Mention the subject of television effects to consumer psychologists and they would likely assume you are referring to advertising. With only a few exceptions (e.g., Russell, Norman, & Heckler, 2004), most consumer research has focused on understanding how advertising works and what makes it effective. However, these are intended effects. What have gone relatively unnoticed in consumer research are the unintended effects of television viewing, particularly the effects of the programs between the ads. Certainly, social psychologists are well aware of these types of effects, particularly for the effects of media violence (Bushman & Anderson, 2001; Wood, Wong, & Chachere, 1991) and explicit sexual portrayals (Donnerstein & Berkowitz, 1981; Malamuth & Impett, 2001). However, what have for the most part escaped attention are the more subtle effects of the narrative or “storytelling” aspect of television programs.

In this chapter, I discuss research that investigates the effects of television viewing on a range of judgments, including social perceptions, attitudes, values, and beliefs. This research looks at how television often portrays a very distorted and circumscribed view of reality and the consequent effects of frequent viewing of these distortions. In addition, the chapter provides a particular focus on understanding the psychological mechanisms that underlie this effect. Although the notion that frequent television viewing would affect the attitudes and social perceptions of viewers may seem intuitively obvious, demonstrating this effect has been remarkably difficult (McGuire, 1986). Much like the research on media violence and aggression, it has been plagued by relatively small effect sizes, some inconsistencies across studies, and until recently a general lack of a clear theoretical model that can explain the underlying psychological mechanisms. The goal of
this chapter is to elaborate on these explanatory mechanisms, and in doing so to reconcile some of the disparate findings from previous research.

**CULTIVATION THEORY AND RESEARCH**

The vast amount of research that is the focus of this chapter is often referred to as "cultivation research." Cultivation theory is probably best understood as a sociological theory. Developed by George Gerbner and colleagues (see Gerbner, 1969; Gerbner & Gross, 1976; Gerbner, Gross, Morgan, & Signorielli, 1980), the general notion is that television is the dominant socializing force in American society and thus has a profound influence on audiences' perceptions of social reality. The theory is premised on two related propositions: (1) that television programs present a consistent but dramatically distorted view of the real world, and (2) that frequent viewing of these consistent and very formulaic representations results in the internalization of these distortions into viewers' worldviews. Put differently, cultivation theory posits that television dominates the symbolic environment of its viewers to such a degree that the distorted images and messages in television programs are "cultivated" by viewers and come to replace worldviews that are developed through daily experience, and this effect occurs in proportion to the frequency of viewing. These distorted portrayals are posited to affect a wide variety of judgments, including perceptions of what others have and do (descriptive norms), judgments about what others should have and do (injunctive norms; see Cialdini & Goldstein, this volume), and the development of attitudes and values that form viewers' belief systems.

The first premise—that television presents systematic distortions of reality—has received substantial support and little challenge (but see Newcomb, 1978). Numerous content analyses have shown that the world of television is clearly different from the real world. The world of television is remarkably violent, with estimates of five overt acts of crime or violence per hour in an average program, 75% of programs airing in prime time showing some sort of violence, and the rate of crime and violence in programs occurring 10 times more often than real-world violence (Gerbner, Gross, Morgan, & Signorielli, 1986; Lichter, Lichter, & Rothman, 1994). Relative to the real world, the television world is also more affluent and materialistic (O'Guinn & Shrum, 1997), doctors, lawyers, and police officers make up a much larger proportion of the work force (DeFleur, 1964; Smythe, 1954), and television characters tend to be more dishonest and maritally unfaithful (Lichter et al., 1994), relative to the real world. Moreover, these findings have remained relatively stable over time (Signorielli, 1990).

Perhaps more important, television distorts more than simple demographics; it also distorts underlying messages. Perhaps Howard Beale, Paddy Chayefsky's (1976) character in the movie *Network*, put it best:

> Don't come to television for the truth. TV's a goddamned amusement park. We'll tell you the good guys always win. We'll tell you nobody ever gets cancer at Archie Bunker's house. We'll tell you any shit you want to hear.
Research has provided supportive evidence that the messages portrayed in television programs may be related to viewer attitudes. For example, television viewing has been shown to correlate negatively with support for civil liberties (Carlson, 1983) and positively with more permissive attitudes toward sex (Ward & Rivadeneyra, 1999), and be related to attitudes toward criminal justice that are consistent with television portrayals (Haney & Manzolati, 1980). Even more problematic is when some of these distortions are consistently paired with certain characteristics (e.g., good guy = white male; villain = ethnic minority). Research suggests that in fact minorities are more likely to be portrayed as criminals on prime time (U.S.) television programs (including news; Dixon & Linz, 2000; Lichter et al., 1994).

The second premise—that frequent viewing of these distortions biases viewers' beliefs toward these distortions—has also received frequent support. The premise is generally tested by measuring the amount of television people watch and correlating this measure with various measures of attitudes, beliefs, and perceptions. The measures that are chosen correspond directly to the constructs that are prevalent and overrepresented in the television world (e.g., as in the examples just noted, constructs such as crime and violence, affluence, marital discord, and occupational prevalence). In support of the premise, studies have shown that the more people watch television, the higher are their estimates of real-world violence (Gerbner et al., 1980; Hawkins, Pingree, & Adler, 1987; Shrum, Wyer, & O'Guinn, 1998), personal crime risk (Shrum & Bischak, 2001), perceived danger (Gerbner et al., 1980), and anxiety and fearfulness (Bryant, Carveth, & Brown, 1981). Studies have also shown that frequency of viewing is positively correlated with interpersonal mistrust (Gerbner et al., 1980), greater pessimism about marriage (Shrum, 1999a), estimates of the prevalence of doctors, lawyers, and police officers in the workforce (Shrum, 1996, 2001), greater faith in doctors (Volgy & Schwarz, 1980), estimates of societal affluence and ownership of expensive products (Potter, 1991; O'Guinn & Shrum, 1997), and materialism (Shrum, Burroughs, & Rindfleisch, 2005).

Although support for the influence of frequent consumption of the television message has received impressive support, this research has also been subject to frequent criticism. The primary criticism is that the vast amount of it is survey research that reports correlational data, making it vulnerable to alternative explanations such as reverse causality or spuriousness. Some of the criticism is justified. For example, several critiques and re-analyses of Gerbner and colleagues' data have shown that not only did Gerbner and colleagues often do a poor job of addressing obvious third-variable explanations by failing to statistically control for such variables age, education, sex, and hours worked outside the home, but when these control variables are controlled simultaneously, the cultivation effect is reduced to nonsignificance (cf. Hirsch, 1980; Hughes, 1980).

A second criticism of cultivation research is that the results have not always been consistent. As just noted, careful statistical control of other possible causal variables can eliminate the cultivation effect. In an exhaustive review of the early studies on the cultivation effect, Hawkins and Pingree (1982) observed that the effects appeared to be more consistent and stable for certain types of criterion variables than for others. They noted that when the dependent variables pertain to percentage estimates (e.g., % of Americans involved in some kind of violence in an
average year, % chances of being involved in a violent crime), the cultivation effect is consistently positive. However, when the dependent variables pertain more to attitudes and beliefs (e.g., fear of walking home alone at night, alienation, interpersonal mistrust), the results are mixed. Although research subsequent to that review has shown consistent and robust effects for both types of dependent measures, the lack of consistency of the early work was nevertheless damaging.

Finally, a third criticism of cultivation theory is its lack of explanatory mechanisms at the individual level (Hawkins & Pingree, 1990; Shrum, 1995). Other than predicting a general main effect for television viewing, the theoretical formulations offered no hypotheses regarding boundary conditions, nor did they specify any type of psychological mechanism (perhaps other than general learning) for how television was integrated into real-world beliefs. Although the theory was introduced in more sociological terms (for a review, see Shanahan & Morgan, 1999), the variables are measured at the individual level, and thus the lack of a psychological explanation for the effect is clearly limiting.

A SOCIAL COGNITION EXPLANATION OF CULTIVATION EFFECTS

Although the need for a psychological explanation of cultivation effects was recognized early on, early attempts to generate and validate such explanations were generally unsuccessful (for a review, see Shrum, 2007a). These early models viewed cultivation effects in terms of social learning theory (Bandura, 1977) in which viewers learned appropriate responses to situations by observing the behavior of television actors, or by a general observation of what values, attitudes, and beliefs are normative due to their pervasive portrayals on television programs. Consequently, the focus was primarily on the nature of the independent variable (frequency and content of viewing) and what variables might impede learning, such as viewers' cognitive processing abilities, perceived reality of television programs, and inference making processes (Hawkins & Pingree, 1982).

An alternative approach to explaining cultivation effects, and one that has informed the research to be reviewed here, is somewhat opposite of the approach just described. That is, instead of focusing on the independent variable and its properties, it may be useful to focus on the dependent variables (judgments) and how they are constructed, and then construct plausible explanations for how information learned through television viewing might plausibly influence those judgments. This approach seems particularly appealing given that the consistency of the cultivation effect has been shown to differ across dependent variables. Thus, it may be that television viewing affects different judgments in different ways.

A close examination of the types of dependent variables typically used in cultivation research bolsters this reasoning. Consider the following two constructs and their typical operationalizations for measuring cultivation effects:

Crime/Violence

What percentage of Americans have been involved in a violent crime?
What percentage of women are raped in their lifetime?
I am afraid to walk alone at night.
The world is a mean and violent place.
Affluence
What percentage of Americans have a private swimming pool?
What percentage of Americans are millionaires?
I admire people who own expensive homes, cars, and clothes.
The things I own say a lot about how well I'm doing in life.

Although the common method of categorizing these dependent variables is by topic, it is likely apparent to most social psychologists that the variables can be categorized by type of judgment. Specifically, the first two judgments in each category are frequency or probability judgments, whereas the second two are attitude or belief judgments. Moreover, not only are the judgments quite different in nature, but the processes through which these judgments are constructed are also frequently different. Given this, it seems plausible that the manner in which television information may be used in their construction may also differ.

The possibility that television viewing influences the two types of judgments in different ways forms the basis of the research that is reported in the remainder of this chapter. Models are presented for each type of judgment, along with empirical research that provides support for the models. As the subsequent discussion details, not only does television viewing affect the judgments differently, but the underlying factors often exert their effects in opposite ways.

**Frequency and Probability Judgments**

The types of frequency and probability judgments used to measure cultivation effects have a number of important characteristics that have implications for how television may influence those judgments. For one, the judgments are for the most part memory-based (Hastie & Park, 1986). That is, precise judgments of the likelihood of being a victim of a violent crime or the prevalence of private swimming pools in American households are ones that people would not make spontaneously, but only when asked to do so (usually by a researcher). Thus, people are unlikely to have such estimates stored in memory. Instead, to provide their estimate, they would need to recall information from memory and construct their estimates at the time the judgment is requested.

A second characteristic of the frequency and probability judgments is that they are set-size judgments. Set-size judgments reflect estimates of the frequency of occurrence of a category (e.g., millionaires) within a larger, superordinate category (Americans). One important characteristic of set-size judgments is that they have been shown to be precisely the ones that tend to be influenced by judgmental heuristics such as availability (Manis, Shedler, Jonides, & Nelson, 1993). That is, in constructing set-size judgments, rather than going through an exhaustive count of instances in memory and using this information to construct an estimate, people instead employ a cognitive shortcut and base their estimates on the subjective ease
with which an instance can be recalled (Schwarz et al., 1991; Schwarz & Wänke, 2002; Tversky & Kahneman, 1973).

These various characteristics of the types of frequency and probability judgments used to test for cultivation effects have implications for possible scenarios for how television information may influence these judgments. First, the memory-based nature of the judgments suggests that if television information has an effect on them, this effect occurs via the recall of television-influenced information at the time the judgment is required (and not during the viewing process). Second, the set-size nature of the judgments, coupled with the relative difficulty of constructing them, suggests that they are constructed through heuristic processing, and specifically, through the use of heuristics such as availability and simulation.

**Television Viewing and Accessibility Bias**

From these two general propositions, more specific and testable propositions can be derived. The first pertains to the use of the availability heuristic in constructing the judgments. One possible explanation for the positive relation between the frequency of viewing and the magnitude of the estimates is that frequent viewing increases the accessibility of exemplars relevant to the judgment (e.g., violence, police officer, unfaithful spouse, house with a pool). Thus, heavy viewers should have information relative to the judgment more accessible from memory than should light viewers, and if people base their judgments on this accessibility, it should produce higher estimates for heavy than for light viewers, precisely as cultivation theory predicts. Moreover, this accessibility bias should mediate the relation between viewing frequency and judgment.

A series of studies has provided support for this proposition. Busselle and Shrum (2003) reported evidence that relevant exemplars are more accessible for heavy than for light viewers. Participants were prompted to recall or imagine an instance of particular events, some of which are frequently portrayed on television, and to indicate the ease with which they could recall the examples and their source. Media examples were more likely to be recalled for events that are portrayed often in the media but infrequently experienced directly (e.g., murder, trial), whereas personal experiences were more likely to be recalled for events with which participants had high direct experience, regardless of frequency of media portrayals (e.g., highway accidents, dates). These results are consistent with research showing that direct experience enhances accessibility (Fazio, Chen, McDonel, & Sherman, 1982). More important, ease of retrieving the exemplars was positively correlated with frequency of television viewing, but only for the viewing of programs that frequently portrayed the events and when direct experience was low. Thus, television exemplars appear to be more accessible for heavy than for light viewers in expected ways.

Other studies have also provided evidence of an accessibility bias resulting from television viewing, as well as its mediating function. Shrum and O’Guinn (1993) had participants indicate their various frequency and probability judgments and measured the speed with which the participants reported their judgments. If the accessibility of relevant exemplars is a function of television viewing frequency,
then not only should heavier viewers report higher estimates than lighter viewers (consistent with a cultivation effect), but they should make their judgments faster. As expected, heavy viewers estimated higher and faster than light viewers, and controlling for speed of response eliminated the cultivation effect. Other studies have replicated this effect across a variety of dependent variables and provided more stringent tests of the mediating role of accessibility (cf. Busselle, 2001; Shrum, 1996; Shrum, O'Guinn, Seminik, & Faber, 1991).

**Television Viewing and Source Discounting**

Although the notion that television viewing enhances accessibility, which in turn influences judgments, is intuitive, it also raises some ambiguities. For one, it suggests that people willingly use examples from television programs as a basis for their judgments. Yet, this seems counterintuitive. Why would people use information from presumably nonveridical sources (e.g., fictional television) to construct their estimates of real-world incidence? In other words, it seems unlikely that people would construct their estimates of the prevalence of American millionaires on the ease with which they can recall a television character who is a millionaire. However, one way in which this process could take place is if the source of the memory (i.e., television) is not discounted (Johnson, Hashtroudi, & Lindsay, 1993). That is, if participants do not routinely pay attention to the source of their memories in the process of constructing their judgments, then they would not source-discount. Such lack of discounting might take place under conditions in which participants are not concerned about the accuracy of their answers, conditions that are likely present in anonymous surveys.

Shrum and colleagues (1998) tested the proposition that people do not normally discount television-based exemplars when constructing their frequency and probability estimates by priming television as a possible source of information. Priming source was expected to make salient the lack of veridicality of the information (and thus its lack of diagnosticity). In source-priming conditions, source was made salient by simply asking participants to report their television viewing frequency prior to providing their judgments of the prevalence of crime and certain occupations. In relation-priming conditions, participants were forewarned of the possible influence of television information on their judgments, thus increasing both the salience of television and its effects. In no-priming conditions, participants provided their estimates of crime and occupations before they reported their television viewing behavior. Because the primes were salient rather than unobtrusive, we expected that participants would correct for the influence of television by discounting nonveridical (and thus inapplicable) information such as television exemplars, similar to the effects noted by Martin (1986; Martin, Seta, & Crelia, 1990; see also Higgins, Rholes, & Jones, 1977 for the lack of effects of inapplicable primes). However, we also expected that this discounting effect would be greater for heavier viewers than for lighter viewers. Because heavy viewers should be more likely to retrieve television-based exemplars than should light viewers, they should have more to discount.
This viewing by priming conditions interaction was in fact what we found. As can be seen in Figure 11.1 (for simplicity, the effects are averaged across dependent variables), the expected cultivation effect was obtained in no-priming conditions but was eliminated in both source- and relation-priming conditions (neither of the slopes are significant). Most important, as expected, the priming conditions affected only the heavy viewers, as there were no significant differences in estimates between any priming conditions for light viewers. These results are similar to those obtained by Wänke, Schwarz, & Bless (1995), who found that perceived diagnosticity of the recall experience itself (rather than the diagnosticity of the recalled exemplars) influenced the use of the availability heuristic in judgment construction.

One possible explanation for the adjustments noted is a demand effect in which participants adjusted because they perceived they were expected to do so. Yet if this were the case, we would expect that both light and heavy viewers would show adjustment effects. As Figure 11.1 shows, this was not the case for light viewers. However, it is possible that viewers adjusted based on their perceptions of themselves as heavier or lighter viewers. That is, heavy viewers may have adjusted more because they were aware that they were heavy viewers and thus understood their estimates should be more affected by viewing than should those of light viewers. Light viewers, realizing that they watch little television and thus should not be affected much by it, adjusted relatively less. This possibility was tested in a second study that manipulated participants' perceptions of whether they were heavy or light viewers by manipulating the scale values that participants used to report their television viewing frequency (see Schwarz, Hippler, Deutsch, & Strack, 1985). Although the manipulation was successful, the discounting in the priming conditions held regardless of the manipulated perceptions of viewing frequency.
Heuristic Versus Systematic Processing

The findings of Shrum and colleagues (1998) are consistent with the proposition that the judgments of frequency and probability used to test for cultivation effects are memory-based ones that rely on the recall of information at the time the judgment is required. If this is so, then additional propositions can be derived that pertain to the conditions under which heuristics should (or should not) be used. Heuristics tend to be used most when involvement with or the importance of the judgment construction task is low. At these times, because the estimates are relatively difficult to accurately construct, people rely on cognitive shortcuts to simplify the task (for a review, see Sherman & Corty, 1984). However, suppose that it is important for people to be accurate in their judgments, thus making them more involved in the judgment construction task. Under these conditions, it is likely that people will think more carefully about their judgments, use information from a variety of sources, and scrutinize more carefully the source of the information they retrieve. If so, then television information should have relatively little impact on their judgments.

Shrum (2001) tested the proposition that task involvement would moderate the cultivation effect. Participants were induced to process either systematically or heuristically, or given no inducement. In systematic processing conditions, participants were prompted to think carefully about their answers prior to reporting them by using an accuracy motivation/task importance manipulation (Chaiken & Maheswaran, 1994; Maheswaran & Chaiken, 1991). They were instructed to be as accurate as possible and were told that their answers would be graded by the experimenter and that the experimenter would discuss their answers with them after the study and expect them to justify their answers. In contrast, in heuristic processing conditions, participants were instructed to answer quickly and spontaneously by giving the first answer that came to them "off the top of their head." In control conditions, participants were simply asked to provide their answers to the questions that followed. The questions pertained to four constructs typically used in cultivation research: prevalence of crime, certain occupations, marital discord, and societal affluence. After providing their estimates, participants reported their television viewing frequency.

If typical cultivation effects involving judgments of frequency and probability are normally made through the use of cognitive heuristics, then inducing participants to use them (heuristic conditions) should have no effect relative to the control condition. Thus, the positive relation between television viewing frequency and magnitude of the estimates should not differ between the heuristic and control conditions. However, inducing participants to avoid the use of heuristics (systematic condition) should reduce the magnitude of the cultivation effect relative to the other two conditions. The results (averaged across the four dependent variables) can be seen in Figure 11.2. As expected, both the heuristic and control groups produced robust cultivation effects that did not differ from each other. In contrast, the cultivation effect was eliminated (nonsignificantly negative) in the systematic condition. Note also that, just as with the results from Shrum and colleagues (1998) shown in Figure 11.1, the processing manipulation affected only
the heavy viewers; the estimates did not differ among light viewers as a function of experimental condition. Moreover, this exact pattern held for all four dependent variables. These results are similar to those observed by Greifeneder and Bless (2007), who showed that heuristics are used under capacity constraint conditions but not under full resources conditions.

The results of Shrum (2001) provide support for the notion that the use of cognitive heuristics can explain the cultivation effect. When systematic processing was induced, the cultivation effect was eliminated. In that study, task involvement was used to induce systematic processing and thus (presumably) more careful scrutiny of information used to construct judgments. However, low involvement (at the time of judgment) is not the only process that is likely to induce heuristic processing. People are also more likely to use heuristics when ability to process information is low. If this is the case, then similar to the effects just noted, low ability to process information should also result in heuristic processing.

Shrum (2007b) conducted a field experiment to test the notion that low ability to process information should enhance the cultivation effect. A general population, random-sample survey was administered to assess the relation between television viewing frequency and seven different dependent variables: estimates of societal crime prevalence, personal crime risk in one's own neighborhood, personal crime risk in New York City (outside one's own neighborhood), vice behaviors such as drug use and prostitution, societal affluence, martial discord, and prevalence of particular occupations, all overrepresented on television relative to their real-world incidence. Ability to process information was manipulated by varying whether participants completed their surveys via a telephone or mail. Because telephone surveys tend to result in more time pressure and “satisficing” (choosing the easiest answer) than most other forms of surveys (Holbrook, Green, & Krosnick, 2003), the telephone surveys were expected to produce a greater tendency to use heuristics than were mail surveys. If so, and the cultivation effect is the result of the use of these heuristics, the telephone survey conditions should show a larger cultivation effect than
the mail survey conditions. Moreover, this effect should hold for all of the dependent variables except personal crime risk in one's own neighborhood. Judgments of this kind have been shown to be influenced primarily by direct experience and not by media information (Shrum & Bischak, 2001; Tyler, 1980; Tyler & Cook, 1984).

As expected, method of survey administration affected judgments. Estimates were uniformly higher in the telephone than in the mail survey conditions, consistent with heuristic processing conditions and confirming Holbrook and colleagues' (2003) observation that survey method can impact descriptive judgments. More germane to the cultivation effect and its underlying processes, the magnitude of the cultivation effect was greater in telephone than in mail survey conditions for all of the dependent variables except estimates of personal crime risk in one's own neighborhood, which as predicted did not differ as a function of survey method.

Summary  The research just reviewed tested the proposition that the frequency and probability judgments that are typically used as indicators of a cultivation effect are memory-based judgments that can be explained through the use of judgmental heuristics such as availability. If the judgments are made through the use of the availability heuristic, then accessibility differences should be discernable as a function of frequency of viewing. Moreover, conditions that facilitate or inhibit the use of heuristics during judgment construction should correspondingly facilitate or inhibit the cultivation effect. Consistent with these propositions, research has provided reliable evidence that television viewing increases the accessibility of exemplars relevant to the judgment and that this accessibility mediates the relation between viewing frequency and the magnitude of the judgments. In addition, conditions that inhibit the use of heuristics, such as high motivation for accurate judgments or reminders about the source of the information recalled, significantly reduce the magnitude of the cultivation effect, whereas conditions that facilitate the use of heuristics, such as time pressure, increase the magnitude of the cultivation effect.

Note that the facilitating and inhibiting conditions refer to conditions at the time the judgment is required, and thus not during the actual viewing experience. This finding runs counter to a typical learning model in which the television lessons are integrated into social perceptions through an online process during viewing. Thus, at least for the frequency and probability judgments, the lessons get "learned" at the time of judgment through the recall of television-based information stored in memory during the viewing process. However, people are generally unaware that television is the source of the information they recall and thus unaware of the influence of television viewing on their judgments.

The frequency and probability judgments of the types just described have formed a significant part of research on the cultivation effect. Cultivation effects for these judgments have generally been larger and more consistent than effects for other types of judgments such as values, attitudes, and beliefs. For these reasons, along with the general success in providing a psychological process explanation for the effects, research on the effects of television viewing on values, attitudes, and beliefs have been comparatively sparse. This is unfortunate for at least two reasons. One is that the question of how television information gets processed
and integrated into evaluative belief systems seems to better capture the notion of cultivation. It seems safe to assume that television’s impact on whether people condone violence, are less trustful of their citizens, or lust after wealth and status are more important societal issues than its impact on beliefs about how many doctors and lawyers there are in the workforce. The second reason that a focus on the memory-based frequency and probability judgments is unfortunate is that they are relatively rare. Not only are they infrequently made, but they are actually difficult to produce at all, even in the lab (Hastie & Park, 1986). Instead, most judgments made in everyday life tend to be online judgments that are spontaneously generated as information is encountered. Such judgments include impression formation, stereotyping, and attitude construction, and in fact preventing people from making these spontaneous, online judgments is remarkably difficult. The next section addresses whether and how television may influence these types of judgments.

Values, Attitudes, and Beliefs

Judgments such as values, attitudes, and beliefs are quite different from the frequency and probability judgments just discussed. One difference is that they are for the most part online judgments. That is, as information is encountered in everyday life, it is used to either construct new evaluative judgments or update old ones. This notion has important implications for understanding how television might impact those judgments. For one, it suggests that the effect of television viewing on values and attitudes should occur during the viewing process rather than at the time the judgment is requested by the researcher. People spontaneously use the information from a television program to form or update attitudes and then simply recall those attitudes and report them when requested to do so. For another, it suggests that television’s cultivation of attitudes and values can be thought of as a process of online persuasion. As noted earlier, television programs are not sterile and value-free, but instead often convey the dominant norms and values of society. In turn, these television messages may be viewed as persuasive communications (whether intended or not) that may potentially impact the attitudes, values, and beliefs of viewers. If so, then factors that facilitate or inhibit persuasion, such as motivation and ability to process information (Petty & Cacioppo, 1986), should likewise facilitate or inhibit the cultivation effect.

Television Viewing and Materialism

Shrum and colleagues (2005) tested this notion by investigating whether motivation and ability to process information during viewing moderates the effect of television viewing frequency on material values. A survey was sent to a randomly selected sample of U.S. residents. Motivation to process information was operationalized as need for cognition (Cacioppo, Petty, & Kao, 1984), attention was operationalized as individual differences in the extent to which viewers regularly pay close attention while viewing (Rubin, Perse, & Taylor, 1988), and materialism was measured with the Richins and Dawson (1992) Material Values Scale. If television viewing influences material values through a persuasion process, then the relation between...
viewing frequency and materialism should be greater for those higher in motivation to process information compared to those lower in motivation to process, and greater for those higher in ability to process information compared to those lower in ability to process.

The results were according to predictions. Both need for cognition and attention while viewing (which were uncorrelated with each other) interacted significantly with the relation between television viewing and materialism in the expected ways. Although both the high- and low-need-for-cognition groups showed positive relations between viewing frequency and level of materialism, the effect was greater for the high-need-for-cognition group. In a similar manner, the high-attention group showed stronger cultivation effects than did the low-attention group, although the cultivation effects were again significant for both groups. Moreover, the patterns were again similar to those found for the frequency and probability judgments (see Figures 11.1 and 11.2) in that the effects of need for cognition and attention were noted primarily for heavy viewers.

Although consistent with a persuasion explanation for cultivation effects for material values, the notion that high-need-for-cognition viewers would show stronger cultivation effects than would low-need-for-cognition viewers runs somewhat counter to the stereotypes of high-need-for-cognition people. Those high in need for cognition might be expected to avoid television because it is not cognitively challenging (Kubey & Csikszentmihalyi, 1990). Indeed, in Study 1 of Shrum and colleagues (2005), need for cognition was negatively correlated with frequency of viewing, but the effect was relatively small ($r = -.15$). Moreover, although those high in need for cognition tend to elaborate more on information presented in a communication than those low in need for cognition, those high in need for cognition are also known to scrutinize arguments more carefully and counterargue weak messages to a greater degree than those low in need for cognition. Because it is plausible that television messages might be considered weak arguments because they come from a nonveridical source, the precise nature of the elaborations of high-need-for-cognition viewers is unclear.

There is an alternative explanation, however, for the noted effects, one consistent with the pattern of effects observed by Shrum and colleagues (2005, Study 1). As just noted, the correlation between need for cognition and television-viewing frequency is actually relatively small. Thus, despite the negative correlation, there are nevertheless many heavy viewers who are high in need for cognition. Moreover, they are heavy viewers presumably because they enjoy watching television, and constantly counterarguing television messages is likely to be inconsistent with that enjoyment. Instead, it seems more likely that heavy viewers will suspend disbelief in order to become engrossed in the program.

This proposition was also tested by Shrum and colleagues (2005, Study 2). Participants viewed a 20-minute film segment that was either high (Wall Street) or low (Gorillas in the Mist) in materialism. Afterward, they completed a thought-listing task, followed by need for cognition and narrative transportation scales. Narrative transportation refers to the extent to which viewers (or readers) become absorbed in a story and feel they are actually part of the experience (Green, Garst, & Brock, 2004). As expected, high-need-for-cognition participants listed more favorable
thoughts than low-need-for-cognition participants, but this was true only for heavy
viewers. Moreover, consistent with the notion that high-need-for-cognition viewers
would suspend disbelief rather than counterargue in an effort to become absorbed
in the program, high-need-for-cognition participants who were heavy viewers were
more transported than light viewers who were high in need for cognition. The
role of transportation in the online persuasion process was further confirmed in
study that manipulated whether participants saw a high- or low-materialism pro­
gram (Shrum, 2006). Participants who saw the high materialism program reported
more materialistic values (Richins & Dawson, 1992) and greater financial aspira­
tions (Kasser & Ryan, 1993) than those who saw the low-materialism program, but
the effect was greater for those who reported being more transported during the
program.

The online nature of attitude activation also has implications for attitude access­
sibility. If attitudes are activated spontaneously during viewing, the attitudes may
be affected in ways other than simply attitude valence or extremity (for a review
see Petty & Krosnick, 1995). In particular, frequent activation of attitudes should
make them more accessible, and thus more predictive of behavior, than attitudes
that are less frequently activated (Fazio et al., 1982). Thus, it may be that frequent
viewing of certain messages may not affect attitude extremity, but may affect atti­
dtude accessibility. For example, if viewers watch a program that conveys a theme
or message with which they agree (e.g., tough on crime, materialism signals suc­
cess), viewing may not necessarily make the attitude more positive, but may simply
reinforce the existing positive attitude.

Shrum (1999a) investigated this proposition by asking participants to
indicate their attitudes toward concepts that a content analysis revealed were
frequently portrayed on soap operas (marital discord, distrust of people, owning
expensive products) and recorded both their attitude extremity and attitude acces­
sibility (via reaction times). As expected, heavier soap-opera viewers had more
accessible attitudes than lighter soap-opera viewers, and this effect held over and
above the effects of attitude extremity.

Summary The research just reviewed provides support for the proposition that
television viewing influences values and attitudes through an online persuasion
process in which those who are higher in motivation and ability to process infor­
mation are more influenced by the messages contained in the television programs
than those lower in motivation and ability, similar to the processes proposed by
Petty and Cacioppo (1986). Moreover, this general process appears to be enhanced
by the degree to which viewers can suspend disbelief and become absorbed or
transported into the program, a process which tends to reduce counterarguing of
the television message.

Note that the moderating effects of motivation and ability to process informa­
tion for values and attitudes operate quite differently, if not in an opposite man­
ner, from viewing effects for frequency and probability judgments. Recall that for
these latter judgments, which are memory-based and occur through the recall of
television information at the time the judgment is elicited, motivation and ability
to process information decreases the cultivation effect, and this process occurs at
the time of recall when the judgment is elicited. The effects occur through greater scrutiny of the information that is recalled, more attention to unreliable information, and consideration of information from a variety of sources, rather than simply relying on the (television) information that comes most easily to mind. Conversely, for the values and attitude judgments, which are online and occur spontaneously during viewing, motivation and ability to process information increases the effects of the television message. This pattern of effects is part and parcel of maximizing the enjoyment of viewing entertainment television. Rather than motivation and ability factors increasing the scrutiny of the message, such scrutiny is suspended in order for the viewer to be absorbed into the program (which maximizes enjoyment), and thus motivation and ability factors increase the extent to which the television message itself is absorbed and integrated into existing belief structures.

Qualifications and Limitations

Although the research just reviewed tends to support the general framework that is proposed for the processes underlying cultivation effects, a few observations are worth noting with regard to limitations of some of the assumptions. One of the most problematic is the notion of causality. As noted earlier, one of the criticisms of early research on television effects was its almost exclusive reliance on correlational data. However, it is also obvious that most of the studies that have been reported in support of the process models I have proposed have also measured rather than manipulated television viewing. The key difference is that within the context of the studies that measure television viewing, other variables that represented proposed process variables were manipulated (accuracy motivation, heuristic processing, source discounting, time pressure). Given both the pattern and consistency of the data, alternative hypotheses of reverse causality or other variable influence have difficulty in accounting for these findings. The choice to measure rather than manipulate television viewing was made in order to capture more naturalistic effects. That said, the more recent studies on the relation between television and materialism have required that viewing be manipulated in order to better determine the processes that are occurring during viewing, and these studies have also provided results consistent with theory.

A second issue worth noting is the assumption that attitudes are for the most part online judgments. Of course, not all attitudes are formed in this fashion. In some instances, particularly when current attitudes are not that accessible or do not exist, or when individuals are not that confident in the veracity of their current attitude, then they may be motivated to search memory for information to compute or recompute their attitude. However, this would likely occur when attitude objects are not that common. Given that most of the attitudes that are measured are common ones frequently addressed not only on television but in everyday life, it seems reasonable to think that at least the attitudes addressed in this research are constructed in an online fashion. Moreover, this is particularly true for personal values, which by definition are stable, closely held abstractions that form the basis of people's belief systems (Rokeach, 1973).
Finally, the separate models that were offered for frequency and probability judgments, and attitudes, values, and belief judgments suggest that these two types of judgments are independent. Obviously, this does not have to be so. It seems intuitive that judgments about, say, the frequency of violent crime might cause one to be more fearful of crime. In fact, this was the early assumption in cultivation research, and the frequency/probability and attitudes/values judgments were termed first-order and second-order judgments, respectively (Hawkins & Pingree, 1982), with the assumption that the former influenced the latter. However, research that tested this proposition has shown little consistency and support (cf. Hawkins et al., 1987; Potter, 1991). Such lack of effects makes sense if indeed first-order, frequency judgments are seldom spontaneous and made in a memory-based fashion at the time the judgment is requested. If so, then they could logically have little effect on the attitudes and values that are currently held (although the reverse might be true: judgments of prevalence of crime may be inferred from one's own fear of crime).

IMPLICATIONS OF THE PROCESSES UNDERLYING TELEVISION-VIEWING EFFECTS

The purpose of this chapter was not only to show that television program content has a demonstrable effect on those who view it, but also to explicate the processes underlying these effects. The latter purpose is particularly important because the validity of these effects has been controversial. On the one hand, the effects may seem relatively obvious to social scientists familiar with the processes underlying concepts such as perception, impression formation, and attitude construction. On the other hand, the effects often seem counterintuitive to those who believe that attitudes and beliefs are always constructed or performed through conscious, controlled processes and that behaviors are always chosen through a rational and generally thoughtful process that is under the control of “free will.” Hence, most people think they are relatively unaffected by such things as viewing film and television violence because they realize that much of this violence is fiction meant to entertain, and thus should logically have little or no effect on their real-world decisions. Of course, the last 30 years (at least) of social cognition research points to just the opposite, that people are generally unaware of the true influences on their attitudes and behavior and that a vast majority of these influences occur outside of conscious awareness (Hassin, Uleman, & Bargh, 2005; see Dijksterhuis, this volume).

One way of increasing confidence in the validity of television effects is through the development and testing of the processes that underlie these effects. Toward this end, I have reviewed research that has focused on the processes underlying a particular type of television effect, the cultivation effect. Like many media effects, it has been the subject of substantial criticism, in large part because the research has been predominantly correlational and the effects have been both small and inconsistent. The models I have proposed for how these effects operate help explain why the effects may at times be small or even nonexistent. As the models indicate,
there are a number of factors or situations that may either facilitate or inhibit the extent to which information garnered through television viewing may ultimately impact judgments. Moreover, the nature of these effects depends on whether the judgments are online or memory-based.

Understanding the underlying processes of television viewing effects has implications for developing methods to reduce these effects. Because many of the effects that have been discussed are widely considered to be harmful or detrimental to viewers, educational efforts to reduce these effects have been developed. Generally termed "media literacy" programs (Kubey, 1997), they attempt to educate viewers about the potentially harmful effects of television viewing, particularly in terms of making viewers aware of television's distorted portrayal of reality, whether this distortion is purposeful (with advertisements) or not (with programs). Thus, for example, programs might inform viewers that the overall content of television is overly violent and that viewing such violence may have certain deleterious effects, or that the content of news is not always representative but instead is selective, such that the crimes that are chosen for inclusion on the news are more likely to depict minorities as perpetrators than baseline statistics would predict (Dixon & Linz, 2000). Thus, the media literacy efforts generally teach viewers to "read the media" (Shrum et al., 2005). However, the research just reviewed has additional implications. For one, it suggests that such tactics may work well for non-narrative programs such as news, which people tend to process critically and with some skepticism, but not so well for fictional narratives in which viewers suspend disbelief and critical viewing in order to experience maximum enjoyment from the program. In addition, for memory-based judgments, reading the media should have little effect. Instead, viewers should be encouraged to also "read the judgment" by learning how frequent viewing of distorted portrayals influences certain types of judgments, so that when such a judgment is elicited, people may have a greater chance of discounting television-based information. Ideally, such a comprehensive approach to media literacy will have optimum success in combating the ill effects of television's influence on viewers' perceptions, attitudes, and values.

**CONCLUSION**

The research reviewed here answers questions that have plagued cultivation research for some time, particularly with respect to understanding the possible underlying mechanisms of the effect. However, there are clearly many questions that have been left unanswered. For one, although the various mechanisms that have been proposed and tested have received empirical support, there are likely a number of other mechanisms that may also contribute to the overall effect. For example, cultivation effects of frequency and probability judgments may occur through the applications of heuristics other than availability, such as simulation and representativeness. Cultivation effects for attitudes and values might be explained through mere exposure in which liking and condoning violence results from repeated exposure to violent stimuli (portrayals). Alternatively, socialization through observational learning may occur when viewers conclude that certain attitudes and values are normative because they occur so frequently and consistently
in television programs. Another possible mechanism is that television viewing influences values such as materialism, not through repeated exposure to materialistic content, but through content that makes viewers insecure. Terror Management Theory (Greenberg, Pyszczynski, & Solomon, 1986) posits that when people are made to feel insecure, particularly due to thoughts of their own death (mortality salience), they react by bolstering self-esteem. In materialistic societies in which money is used to gauge self-worth (such as the United States), people may attempt to bolster self-esteem through materialistic pursuits. Thus, to the extent to which television programs induce thoughts of one's own death (and surely the various thrillers, action-adventures, and horror flicks do so often), it may move viewers toward greater materialism (Arndt, Solomon, Kasser, & Sheldon, 2004; Kasser, 2002). Needless to say, there are still a host of questions about how, and how much, television affects its viewers.

ENDNOTES

1. These content analyses, as well as most of the research to be discussed, pertain to American television. Although a number of studies have investigated the effects of television viewing in countries other than the United States (e.g., Van den Bulck, 2002; Weimann, 1984), the bulk of the research has been done with American audiences, perhaps because the frequency of viewing of American viewers is so high (about 30 hours per week; Nielsen, 2006).

2. It is possible that people may make the assumption that television is in fact reflective of real life. However, when participants have been asked to provide their beliefs about the reality of television portrayals, they invariably fall well below the mid-point on scales that measure perceived reality of television (for a review, see Shrum, 1999b).

3. Note that a lack of attention to specific aspects of the exemplars is consistent with Tversky and Kahneman's (1973) conceptualization of the availability heuristic and the use of subjective ease of recall in constructing frequency estimates. (See also Schwarz et al., 1991, for further development of this notion.)

REFERENCES


civil liberties. *Communication Research, 10*, 529-552.

Chaiken, S., & Maheswaran, D. (1994). Heuristic processing can bias systematic processing:
Effects of source credibility, argument ambiguity, and task importance on attitude

Chayefsky, P. (writer). (1976) *Network* [Motion Picture]. United States: Metro-Goldwyn-
Mayer, Inc.

Quarterly, 28*, 57-74.

Americans and Latinos as lawbreakers on television news. *Journal of Communication,
50*(2), 131-154.

factor in violence against women. *Journal of Personality and Social Psychology, 41*,
710-724.

tude-behavior consistency, and strength of the object-evaluation association. *Journal
of Experimental Social Psychology, 18*, 339-357.


of Communication, 26* (2), 182-190.

Gerbner, G., Gross, L., Morgan, M., & Signorielli, N. (1980). The ‘mainstreaming’ of

dynamics of the cultivation process. In J. Bryant & D. Zillmann (Eds.), *Perspectives
on media effects* (pp. 17-40). Hilldale, NJ: Lawrence Erlbaum.

Greenberg, J., Pyszczynski, T., & Solomon, S. (1986). The causes and consequences of a
need for self-esteem: A terror management theory. In R. F. Baumeister (Ed.), *Public
self and private self* (pp. 189-212). New York: Springer-Verlag.

Greifeneder, R., & Bless, H. (2007). Relying on accessible content vs. accessibility experi-


Oxford University Press.

Hastie, R., & Park, B. (1986). The relationship between memory and judgment depends
on whether the judgment task is memory-based or on-line. *Psychological Review, 93*,
258-268.

ity. In D. Pearl, L. Boothileit, & J. Lazar (Eds.), *Television and behavior: Ten years of
scientific progress and implications for the eighties* (Vol. 2, pp. 224-247). Washington,


Shrum, L. J. (2006). Narrative transportation moderates the influence of television viewing on material values. Unpublished manuscript.


