hypothesis was proposed:

- H1: In the no-priming condition, heavy television viewers (P1H) will report lower estimates of the percentage of people age 65+ in the U.S. population than light television viewers (P1L).

While the participants in Shrum, Wyer, and O'Guinn's (1998) no-priming condition exhibited a cultivation effect, participants in the source-priming and relation-priming conditions did not. This suggests that when television was primed as a source of information, either through source-priming or relation-priming, heavy viewers and light viewers provided similar responses to questions about social reality. Hence, it was expected that in both the source-priming and relation-priming conditions in this

experiment, there would not be a significant relationship between participants' television viewing level and their perceptions of people 65 and older. The following two hypotheses were proposed:

H2: In the source-priming condition, heavy television viewers (P2H) and light television viewers (P2L) will report comparable estimates of the percentage of people age 65+ in the U.S. population.

H3: In the relation-priming condition, heavy television viewers (P3H) and light television viewers (P3L) will report comparable estimates of the percentage of people age 65+ in the U.S. population.

Shrum, Wyer, and O'Guinn's (1998) methodology can be used to study not only the relationship that exists between television viewing and social reality perceptions about age 65+ people's demographic set size, but also the relationship between viewing and perceptions about old-age trait characteristics. Given that an extensive review of the literature on television's depiction of people 65 and older supported the notion that the age group is consistently portrayed as sexless, insignificant, and comical, the following hypothesis and propositions were proposed:

H4: In the no-priming condition, heavy television viewers (P1H) will report less favorable perceptions of people age 65+ than light television viewers (P1L).

- P1: A greater proportion of the heavy television viewers (P1H) than the light television viewers (P1L) will perceive people age 65+ to be sexless.
- P2: A greater proportion of the heavy television viewers (P1H) than the light television viewers (P1L) will perceive people age 65+ to be insignificant.
- P3: A greater proportion of the heavy television viewers (P1H) than the light television viewers (P1L) will perceive people age 65+ to be comical.

Again, since Shrum, Wyer, and O'Guinn (1998) did not find participants in the source-priming and relation-priming conditions to exhibit a cultivation effect, it was assumed that heavy viewers and light viewers in these two conditions would provide not only similar estimates of the age 65+ population in the U.S., but also similar perceptions of people 65 and older. The following two hypotheses were proposed:

- H5: In the source-priming condition, heavy television viewers (P2H) and light television viewers (P2L) will report comparable perceptions of people age 65+.
- H6: In the relation-priming condition, heavy television viewers (P3H) and light television viewers (P3L) will report comparable perceptions of people age 65+.

### *Cultivation Across Other Pre-Existing Conditions*

In addition to television viewing level, two other pre-existing variables expected to influence cultivation were considered in this study: perceived reality of television and direct experience with people 65 and older in real life. These two variables were expected to work in an opposing manner; while increased perceived reality of television was expected to enhance television-like perceptions of people 65 and older, increased direct experience with people 65+ was expected to diminish television-like perceptions of people 65+. Since a cultivation effect was only expected to be observed when participants were not prompted to recognize television as an information source, these two variables were only used to compare the responses of heavy television viewers in the no-priming condition.

**Table 2: Perceived Reality Groups**

	Heavy TV Viewers (H)
High Perceived Reality (HPR)	HPRH: Heavy TV viewers who have a high level of perceived reality
Low Perceived Reality (LPR)	LPRH: Heavy TV viewers who have a low level of perceived reality

As illustrated by Table 2, heavy viewers with high perceived reality were compared to heavy viewers with low perceived reality. Viewers' perceived reality of television as a potential window to the world affects the degree to which they apply television's values and norms to real life (Hawkins, 1977). Therefore, heavy viewers with high perceived reality of television were assumed to be more likely to report television-like beliefs about people 65 and older than heavy viewers with low perceived reality of television. The following two hypotheses were proposed:

H7: In the no-priming condition, heavy television viewers with high perceived reality (HPRH) will report lower estimates of the percentage of people age 65+ in the U.S. population than heavy viewers with low perceived reality (LPRH).

H8: In the no-priming condition, heavy television viewers with high perceived reality (HPRH) will report less favorable perceptions of people age 65+ than heavy viewers with low perceived reality (LPRH).

P1: A greater proportion of heavy television viewers with high perceived reality (HPRH) than heavy viewers with low perceived reality (LPRH) will perceive people age 65+ to be sexless.

P2: A greater proportion of heavy television viewers with high perceived reality (HPRH) than heavy viewers with low perceived reality (LPRH) will perceive people age 65+ to be insignificant.

P3: A greater proportion of heavy television viewers with high perceived reality (HPRH) than heavy viewers with low perceived reality (LPRH) will perceive people age 65+ to be comical.

**Table 3: Direct Experience Groups**

	Heavy TV Viewers (H)
High Direct Experience (HDE)	HDEH: Heavy TV viewers who have a high level of direct experience with people 65 and older
Low Direct Experience (LDE)	LDEH: Heavy TV viewers who have a low level of direct experience with people 65 and older

As illustrated by Table 3, heavy viewers with a high level of direct experience with people 65 and older were compared to heavy viewers with a low level of direct experience with people 65 and older. Life experiences can serve to disprove television's picture of the world (Hawkins & Pingree, 1980). This means that the presence or absence of people 65 and older in the lives of heavy television viewers could have an effect on their beliefs about the number and nature of people age 65+. Hence, it was assumed that heavy television viewers with high levels of direct experience with people 65 and older would have less television-like perceptions about people 65 and older than heavy television viewers with low levels of direct experience with people 65 and older. Two final hypotheses were proposed in this study:

H9: In the no-priming condition, heavy television viewers with high direct experience (HDEH) will report higher estimates of the percentage of people age 65+ in the U.S. population than heavy viewers with low direct experience (LDEH).

H10: In the no-priming condition, heavy television viewers with high direct experience (HDEH) will report more favorable perceptions of people age 65+ than heavy viewers with low direct experience (LDEH).

P1: A greater proportion of heavy television viewers with low direct experience (LDEH) than heavy viewers with high direct experience (HDEH) will perceive people age 65+ to be sexless.



P2: A greater proportion of heavy television viewers with low direct experience (LDEH) than heavy viewers with high direct experience (HDEH) will perceive people age 65+ to be insignificant.

P3: A greater proportion of heavy television viewers with low direct experience (LDEH) than heavy viewers with high direct experience (HDEH) will perceive people age 65+ to be comical.

## METHODOLOGY

### Sample

The sample for this study was drawn from an undergraduate mass communications course at a large, southeastern university. College undergraduates were sampled because research shows that cultivation of social reality perceptions could be especially prominent among young adults; people between the ages of 18 and 29 are particularly susceptible to television's power to cultivate their perceptions of people 65 and older, perhaps because they are so "distant" from old age (Gerbner, Gross, Signorielli, & Morgan, 1980b, p. 46). What's more, Peterson and Ross (1997) asserted that the elderly tend to be depicted in a less favorable light when younger individuals make up the target audience. It is logical, then, to study the extent to which televised portrayals of people age 65+ are cultivating corresponding views of old-age in the psyche of young adults.

### Procedure

Modeling Shrum, Wyer, and O'Guinn's (1998) methodological approach, participants in this experiment were randomly assigned to one of three experimental conditions, one control condition (no-priming) and two priming conditions (source-priming and relation-priming). Participants in the three conditions completed a two-page questionnaire that included the following:

- *Dependent measures* to gauge participant's perceptions about the demographic set size (number) and trait characteristics (nature) of people 65 and older
- *Demographic measures* to ascertain the age, sex, and grade point average of each participant
- *Television measures* to estimate total weekly viewing time and perceived reality of television
- *Direct experience measures* to determine whether participants' real life experiences corroborate television content

The order of the first three sections in the three questionnaires differed according to the priming condition. The no-priming questionnaire included dependent measures first, followed by demographic measures and television measures. In the source-priming questionnaire, the order of the sections was reversed; demographic measures and television measures came first, and dependent measures followed.

Finally, the relation-priming questionnaire prompted participants to read an introductory statement about how television typically portrays people age 65+ before completing the questionnaire, which was ordered in the same manner as the no-priming questionnaire. The introductory statement, which was based on Shrum, Wyer, and O'Guinn's (1998) introductory statement, was as follows: "In order to answer these questions, you will use information from a variety of sources, including television. You should be aware that people age 65 and older are underrepresented on television compared to their actual percentage in the population. The age group is also negatively

portrayed on television. Consequently, people often use this information to formulate answers.”

In all three experimental conditions—no-priming, source-priming, and relation-priming—direct experience measures were listed last so as to avoid any interference with the intended priming condition.

### Dependent Measures

The three questionnaires contained items to measure participants’ social reality perceptions of both the number and nature of people 65+. In terms of the relative number of people in the age group, one open-ended item was employed to measure participant’s perceived size of the national population of people 65 and older. Specifically, the item was as follows: What percent (between 0% and 100%) of the current United States population is age 65+?

Twelve Likert-type scale items measured participants’ perceptions of age 65+ trait characteristics. Participants provided a numerical response to each given statement with a number between one (strongly disagree) and five (strongly agree). The content of these items was based on a careful review of content analyses conducted on television’s portrayal of people 65 and older, which revealed that they are consistently depicted as sexless, insignificant, and comical.

To measure perceptions of people age 65+ as sexless, the following statements were used: 1) People 65+ are not sexually active; 2) People 65+ are sexually aroused; 3) People 65+ are not sexually passionate; and 4) People 65+ are not seductive.

Perceptions of people age 65+ as insignificant were measured by the following statements: 1) People 65+ are insignificant in society; 2) People 65+ are not successful in society; 3) People 65+ are thriving members of society; and 4) People 65+ are forgotten by society.

Finally, the following statements measured perceptions of people age 65+ as comical; 1) People 65+ are comical; 2) People 65+ are laughed at; 3) People 65+ are not amusing; and 4) People 65+ are unintentionally funny.

### Demographic Measures

The three conditional questionnaires also included items to measure variables including the following: sex, age, and grade point average. These covariates were used to identify trends among groups in this experiment, yielding information about the prevalence of the cultivation effect across the two sexes, divergent ages, and varying levels of intelligence, which was measured by grade point average.

### Television Measures

Since Shrum, Wyer, and O'Guinn (1998) did not find television program category to be a significant predictor of social reality perceptions, and the research team posited that "total television viewing is the preferred predictor variable" (p. 451), television viewing level was measured in terms of total average weekly viewing. Hence, the type of television programming watched was not included in this analysis, and for simplification purposes, it was assumed that "television viewing" included viewing of both programming and commercials.

Following Shrum, Wyer, and O'Guinn's (1998) procedure, six open-ended items asked participants to estimate the number of hours they watch television during particular time periods of an average week. The following items were used: 1) On an average weekday morning, how many hours of television do you watch; 2) On an average weekday afternoon, how many hours of television do you watch; 3) During prime time on an average weekday, how many hours of television do you watch; 4) During late night on an average weekday, how many hours of television do you watch; 5) On an average Saturday, how many hours of television do you watch; and 6) On an average Sunday, how many hours of television do you watch.

The four weekday measures were multiplied by five and added to the viewing estimates for Saturday and Sunday in order to identify an average weekly television viewing estimate for each participant. The sums from this calculation yielded a wide range of weekly television viewing estimates. The range of estimates was divided into thirds such that participants who gave viewing estimates that ranked in the top third were labeled heavy viewers, and participants who gave viewing estimates that ranked in the bottom third were labeled light viewers. Participants whose estimates ranked in the middle third of all responses, then, were labeled moderate viewers; their data was thrown out because the objective of this research study, and cultivations studies as a whole, is to compare heavy and light television viewers.

To assess the extent to which each participant believed that television provides accurate representations of real life, the questionnaires also included Rubin, Perse, and Taylor's (1988) five-item perceived reality scale. Rubin et al.'s (1988) perceived reality scale is frequently relied upon as a means for accessing people's perceptions about the

realism of television content and making comparisons between television viewing level and the adoption of social reality beliefs. The five items were measured using a Likert-type scale where participants provided a numerical response to each given statement with a number between one (strongly disagree) and five (strongly agree). The following statements were used for this measure: 1) Television shows life as it really is; 2) Television presents things as they really are in life; 3) If I see something on television I can be sure it really is that way; 4) Television lets me see how other people live; and 4) Television lets me see what happens in other places as if I'm really there.

#### Direct Experience Measures

Since “even if television messages affect the construction of social reality, it is not done in a vacuum,” it was imperative that this research study examine the effect that direct experiences have on cultivation (Weimann, 2000, p. 74). For this reason, the questionnaires also included an item to measure participant’s direct experience with people 65+. Using a Likert-type scale where participants provided a numerical response to each given statement with a number between one (strongly disagree) and five (strongly agree), participants responded to five items. The following statements were used for this measure: 1) I live or have lived with at least one person who is 65+; 2) People 65+ are present in my life; and 3) I frequently interact with people 65+.

#### Data Analysis

Independent-Samples t-Tests, which are interval-level tests, were employed to analyze the data collected in this study. This particular statistical method was chosen

because of its ability to compare the statistical significance of a difference between the means of two independent groups on some measure, which is applicable to all of the hypotheses posed by this study. All t-Tests were analyzed at the 95% confidence level, which is typical in social science research.

Although some researchers denigrate the use of interval-level testing to analyze data obtained through Likert-type scales, the practice is common in social science research, especially when the scale has at least five items and one middle item. Jaccard and Wan (1996) said, “For many statistical tests, rather severe departures (from intervalness) do not seem to affect Type I and Type II errors dramatically” (p 4). The Likert-type scale used in this study’s survey instrument not only contained five items with one middle item (i.e., strongly disagree, disagree, undecided, agree, and strongly agree), but also clearly implied a symmetry of response levels in its wording. Hence, it was assumed that respondents perceived each level in the Likert-type scale as equidistant from the others, and interval-level testing was deemed appropriate for data analysis.

Further, exploratory analysis employed a univariate ANOVA to analyze the participants’ experimental condition, their television viewing level, and the two categories’ interaction effect for the dependent variable “What percent of the total current U.S. population is 65+. The experimental condition—no-priming, source-priming, or relation-priming—was entered as a fixed factor, and the television viewing level, heavy viewing or light viewing, was entered as a random factor.



## RESULTS

### Sample

A total sample of 247 undergraduate students enrolled in a mass communications course at a large, southeastern university completed questionnaires representing one of three experimental conditions, one control condition (no-priming) and two priming conditions (source-priming and relation-priming). Before any other data was analyzed, the range of total weekly television viewing estimates was divided into thirds. Eighty-two participants whose weekly television viewing equaled 0 to 17.5 hours were listed in the bottom third and labeled light viewers; 82 participants whose weekly television viewing equaled 18 to 34.5 hours were listed in the middle third and labeled moderate viewers; 83 participants whose weekly television viewing equaled 35.5 to 128 hours were listed in the top third and labeled heavy viewers.

The remaining 83 participants whose weekly television viewing equaled 18 to 34.5 hours were listed in the middle third and labeled moderate viewers. This finding is consistent with a 2006 study by Nielsen Media Research, which found that the average time an individual spent watching television during the 2005-2006 television year was about 32 hours per week. Moderate viewers' data was not included in this study, which is designed to analyze the differences between heavy and light television viewers. The remaining sample included 82 heavy viewers and 82 light viewers (N = 164).

An Independent-Samples t-Test revealed a statistically significant difference in the mean of television viewing hours watched per week by heavy television viewers and

light television viewers ( $t = -22.99, p = .00, p < .05$ ). As illustrated by Table 4, light viewers' mean number of viewing hours per week was 8.48; heavy viewers' mean of viewing hours per week was 50.78.

**Table 4: Television Viewing Level Statistics**

	TV Viewing Level	N	Mean Number of Viewing Hours per Week	Std. Deviation	Std. Error Mean
Total Weekly TV Viewing	Light TV Viewing	82	8.476	5.6617	.6252
	Heavy TV Viewing	82	50.780	15.6746	1.7310

The median age of the participants was 19 years with a nine-year age range between 18 and 27 years. There were 44 male participants and 120 female participants. Since moderate viewers' data was thrown out, there was an unequal number of usable questionnaires in each of the three experimental conditions. As illustrated by Table 5, there were 53 no-priming questionnaires, 66 source-priming questionnaires, and 45 relation-priming questionnaires.

**Table 5: Frequency of Experimental Conditions**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No-Priming	53	32.3	32.3	32.3
	Source-Priming	66	40.2	40.2	72.6
	Relation-Priming	45	27.4	27.4	100.0
	Total	164	100.0	100.0	

## Cultivation Within Priming Conditions

Hypothesis one (H1), hypothesis two (H2), and hypothesis three (H3) were examined through an analysis of the responses to one open-ended item that measured participant's perceived size of the national population of people 65+. Specifically, the item was as follows: What percent (between 0% and 100%) of the total current United States population is age 65+?

**Table 6: H1, H2, & H3 Statistics**

**Dependent Variable: What percent (between 0% and 100%) of the total current population is 65+?**

Experimental Condition	TV Viewing Level	Mean	Std. Deviation	N
No-Priming	Light TV Viewing	34.31	10.641	29
	Heavy TV Viewing	36.42	18.252	24
	Total	35.26	14.472	53
Source-Priming	Light TV Viewing	31.24	11.478	33
	Heavy TV Viewing	36.48	13.300	33
	Total	33.86	12.606	66
Relation-Priming	Light TV Viewing	30.00	12.994	20
	Heavy TV Viewing	33.75	13.957	24
	Total	32.05	13.504	44
Total	Light TV Viewing	32.02	11.573	82
	Heavy TV Viewing	35.65	14.969	81
	Total	33.83	13.451	163

H1 predicted that in the no-priming condition, heavy television viewers would report lower estimates of the percentage of people age 65+ in the U.S. population than light television viewers. As illustrated by Table 6, in the no-priming condition, the mean of light television viewers' estimates was 34%, and the mean of heavy television viewers' estimates was 36%. An Independent Samples t-Test did not reveal a statistically

significant difference in the mean of light and heavy viewers' estimates of the percentage of people age 65+ in the U.S. population ( $t = -.50$ ,  $p = .62$ ,  $p > .05$ ). H1 was not supported.

H2 and H3 predicted that heavy television viewers and light television viewers would report comparable estimates of the percentage of people age 65+ in the U.S. population in the source-priming and relation-priming conditions, respectively. As illustrated by Table 6, in the source-priming condition, the mean of light television viewers' estimates was 31%, and the mean of heavy television viewers' estimates was 36%. An Independent Samples t-Test did not reveal a statistically significant difference in the mean of light and heavy viewers' estimates of the percentage of people age 65+ in the U.S. population ( $t = -1.71$ ,  $p = .09$ ,  $p > .05$ ). Since the difference between the means of heavy viewers' estimates and light viewers' estimates was not statistically significant, the two groups' estimates were comparable in the source-priming condition. H2 was supported.

As illustrated by Table 6, in the relation-priming condition, the mean of light television viewers' estimates was 30%, and the mean of heavy television viewers' estimates was 34%. An Independent Samples t-Test did not reveal a statistically significant difference in the mean of light and heavy viewers' estimates of the percentage of people age 65+ in the U.S. population ( $t = -.92$ ,  $p = .37$ ,  $p > .05$ ). Since the difference between the means of heavy viewers' estimates and light viewers' estimates was not statistically significant, the two groups' estimates were comparable in the relation-priming condition. H3 was supported.

Hypothesis four (H4), hypothesis five (H5), and hypothesis six (H6) were examined through an analysis of the responses to 12 Likert-type scale items that measured participants' perceptions of people 65+ as sexless, insignificant, and comical. Four items were created to measure these three constructs for the purpose of creating three indexes: a sexless index, an insignificant index, and a comical index. However, Cronbach's Alpha testing revealed low interitem reliability among the items used to measure perceptions of people 65+ as sexless ( $\alpha = .63$ ,  $M = 2.95$ ,  $SD = .70$ ), insignificant ( $\alpha = .40$ ,  $M = 2.21$ ,  $SD = .55$ ), and comical ( $\alpha = .27$ ,  $M = 3.36$ ,  $SD = .52$ ). These numbers were lower than the lowest acceptable value for Cronbach's Alpha in social science research, .70; therefore, the three indexes were not created because the alphas showed that the three constructs—sexless, insignificant, and comical—were multidimensional, not one-dimensional. Instead, each of the four items that were created to measure the three constructs were tested individually.

H4, which predicted that in the no-priming condition, heavy television viewers would report less favorable perceptions of people age 65+ than light television viewers, was based on three propositions. The first proposition (P1) of H4 predicted that a greater proportion of the heavy television viewers than the light television viewers would perceive people age 65+ to be sexless. The following items were used: 1) People 65+ are not sexually active; 2) People 65+ are sexually aroused; 3) People 65+ are not sexually passionate; and 4) People 65+ are not seductive.

An Independent Samples t-Test did not reveal a statistically significant difference in the mean of heavy viewers' and light viewers' perceptions of people 65+ as "not sexually active" ( $t = -.14$ ,  $p = .89$ ,  $p > .05$ ), "not sexually passionate" ( $t = .81$ ,  $p = .51$ ,  $p >$

.05), and “not seductive” ( $t = 1.87, p = .07, p > .05$ ). However, as illustrated by Table 7, the test did reveal a statistically significant difference in heavy viewers’ mean perception (4.50) and light viewers’ mean perception (3.86) of people 65+ as “not sexually attractive” ( $t = -2.35, p = .03, p < .05$ ). Since the difference between the means of heavy viewers’ and light viewers’ perceptions was only statistically significant for one of the four items used to measure the sexless construct, P1 of H4 was only partially supported.

**Table 7: H4-P1 t-Test for No-Priming**

	t-Test for Equality of Means						
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
People 65+ are not sexually attractive.	-2.346	48	.023	-.638	.272	-1.184	-.091

The second proposition (P2) of H4 predicted that a greater proportion of the heavy television viewers than the light television viewers would perceive people age 65+ to be insignificant. The following items were used: 1) People 65+ are insignificant in society; 2) People 65+ are not successful in society; 3) People 65+ are thriving members of society; and 4) People 65+ are forgotten by society.

An Independent Samples t-Test did not reveal a statistically significant difference in the mean of heavy viewers’ and light viewers’ perceptions of people 65+ as “insignificant in society” ( $t = -.19, p = .85, p > .05$ ), “not successful in society” ( $t = 1.14, p = .26, p > .05$ ), “not thriving members of society” ( $t = .12, p = .91, p > .05$ ), or “forgotten by society” ( $t = .48, p = .63, p > .05$ ). Since the difference between the means

of heavy viewers' and light viewers' perceptions was not statistically significant for any of the four items used to measure the insignificant construct, P2 of H4 was not supported.

The third proposition (P3) of H4 predicted that a greater proportion of the heavy television viewers than the light television viewers would perceive people age 65+ to be comical. The following items were used: 1) People 65+ are comical; 2) People 65+ are laughed at; 3) People 65+ are not amusing; and 4) People 65+ are unintentionally funny.

An Independent Samples t-Test did not reveal a statistically significant difference in the mean of heavy viewers' and light viewers' perceptions of people 65+ as "comical" ( $t = -.14, p = .89, p > .05$ ), "laughed at" ( $t = .81, p = .51, p > .05$ ), "amusing" ( $t = 1.87, p = .07, p > .05$ ), and "unintentionally funny" ( $t = -2.26, p = .03, p < .05$ ). Since the difference between the means of heavy viewers' and light viewers' perceptions was not statistically significant for any of the four items used to measure the comical construct, P3 of H4 was not supported.

P1 of H4 was only partially supported; P2 of H4 was not supported; P3 of H4 was not supported. Overall, H4 was only partially supported for the sexless construct, and it was not supported at all for the insignificant and comical constructs.

H5 predicted that in the source-priming condition, heavy television viewers and light television viewers would report comparable perceptions of people age 65+. An Independent Samples t-Test did not reveal a statistically significant difference in the mean of heavy viewers' and light viewers' perceptions of people 65+ for 10 of the 12 items used to measure the three constructs—sexless, insignificant, and comical. Thus, as illustrated by Table 8, the test did reveal a statistically significant difference between heavy viewers' mean perception (2.79) and light viewers' mean perception (3.45) of

people 65+ as “not seductive” ( $t = 2.56, p = .01, p < .05$ ) and a statistically significant difference in heavy viewers’ mean perception (3.45) and light viewers’ mean perception (3.00) of people 65+ as “unintentionally funny” ( $t = -2.01, p = .05, p = .05$ ). Since the difference between the means of heavy viewers’ and light viewers’ perceptions of people 65+ was not statistically significant for only 10 of the 12 items, the two groups’ estimates were not entirely comparable in the source-priming condition. H5 was only partially supported.

**Table 8: H5 t-Test for Source-Priming**

	t-Test for Equality of Means						
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
People 65+ are not seductive.	2.559	64	.013	.667	.261	.146	1.187
People 65+ are unintentionally funny.	-2.007	64	.049	-.455	.227	-.907	-.002

H6 predicted that in the relation-priming condition, heavy television viewers and light television viewers would report comparable perceptions of people age 65+. An Independent Samples t-Test did not reveal a statistically significant difference in the mean of heavy viewers’ and light viewers’ perceptions of people 65+ for 11 of the 12 items used to measure the three constructs—sexless, insignificant, and comical. Thus, as illustrated by Table 9, the test did reveal a statistically significant difference in heavy viewers’ mean perception (2.52) and light viewers’ mean perception (1.85) of people 65+ as “not sexually passionate” ( $t = -2.35, p = .02, p < .05$ ). Since the difference between the means of heavy viewers’ and light viewers’ perceptions of people 65+ was not



statistically significant for only 11 of the 12 items, the two groups' estimates were not entirely comparable in the relation-priming condition. H6 was only partially supported.

**Table 9: H6 t-Test for Relation-Priming**

	t-Test for Equality of Means						
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
People 65+ are not sexually passionate.	-2.351	43	.023	-.670	.285	-1.245	-.095

### Cultivation Across Other Pre-Existing Conditions

Hypothesis seven (H7) and hypothesis eight (H8) analyzed heavy television viewers in the no-priming condition (N = 24) to determine the effect that perceived reality of television would have on their estimates of the percentage of people age 65+ in the U.S. population and their perceptions of people 65+ as sexless, insignificant, and comical.

Five Likert-type scale items measured participants' perceived reality of television. The following items were used: 1) Television shows life as it really is; 2) Television presents things as they really are in life; 3) If I see something on television I can be sure it really is that way; 4) Television lets me see how other people live; and 4) Television lets me see what happens in other places as if I'm really there. Cronbach's Alpha testing revealed acceptable interitem reliability among the five items ( $\alpha = .71$ ,  $M = 2.18$ ,  $SD = .59$ ). Therefore, a perceived reality index for the five items was created.

A median split ( $Mdn = 2.40$ ) was used to differentiate high versus low perceived reality. Any case with an index score in the range of 1.00-2.40 was assigned to the low

perceived reality category (N = 14); any case with an index score in the range of 2.41-5.00 was assigned to the high perceived reality category (N = 10).

An Independent-Samples t-Test revealed a statistically significant difference in the index score means of the two perceived reality groups ( $t = -5.36, p = .00, p < .05$ ). As illustrated by Table 10, participants with low perceived reality had a mean score of 2.14 on the perceived reality index; participants with high perceived reality had a mean score of 2.94 on the perceived reality index.

**Table 10: Perceived Reality Level Statistics**

	Perceived Reality Level	N	Mean	Std. Deviation	Std. Error Mean
Perceived Reality Index	Low Perceived Reality	14	2.1429	.37970	.10148
	High Perceived Reality	10	2.9400	.32728	.10349

H7 predicted that in the no-priming condition, heavy television viewers with high perceived reality would report lower estimates of the percentage of people age 65+ in the U.S. population than heavy viewers with low perceived reality. Participants with low perceived reality had a mean estimate of 34%, and participants with high perceived reality had a mean estimate of 40%. An Independent Samples t-Test did not reveal a statistically significant difference in the two perceived reality groups' mean estimates of the percentage of people age 65+ in the U.S. population ( $t = -.85, p = .40, p > .05$ ). H7 was not supported.

H8, which predicted that in the no-priming condition, heavy television viewers with high perceived reality would report less favorable perceptions of people age 65+ than heavy viewers with low perceived reality, was based on three propositions. The first

proposition (P1) of H8 predicted that a greater proportion of heavy television viewers with high perceived reality than heavy viewers with low perceived reality would perceive people age 65+ to be sexless.

An Independent Samples t-Test did not reveal a statistically significant difference in the mean of the two perceived reality groups' perceptions of people 65+ as "not sexually active" ( $t = -.15, p = .88, p > .05$ ), "not sexually attractive" ( $t = -.52, p = .61, p > .05$ ), "not sexually passionate" ( $t = -.09, p = .93, p > .05$ ), and "not seductive" ( $t = .66, p = .52, p > .05$ ). Since the difference between the means of the two perceived reality groups' perceptions was not statistically significant for any of the four items used to measure the sexless construct, P1 of H8 was not supported.

The second proposition (P2) of H8 predicted that a greater proportion of heavy television viewers with high perceived reality than heavy viewers with low perceived reality would perceive people age 65+ to be insignificant.

An Independent Samples t-Test did not reveal a statistically significant difference in the mean of the two perceived reality groups' perceptions of people 65+ as "insignificant in society" ( $t = .51, p = .61, p > .05$ ), "not successful in society" ( $t = .21, p = .84, p > .05$ ), "not thriving members of society" ( $t = -.74, p = .47, p > .05$ ), or "forgotten by society" ( $t = -.39, p = .70, p > .05$ ). Since the difference between the means of the two perceived reality groups' perceptions was not statistically significant for any of the four items used to measure the insignificant construct, P2 of H8 was not supported.

The third proposition (P3) of H8 predicted that a greater proportion of heavy television viewers with high perceived reality than heavy viewers with low perceived reality would perceive people age 65+ to be comical.

An Independent Samples t-Test did not reveal a statistically significant difference in the two perceived reality groups' perceptions of people 65+ as "laughed at" ( $t = -.29, p = .77, p > .05$ ), "amusing" ( $t = -.45, p = .67, p > .05$ ), and "unintentionally funny" ( $t = -.66, p = .52, p > .05$ ). However, as illustrated by Table 11, the test did reveal a statistically significant difference in high perceived reality participants' mean perception (4.00) and low perceived reality participants' mean perception (2.71) of people 65+ as "comical" ( $t = -3.55, p = .00, p < .05$ ). Since the difference between the means of the two perceived reality groups' perceptions was only statistically significant for one of the four items used to measure the comical construct, P3 of H8 was only partially supported.

**Table 11: H8-P3 t-Test**

t-Test for Equality of Means							
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
People 65+ are comical.	-3.547	22	.002	-1.286	.362	-2.037	-.534

P1 of H8 was not supported; P2 of H8 was not supported; P3 of H8 was only partially supported. Overall, H8 was only partially supported for the comical construct, and it was not supported at all for the sexless and insignificant constructs.

Hypothesis nine (H9) and hypothesis 10 (H10) analyzed heavy television viewers in the no-priming condition ( $N = 24$ ) to determine the effect that direct experience with people 65+ would have on their estimates of the percentage of people age 65+ in the U.S. population and their perceptions of people 65+ as sexless, insignificant, and comical.

Three Likert-type scale items measured participants' direct experience with people 65+. The following items were used: 1) I live or have lived with at least one person who is 65+; 2) People 65+ are present in my life; and 3) I frequently interact with people 65+. Cronbach's Alpha testing revealed low interitem reliability among the three items ( $\alpha = .50$ ,  $M = 3.26$ ,  $SD = 1$ ). However, deleting the first item ("I live or have lived with at least one person who is 65+") brought the interitem reliability among the remaining two items ("People 65+ are present in my life" and "I frequently interact with people 65+") up to an acceptable level ( $\alpha = .70$ ) Therefore, a direct experience index for the remaining two items was created.

A median split ( $Mdn = 4.00$ ) was used to differentiate high versus low direct experience. Any case with an index score in the range of 1.00-4.00 was assigned to the low direct experience category ( $N = 13$ ); any case with an index score in the range of 4.01-5.00 was assigned to the high direct experience category ( $N = 11$ ).

An Independent-Samples t-Test revealed a statistically significant difference in the index score means of the two direct experience groups ( $t = -7.12$ ,  $p = .00$ ,  $p < .05$ ). As illustrated by Table 12, participants with low direct experience had a mean score of 2.54 on the direct experience index; participants with high direct experience had a mean score of 4.68 on the direct experience index.

**Table 12: Direct Experience Level Statistics**

	Direct Experience Level	N	Mean	Std. Deviation	Std. Error Mean
Direct Experience Index	Low Direct Experience	13	2.5385	.96742	.26831
	High Direct Experience	11	4.6818	.25226	.07606

H9 predicted that in the no-priming condition, heavy television viewers with high direct experience would report higher estimates of the percentage of people age 65+ in the U.S. population than heavy viewers with low direct experience. Participants with low direct experience had a mean estimate of 31%, and participants with high direct experience had a mean estimate of 43%. An Independent Samples t-Test did not reveal a statistically significant difference in the two direct experience groups' mean estimates of the percentage of people age 65+ in the U.S. population ( $t = -1.61, p = .12, p > .05$ ). H9 was not supported.

H10, which predicted that in the no-priming condition, heavy television viewers with high direct experience would report more favorable perceptions of people age 65+ than heavy viewers with low direct experience, was based on three propositions. The first proposition predicted that a greater proportion of heavy television viewers with low direct experience than heavy viewers with high direct experience would perceive people age 65+ to be sexless.

An Independent Samples t-Test did not reveal a statistically significant difference in the mean of the two direct experience groups' perceptions of people 65+ as "not sexually active" ( $t = 1.91, p = .07, p > .05$ ), "not sexually attractive" ( $t = .26, p = .80, p > .05$ ), "not sexually passionate" ( $t = 1.59, p = .13, p > .05$ ), and "not seductive" ( $t = 1.44, p = .16, p > .05$ ). Since the difference between the means of the two direct experience groups' perceptions was not statistically significant for any of the four items used to measure the sexless construct, P1 of H10 was not supported.

The second proposition predicted that a greater proportion of heavy television viewers with low direct experience than heavy viewers with high direct experience would perceive people age 65+ to be insignificant.

An Independent Samples t-Test did not reveal a statistically significant difference in the mean of the two direct experience groups' perceptions of people 65+ as "not successful in society" ( $t = 1.61, p = .12, p > .05$ ), "not thriving members of society" ( $t = .79, p = .44, p > .05$ ), or "forgotten by society" ( $t = -.10, p = .92, p > .05$ ). However, as illustrated by Table 13, the test did reveal a statistically significant difference in high direct experience participants' mean perception (1.45) and low direct experience participants' mean perception (2.31) of people 65+ as "insignificant in society" ( $t = 2.48, p = .02, p < .05$ ). Since the difference between the means of the two direct experience groups' perceptions was only statistically significant for one of the four items used to measure the insignificant construct, P2 of H10 was only partially supported.

**Table 13: H10-P2 t-Test**

	t-Test for Equality of Means						
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
People 65+ are insignificant in society.	2.481	22	.021	.853	.344	.140	1.566

The third proposition predicted that a greater proportion of heavy television viewers with low direct experience than heavy viewers with high direct experience would perceive people age 65+ to be comical.

An Independent Samples t-Test did not reveal a statistically significant difference in the mean of heavy viewers' and light viewers' perceptions of people 65+ as "comical" ( $t = -1.26, p = .22, p > .05$ ), "laughed at" ( $t = .73, p = .47, p > .05$ ), "amusing" ( $t = .22, p = .83, p > .05$ ), and "unintentionally funny" ( $t = -.44, p = .67, p > .05$ ). Since the difference between the means of the two perceived reality groups' perceptions was not statistically significant for any of the four items used to measure the comical construct, P3 of H10 was not supported.

P1 of H10 was not supported; P2 of H10 was only partially supported; P3 of H10 was not supported. Overall, H10 was only partially supported for the insignificant construct, and it was not supported at all for the sexless and comical constructs.

#### Exploratory Analysis

Exploratory analysis of the data using univariate ANOVA testing revealed one important statistically significant relationship that can be applied to the better understand the results of H1, H2, and H3, which are the three hypotheses concerning estimates of the percentage of people 65+ in the U.S. population. Although the experimental condition variable was not statistically significant ( $F = 4.03, p = .20, p > .05$ ), the television viewing level variable was statistically significant ( $F = 14.19, p = .05$ ). These results are illustrated in Table 14.



**Table 14: H1, H2, & H3 Tests of Between-Subjects Effects**

**Dependent Variable: What percent (between 0% and 100%) of the total current population is 65+?**

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	Hypothesis	178995.654	1	178995.654	331.920	.035	.997
	Error	539.274	1	539.274 <sup>a</sup>			
EXPERIMENTCOND	Hypothesis	290.342	2	145.171	4.032	.199	.801
	Error	72.002	2	36.001 <sup>b</sup>			
TVVIEWLEVEL	Hypothesis	539.274	1	539.274	14.188	.051	.861
	Error	87.136	2.292	38.010 <sup>c</sup>			
EXPERIMENTCOND * TVVIEWLEVEL	Hypothesis	72.002	2	36.001	.199	.820	.003
	Error	28396.843	157	180.872 <sup>d</sup>			

a. MS(TVVIEWLEVEL)

b. MS(EXPERIMENTCOND \* TVVIEWLEVEL)

c. .986 MS(EXPERIMENTCOND \* TVVIEWLEVEL) + .014 MS(Error)

d. MS(Error)

Hence, participants' television viewing level had a significant influence on the participants' estimates of the 65+ population while their assignment to one of the three experimental conditions did not. More significantly, there was no significant interaction effect between the experimental condition and the television viewing level of the participants. This finding compliments the results of the t-Tests for H1, H2, and H3, which did not find a statistically significant difference between heavy viewers' and light viewers' mean estimates of the 65+ population in any of the three experimental conditions but did reveal that heavy viewers' estimates were slightly higher than light viewers' estimates in all three experimental conditions.

Exploratory analysis of the demographic information obtained in this study—sex, age, and grade point average—also revealed an important finding about the relationship between GPA and perceived reality of television. The high GPA participants' (with a

GPA of 3.5 to 4.0) mean score on the perceived reality index (2.27) was higher than the low GPA participants' (with a GPA of 1.8 to 2.7) mean score on the perceived reality index (1.95). As illustrated by Table 15, an Independent Samples t-Test revealed that the difference in the two groups' mean scores on the perceived reality index approaches significance ( $t = -1.94$ ,  $p = .056$ ).

**Table 15: GPA and Perceived Reality t-Test**

	t-Test for Equality of Means						
	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Perceived Reality Index	-1.940	69	.056	-.31545	.16258	-.63979	.00888

## DISCUSSION

### Cultivation Effects

Gerbner and Gross' (1976) cultivation theory posits that people's understanding of the real world results from the cumulative effects of heavy television viewing. The literature on television's depiction of people 65 and older supports the notion that the age group is consistently underrepresented and portrayed as sexless, insignificant, and comical. Hence, heavy viewers were expected to possess these television-like perceptions about the number and nature of people 65+.

Cultivation effects were expected to be observed in the no-priming condition. In this condition, however, heavy television viewers did not report lower estimates of the percentage of people 65+ in the U.S. population than light television viewers. In fact, all of the participants overestimated the 65+ population ( $M = 33\%$ ), but heavy viewers actually reported slightly higher estimates of the 65+ population than light viewers. The difference between the two groups' estimates was not statistically significant, but the results imply that heavy viewers are at least somewhat more likely to overestimate the 65+ population than light viewers.

Hence, the results of this study suggest that when people are not prompted to recognize television as an information source, heavy television viewing does not cultivate them to underestimate the 65+ population in the real world, despite television's gross

underrepresentation of the age group (Gerbner, Gross, Signorielli, & Morgan, 1980; Signorielli, 2004).

It was also expected that in the no-priming condition, heavy television viewers would report less favorable perceptions of the age group than light television viewers, being more likely to identify them as sexless, insignificant, and comical. However, heavy viewers were not significantly more likely than light viewers to perceive people 65+ as “not sexually active,” “not sexually passionate,” “not seductive,” “insignificant in society,” “not successful in society,” “not thriving members of society,” “forgotten by society,” “comical,” “laughed at,” “amusing,” or “unintentionally funny.” This means that heavy viewers’ perceptions of people 65+ were not significantly different from light viewers’ perceptions of people 65+ for three of the four items used to measure the sexless construct, all four items used to measure the insignificant construct, and all four items used to measure the comical construct.

Consequently, the results of this study suggest that when people are not prompted to recognize television as an information source, heavy television viewing does not cultivate them to perceive people 65+ as insignificant or comical in the real world, despite television’s depiction of the age group as such (Cassata & Irwin, 1997; Greenberg, Graef, Fernandez-Collado, Korzenny, & Atkin, 1980; Harwood & Giles, 1992). This is not entirely the case when it comes to the sexless construct, however, because when heavy television viewers are not prompted to recognize television as an information source, heavy viewers were significantly more likely than light viewers to perceive people 65+ as “not sexually attractive.” Hence, the results of this study also suggest that when people are not prompted to recognize television as an information

source, heavy television viewing cultivates them to perceive people 65+ as sexually unattractive.

### Priming Effects

Shrum, Wyer, and O'Guinn (1998) posited that when making a judgment, people do not discount information learned from television because they are unmotivated or unable to identify the source of retrieved information unless prompted to do so.

Participants in the source-priming and relation-priming conditions were prompted to realize that they were calling on television information to answer the questionnaire items about people 65+. This realization was supposed to discourage heuristic processing and encourage systematic processing, which would lead participants to discount television as a viable source of information such that no cultivation effect would be observed (i.e. heavy viewers' perceptions of people 65+ would be comparable to light viewers' perceptions of people 65+).

At first glance, it appears that priming caused this study's participants to discount television information when estimating the percentage of people age 65+ in the U.S. population; heavy television viewers and light television viewers reported comparable estimates of the 65+ population in the source-priming and relation-priming conditions. However, since heavy and light viewers in the no-priming condition also provided comparable estimates of the 65+ population, the priming conditions did not actually have a significant effect on participants' thought processing for this particular item.

It seems that participants in all three conditions, not just in the two priming conditions, employed systematic processing to decide what percentage of the U.S. population is 65+. Therefore, the results of this study suggest that whether people are

prompted to recognize television as an information source, they might discount television information when making judgments about the number of people 65+.

It was also expected that in the source-priming and relation-priming conditions, heavy television viewers and light television viewers would report comparable perceptions of people age 65+. Indeed, in the source-priming condition, heavy viewers' perceptions of people 65+ were not significantly different from light viewers' perceptions of people 65+ for three of the four items used to measure the sexless construct, all four items used to measure the insignificant construct, and three of the four items used to measure the comical construct. However, light viewers were significantly more likely than heavy viewers to perceive people 65+ as "not seductive," and heavy viewers were significantly more likely than light viewers to perceive people 65+ as "unintentionally funny." Likewise, in the relation-priming condition, heavy viewers' perceptions of people 65+ were not significantly different from light viewers' perceptions of people 65+ for three of the four items used to measure the sexless construct, all four items used to measure the insignificant construct, and all four items used to measure the comical construct. However, heavy viewers were significantly more likely than light viewers to perceive people 65+ as "not sexually passionate."

It seems that participants in all three conditions, not just the two priming conditions, employed heuristic processing to make decisions about people 65+ as sexless, insignificant, and comical. Therefore, the results of this study suggest that whether people are prompted to recognize television as an information source, they might count television information when making judgments about the nature of people 65+.

## Effects of Other Pre-Existing Conditions

Hawkins (1977) posited that viewers' perceived reality of television as a potential window to the world affects the degree to which they apply television's values and norms to real life. Therefore, high perceived reality of television was expected to enhance the cultivation effect among heavy viewers in the no-priming condition in this study.

Viewers with high perceived reality of television were expected to be more likely to report television-like perceptions of people 65 and older than viewers with low perceived reality of television.

Participants with high perceived reality did not report lower estimates of the percentage of people age 65+ in the U.S. population than participants with low perceived reality. In fact, participants with high perceived reality actually reported slightly higher estimates of the 65+ population than participants with low perceived reality. The difference between the two group's estimates was not statistically significant, but the results imply that heavy viewers with high perceived reality are at least somewhat more likely to overestimate the 65+ population than heavy viewers with low perceived reality. Hence, the results of this study suggest that perceived reality of television does not have a significant effect on heavy viewers' estimates of the percentage of people age 65+ in the U.S. population.

It was also expected that participants with high perceived reality would report less favorable perceptions of people 65+ than participants with low perceived reality, being more likely to identify them as sexless, insignificant, and comical. However, high perceived reality participants' perceptions of people 65+ were not significantly different from low perceived reality participants' perceptions of people 65+ for all four items used

to measure the sexless construct, all four items used to measure the insignificant construct, and three of the four items used to measure the comical construct.

Hence, the results of this study suggest that perceived reality of television does not have a significant effect on heavy viewers' perceptions of people 65+ as sexless or insignificant. This is not entirely the case when it comes to the comical construct, however, because heavy viewers with high perceived reality were significantly more likely than heavy viewers with low perceived reality to perceive people 65+ as "comical." Hence, the results of this study also suggest that high perceived reality of television encourages heavy viewers to perceive people 65+ as comical.

Hawkins and Pingree (1980) posited that direct experience can serve to disprove television's picture of the world. In this study direct experience with people 65 and older, like perceived reality of television, was expected to influence the cultivation effect among heavy viewers in the no-priming condition in this study. Unlike increased perceived reality, which was expected to enhance television-like perceptions of the number and nature of people 65+, increased direct experience was expected to diminish television-like perceptions of the age group. It was expected that participants with high direct experience with people 65+ would be less likely to have television-like perceptions about the age group than participants with low direct experience with people 65+.

Participants with high direct experience reported slightly higher estimates of the percentage of people age 65+ in the U.S. population than participants with low direct experience, implying that heavy viewers with high direct experience are at least somewhat more likely to provide higher estimates of the 65+ population than heavy viewers with low direct experience. However, the difference between the two group's



estimates was not statistically significant. Hence, the results of this study suggest that high direct experience with people 65+ does not have a significant effect on heavy viewers' estimates of the percentage of people age 65+ in the U.S. population.

It was also expected that participants with high direct experience would report more favorable perceptions of people 65+ than participants with low direct experience, being less likely to identify them as sexless, insignificant, and comical. However, high direct experience participants' perceptions of people 65+ were not significantly different from low direct experience participants' perceptions of people 65+ for all four items used to measure the sexless construct, three of the four items used to measure the insignificant construct, and all four items used to measure the comical construct.

Hence, the results of this study suggest that direct experience with people 65+ does not have a significant effect on heavy viewers' perceptions of people 65+ as sexless or comical. This is not entirely the case when it comes to the insignificant construct, however, because heavy viewers with low direct experience were significantly more likely than heavy viewers with high direct experience to perceive people 65+ as "insignificant in society." Hence, the results of this study also suggest that high direct experience with people 65+ discourages heavy viewers to perceive people 65+ as insignificant in society.

### Limitations of the Study

The most intriguing discovery of this research study also happens to allude to one of the study's limitations: nearly all of the participants overestimated the percentage of people age 65+ in the U.S. population. The mean estimate was 33%, and the estimates

ranged from 10% to 80%. The U.S. Census Bureau (2006) estimates that in 2006, 12.4% of the U.S. population was 65 and older. Only three out of the 164 participants in this study underestimated the percentage of people 65+ in the U.S. population; their estimate was 10%.

The U.S. Census Bureau's (2006) estimate for the 65+ population in the state of Florida, however, is 16.8%, which means that the percentage of people 65+ in Florida is 4.4% higher than the national estimate. Still, only 10 participants estimated the U.S. population of people 65+ to be between 12.4% (U.S. estimate of 65+ population percentage) and 16.8% (Florida estimate of 65+ population percentage); two participants estimated it to be 13%, and eight participants estimated it to be 15%.

It is possible that this study's participants had a Floridian bias that caused them to overestimate the 65+ population, especially in light of the fact that the questionnaires were administered during a winter month when many people 65+ temporarily reside in Florida due to the warm climate. This potential bias could explain why the heavy television viewers in this study provided higher estimates of the percentage of people 65+ in the U.S. population than the light television viewers. It seems reasonable to assume that television content reflects the demographics of its audience, and since Florida has a larger 65+ population, more people 65+ might appear on television in Florida than in other states. This is especially plausible when it comes to television commercials featuring people 65+ in advertisements for health-related products and services, retirement communities, nursing homes, etc. Since heavy viewers watch more television than light viewers, they might also watch these types of commercials more than light viewers and be more likely to overestimate the 65+ population in the real world.

This study's participants had something else in common that could have influenced the results—they were all enrolled in a mass communications course where they were learning about various forms of mass media, including television. It is possible that the participants were already sensitized to recognize that television might influence their perceptions about the real world. This potential sensitization could explain why participants in this study discounted television information when making judgments about the number of people 65+.

Further, this study's sample had far more female participants (120) than male participants (44), which could have influenced the results. What's more, throwing out the data of all the participants who were deemed moderate television viewers caused there to be an unequal number of usable questionnaires in each of the three experimental conditions; there were 53 no-priming questionnaires, 66 source-priming questionnaires, and 45 relation-priming questionnaires. The results of this study might have been different if quota sampling had been used in the data collection process (i.e., if the study required a total of 50 of each type of questionnaire).

Finally, another limitation to the study was that the 12 Likert-type scale items used to measure participants' perceptions of people 65+ were not founded on previous research on this topic because an extensive review of the literature did not uncover any survey items that could be used to measure the sexless, insignificant, and comical constructs. The 12 Likert-type items were entirely original, and as a result, suffered low interitem reliability. Hence, an index could not be created for any of the three constructs because the Cronbach's Alpha numbers were too low, revealing that the three constructs were multidimensional, not one-dimensional. Hence, each of the four items that were

created to measure the three constructs had to be tested individually, which did not provide rich data concerning the participant's overall perceptions of people 65+ as sexless, insignificant, and comical.

## CONCLUSION

The results of this study suggest that when people are not prompted to recognize television as an information source, heavy television viewing does not cultivate them to underestimate the 65+ population or to perceive people 65+ as insignificant or comical in the real world; under this circumstance, however, heavy television viewing does cultivate them to perceive people 65+ as “not sexually attractive.” Hence, heavy exposure to television’s underrepresentation and negative portrayal of people 65+ as sexless, insignificant, and comical does not appear to cause people to assume such television-like perceptions of the age group in the real world. Cultivation theory (Gerbner and Gross, 1976) has been supported by studies dedicated to many television-related topics—violence, gender roles, divorce rates, etc.—but in this study, it was only supported in the no-priming condition by the fact that heavy viewers were significantly more likely than light viewers to perceive people 65+ as “not sexually attractive.”

It is interesting to note that cultivation effects were also observed in the priming conditions. Heavy viewers reported more television-like perception of people 65+ for the “sexless” and “comical” constructs, but not for the “insignificant” construct. In the source-priming condition, heavy viewers were significantly more likely than light viewers to perceive people 65+ as “unintentionally funny,” and in the relation-priming condition, heavy viewers were significantly more likely than light viewers to perceive people 65+ as “not sexually passionate.” Thus, although cultivation was not expected in either of the priming conditions, the presence of these two effects’ presence provides

further support for the proposition that television might be cultivating heavy television viewers to perceive people 65+ as sexless and comical.

It appears that Shrum, Wyer, and O'Guinn's (1998) findings might be limited to television's cultivation of perceptions about crime and occupations. Applying their methodology to this study's analysis of perceptions of people 65+ did not reveal similar results. Shrum et al.'s (1998) research found that priming conditions moderated the extent to which viewers would report television-like perceptions of the real world; in the no-priming condition, heavy television viewers' perceptions of crime and occupations were more television-like than the light television viewers' perceptions, and in the source-priming and relation-priming condition, a cultivation effect was not observed. In this study, however, cultivation effects were not observed in any of the three conditions in terms of participants' perceptions of the size of the 65+ population, but they were observed in all three conditions in terms of participants' perceptions of people 65+.

This study's results also suggest that perceived reality of television does not have a significant effect on heavy viewers' estimates of the percentage of people age 65+ in the U.S. population or their perceptions of people 65+ as sexless or insignificant; however, high perceived reality of television encourages heavy viewers to perceive people 65+ as "comical," which implies that when heavy viewers believe that television paints a realistic picture of the world, they are more likely to be cultivated by television's characterization of people 65+ as a subject of amusement because of their irrational and eccentric behavior.

Further, the results of this study suggest that high direct experience with people 65+ does not have a significant effect on heavy viewers' estimates of the percentage of

people age 65+ in the U.S. population or their perceptions of people 65+ as sexless or comical; however, high direct experience with people 65+ discourages heavy viewers to perceive people 65+ as “insignificant in society.” Hence, it appears that when heavy viewers have real life experiences with people 65+, they perceive them to be more significant members of our society.

In conclusion, the results of this study revealed six major findings concerning the relationship between the independent variables in this study—television viewing level, priming, perceived reality of television, and direct experience with people 65+—and the dependent variables, viewer perceptions of the number and nature of people 65+.

First, heavy television viewing does not cultivate viewers to underestimate the 65+ population in the U.S.; second, heavy television viewing cultivates viewers to perceive people 65+ as sexless (specifically, “not sexually attractive” and “not sexually passionate”) and comical (specifically, “unintentionally funny”); third, priming is not necessary to induce source discounting of television information for judgment-making about the number and nature of the elderly in the real world; fourth, whether people are prompted to recognize television as an information source, they will discount television information when making judgments about the number of people 65+, and they will count television information when making judgments about the nature of people 65+; fifth, high perceived reality of television encourages heavy viewers to perceive people 65+ as “comical”; sixth, high direct experience with people 65+ discourages heavy viewers to perceive people 65+ as “insignificant in society.”

## Directions for Future Research

The results of this study suggest that future research on television's cultivation of perceptions of people 65+ in the real world should focus on perceptions of the age group as sexless and comical. However, future studies concerning direct experience with people 65+ should focus on perceptions of the age group as insignificant in society, and future studies concerning perceived reality of television should focus on perceptions of people 65+ as comical. Since exploratory analysis revealed that in this study, participants with higher grade point averages actually had higher perceived reality levels, future studies that consider television viewers' perceived reality of the medium should attempt to discover whether increased GPA is truly indicative of increased perceived reality of television, which counters the assumption that people with higher GPA's are smarter and more likely to realize that television does not always depict the world as it really is.

It is not suggested that Shrum, Wyer, and O'Guinn's (1998) priming conditions be used to study the topic of old-age on television. Priming conditions did not moderate the cultivation effect in this study, and exploratory analysis revealed that there was not a significant interaction effect between the experimental condition and participants' television viewing level. Further research should be conducted, however, to determine whether people will generally discount television information when making judgments about the set size of a group (e.g. in this study, "the total current percentage of people 65+ in the U.S. population") and count television information when making judgments about the characteristics of a group (e.g. in this study, "people 65+ as sexless, insignificant, and comical").



Finally, future research is needed for the creation of a set of internally-reliable items that can be indexed and used to measure television viewers' perceptions of people 65+ as sexless, insignificant, and comical in order to provide one-dimensional data concerning the concerning people's overall perceptions of the age group.

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## Appendices

Appendix A: No-Priming Questionnaire

QUESTIONNAIRE

This questionnaire has been composed by a graduate student at the University of South Florida as part of a research study on perceptions of United States residents age 65 and older (65+). Your answers are guaranteed to remain absolutely confidential and the questionnaire will only take about 10 minutes to complete.

SECTION I:

Please write your response on the given line.

1. What percent (between 0% and 100%) of the current U.S. population is age 65+?

\_\_\_\_\_

SECTION II:

Please write the corresponding number for your response to each statement on the given line. Use the following rating scale:

1 = Strongly Disagree   2 = Disagree   3 = Undecided   4 = Agree   5 = Strongly Agree

- \_\_\_\_\_ 2. People 65+ are not sexually active.
- \_\_\_\_\_ 3. People 65+ are insignificant in society.
- \_\_\_\_\_ 4. People 65+ are comical.
- \_\_\_\_\_ 5. People 65+ are sexually attractive.
- \_\_\_\_\_ 6. People 65+ are not successful in society.
- \_\_\_\_\_ 7. People 65+ are laughed at.
- \_\_\_\_\_ 8. People 65+ are not sexually passionate.
- \_\_\_\_\_ 9. People 65+ are thriving members of society.
- \_\_\_\_\_ 10. People 65+ are not amusing.
- \_\_\_\_\_ 11. People 65+ are not seductive.
- \_\_\_\_\_ 12. People 65+ are forgotten by society.
- \_\_\_\_\_ 13. People 65+ are unintentionally funny.

SECTION III:

Please write your response on the given line or place a check mark on the appropriate line.

- 14. What is your sex? \_\_\_\_\_ Male   \_\_\_\_\_ Female
- 15. What is your age? \_\_\_\_\_
- 16. What is your current GPA to the nearest tenth? \_\_\_\_\_
- 17. On an average weekday morning, how many hours of television do you watch?  
\_\_\_\_\_
- 18. On an average weekday afternoon, how many hours of television do you watch?  
\_\_\_\_\_

Appendix A: No-Priming Questionnaire (continued)

19. During prime time on an average weekday, how many hours of television do you watch? \_\_\_\_\_
20. During late night on an average weekday, how many hours of television do you watch? \_\_\_\_\_
21. On an average Saturday, how many hours of television do you watch? \_\_\_\_\_
22. On an average Sunday, how many hours of television do you watch? \_\_\_\_\_

SECTION IV:

Please write the corresponding number for your response to each statement on the given line. Use the following rating scale:

1 = Strongly Disagree   2 = Disagree   3 = Undecided   4 = Agree   5 = Strongly Agree

- \_\_\_\_\_ 23. Television shows life as it really is.
- \_\_\_\_\_ 24. Television presents things as they really are in life.
- \_\_\_\_\_ 25. If I see something on television I can be sure it really is that way.
- \_\_\_\_\_ 26. Television lets me see how other people live.
- \_\_\_\_\_ 27. Television lets me see what happens in other places as if I'm really there.

SECTION V:

Please write the corresponding number for your response to each statement on the given line. Use the following rating scale:

1 = Strongly Disagree   2 = Disagree   3 = Undecided   4 = Agree   5 = Strongly Agree

- \_\_\_\_\_ 28. I live or have lived with at least one person who is 65+.
- \_\_\_\_\_ 29. People 65+ are present in my life.
- \_\_\_\_\_ 30. I frequently interact with people 65+.

Thank you. Have a nice day.

## Appendix B: Source-Priming Questionnaire

### QUESTIONNAIRE

This questionnaire has been composed by a graduate student at the University of South Florida as part of a research study on perceptions of United States residents age 65 and older (65+). Your answers are guaranteed to remain absolutely confidential and the questionnaire will only take about 10 minutes to complete.

#### SECTION I:

Please write your response on the given line or place a check mark on the appropriate line.

1. What is your sex? \_\_\_\_\_ Male \_\_\_\_\_ Female
2. What is your age? \_\_\_\_\_
3. What is your current GPA to the nearest tenth? \_\_\_\_\_
4. On an average weekday morning, how many hours of television do you watch?  
\_\_\_\_\_
5. On an average weekday afternoon, how many hours of television do you watch?  
\_\_\_\_\_
6. During prime time on an average weekday, how many hours of television do you watch? \_\_\_\_\_
7. During late night on an average weekday, how many hours of television do you watch? \_\_\_\_\_
8. On an average Saturday, how many hours of television do you watch? \_\_\_\_\_
9. On an average Sunday, how many hours of television do you watch? \_\_\_\_\_

#### SECTION II:

Please write the corresponding number for your response to each statement on the given line. Use the following rating scale:

1 = Strongly Disagree   2 = Disagree   3 = Undecided   4 = Agree   5 = Strongly Agree

- \_\_\_\_\_ 10. Television shows life as it really is.
- \_\_\_\_\_ 11. Television presents things as they really are in life.
- \_\_\_\_\_ 12. If I see something on television I can be sure it really is that way.
- \_\_\_\_\_ 13. Television lets me see how other people live.
- \_\_\_\_\_ 14. Television lets me see what happens in other places as if I'm really there.

#### SECTION III:

Please write your response on the given line.

15. What percent (between 0% and 100%) of the current U.S. population is age 65+?  
\_\_\_\_\_

Appendix B: Source-Priming Questionnaire (continued)

SECTION IV:

Please write the corresponding number for your response to each statement on the given line. Use the following rating scale:

1 = Strongly Disagree   2 = Disagree   3 = Undecided   4 = Agree   5 = Strongly Agree

- \_\_\_\_\_ 16. People 65+ are not sexually active.
- \_\_\_\_\_ 17. People 65+ are insignificant in society.
- \_\_\_\_\_ 18. People 65+ are comical.
- \_\_\_\_\_ 19. People 65+ are sexually attractive.
- \_\_\_\_\_ 20. People 65+ are not successful in society.
- \_\_\_\_\_ 21. People 65+ are laughed at.
- \_\_\_\_\_ 22. People 65+ are not sexually passionate.
- \_\_\_\_\_ 23. People 65+ are thriving members of society.
- \_\_\_\_\_ 24. People 65+ are not amusing.
- \_\_\_\_\_ 25. People 65+ are not seductive.
- \_\_\_\_\_ 26. People 65+ are forgotten by society.
- \_\_\_\_\_ 27. People 65+ are unintentionally funny.

SECTION V:

Please write the corresponding number for your response to each statement on the given line. Use the following rating scale:

1 = Strongly Disagree   2 = Disagree   3 = Undecided   4 = Agree   5 = Strongly Agree

- \_\_\_\_\_ 28. I live or have lived with at least one person who is 65+.
- \_\_\_\_\_ 29. People 65+ are present in my life.
- \_\_\_\_\_ 30. I frequently interact with people 65+.

Thank you. Have a nice day.

## Appendix C: Relation-Priming Questionnaire

***\*\*\*READ THIS BEFORE YOU CONTINUE\*\*\****

In order to answer these questions, you will use information from a variety of sources, including television. You should be aware that people age 65 and older (65+) are underrepresented on television compared to their actual percentage in the population. The age group is also negatively portrayed on television. Consequently, people often use this information to formulate answers.



Appendix C: Relation-Priming Questionnaire (continued)

QUESTIONNAIRE

This questionnaire has been composed by a graduate student at the University of South Florida as part of a research study on perceptions of United States residents age 65 and older (65+). Your answers are guaranteed to remain absolutely confidential and the questionnaire will only take about 10 minutes to complete.

SECTION I:

Please write your response on the given line.

1. What percent (between 0% and 100%) of the current U.S. population is age 65+?

\_\_\_\_\_

SECTION II:

Please write the corresponding number for your response to each statement on the given line. Use the following rating scale:

1 = Strongly Disagree   2 = Disagree   3 = Undecided   4 = Agree   5 = Strongly Agree

- \_\_\_\_\_ 2. People 65+ are not sexually active.  
\_\_\_\_\_ 3. People 65+ are insignificant in society.  
\_\_\_\_\_ 4. People 65+ are comical.  
\_\_\_\_\_ 5. People 65+ are sexually attractive.  
\_\_\_\_\_ 6. People 65+ are not successful in society.  
\_\_\_\_\_ 7. People 65+ are laughed at.  
\_\_\_\_\_ 8. People 65+ are not sexually passionate.  
\_\_\_\_\_ 9. People 65+ are thriving members of society.  
\_\_\_\_\_ 10. People 65+ are not amusing.  
\_\_\_\_\_ 11. People 65+ are not seductive.  
\_\_\_\_\_ 12. People 65+ are forgotten by society.  
\_\_\_\_\_ 13. People 65+ are unintentionally funny.

SECTION III:

Please write your response on the given line or place a check mark on the appropriate line.

14. What is your sex? \_\_\_\_\_ Male   \_\_\_\_\_ Female  
15. What is your age? \_\_\_\_\_  
16. What is your current GPA to the nearest tenth? \_\_\_\_\_  
17. On an average weekday morning, how many hours of television do you watch?  
\_\_\_\_\_  
18. On an average weekday afternoon, how many hours of television do you watch?  
\_\_\_\_\_

Appendix C: Relation-Priming Questionnaire (continued)

19. During prime time on an average weekday, how many hours of television do you watch? \_\_\_\_\_
20. During late night on an average weekday, how many hours of television do you watch? \_\_\_\_\_
21. On an average Saturday, how many hours of television do you watch? \_\_\_\_\_
22. On an average Sunday, how many hours of television do you watch? \_\_\_\_\_

SECTION IV:

Please write the corresponding number for your response to each statement on the given line. Use the following rating scale:

1 = Strongly Disagree   2 = Disagree   3 = Undecided   4 = Agree   5 = Strongly Agree

- \_\_\_\_\_ 23. Television shows life as it really is.
- \_\_\_\_\_ 24. Television presents things as they really are in life.
- \_\_\_\_\_ 25. If I see something on television I can be sure it really is that way.
- \_\_\_\_\_ 26. Television lets me see how other people live.
- \_\_\_\_\_ 27. Television lets me see what happens in other places as if I'm really there.

SECTION V:

Please write the corresponding number for your response to each statement on the given line. Use the following rating scale:

1 = Strongly Disagree   2 = Disagree   3 = Undecided   4 = Agree   5 = Strongly Agree

- \_\_\_\_\_ 28. I live or have lived with at least one person who is 65+.
- \_\_\_\_\_ 29. People 65+ are present in my life.
- \_\_\_\_\_ 30. I frequently interact with people 65+.

Thank you. Have a nice day.