Media Consumption and Perceptions of Social Reality: Effects and Underlying Processes

L. J. SHRUM
Rutgers University

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.

Paraphrasing Howard Beale, Paddy Chayefsky's character in Network (Chayefsky, 1976)

Although in the movie it was unclear whether his words were those of a madman or a sage, hardly anyone nowadays seems to question Howard Beale's claim that television presents a distorted view of reality. What people—whether they be researchers, media critics, television executives, or the local bartender—do question is if the distortion has any effect, and if so, why and how.

These interrelated questions about the whether and how of media effects lie at the heart of scholarly debates and critiques of media effects research. Over the past few decades, there have been two persistent criticisms. One is that the evidence accumulated to date has provided little indication of sizable media effects on viewers' thoughts, feelings, or actions, in spite of a generally held "myth of massive media impact" by many researchers (McGuire, 1986). The second criticism of media effects research is that it for the most part has lacked any focus on explanatory mechanisms. That is, media effects research has been primarily concerned with relations between input variables (e.g., media information and its characteristics) and output variables (e.g., attitudes, beliefs, and behavior), with little consideration of the cognitive processes that might mediate
these relations (Hawkins & Pingree, 1990; Reeves, Chaffee, & Tims, 1982; see Wyer, 1980, for a similar view on social psychological research).

Although the purpose of this chapter is to address the criticism pertaining to the lack of a cognitive process explanation for observed media effects, the two criticisms just noted are not independent. One of the useful features of process explanations is that ideally models are developed that can specify both moderating and mediating variables. McGuire (1986) notes in his fairly exhaustive review that even though research to date has shown remarkably small media effects, there are a number of possibilities that may ultimately allow for the "salvaging" of the massive effects notion. In particular, he notes that small main effects may be obscured by messages having different effects on different groups or as a function of different situations (moderators) and by focusing on direct effects at the expense of indirect ones (mediators). Thus, the development of cognitive process models for media effects has the potential to uncover new relations as well as to make sense out of old ones.

The development of cognitive process models that can explain media effects has other advantages as well. For one, it has the potential to increase internal validity, or the extent to which we are confident that we are observing a true causal effect and not one that is spurious (Hawkins & Pingree, 1990), another common criticism of many media effects studies (see Hirsch, 1980; Hughes, 1980; McGuire, 1986). A process model should provide clear links between the stimulus (e.g., media consumption) and the response (e.g., beliefs, behavior), and each link in the model should represent a testable proposition to be empirically verified. If these links stand on solid theoretical foundations and are empirically verified, then threats to internal validity such as spuriousness and reverse causality are rendered less plausible, as the threats would presumably have to occur at each stage. Another advantage is that process models may potentially address conflicting findings in previous research. A process model should provide boundary conditions for the effect; that is, a specification of the conditions under which the effect does not hold. To the extent that these boundary conditions are related to aspects of inconsistencies in previous research, disparate findings may be reconciled.

Given these advantages of a focus on process, the goals for this chapter are twofold: (1) to discuss some of the general underlying principles that have emerged in social cognition research that have particular implications for media effects, with reference to relevant media effects research that exemplify these principles, and (2) to demonstrate the advantages of a process focus just discussed by outlining a cognitive process model that can explain a particular media effect, the cultivation effect (see chapter 3).
SOCIAL COGNITION AND MEDIA EFFECTS

Social cognition can best be described as an orientation toward the cognitive processes that occur in social situations (Reeves, Chaffee, & Tims, 1982). To be more specific, social cognition research attempts to open the “black box” that operates between a stimulus (e.g., information) and a response (e.g., a judgment) (Wyer, 1980) and, as such, has its focus on the cognitive processes that mediate the relations between social information and judgment (Wyer & Srull, 1989).

Social cognition research has not only had a profound effect on the field of social psychology, but on numerous other fields as well (e.g., marketing communications, political communications, cross-cultural psychology, and organizational behavior, just to name a few). Given the maturity of the field, there are a number of theories and models that have been developed to account for how people acquire, store, and use social information, the most complete of which is that provided by Wyer and Srull (1989; but also see Wyer & Radvansky, 1999, for revisions of this model). Even though the various theories differ in important ways, they all share some basic underlying principles (Carlston & Smith, 1996; Wyer, 1980).

For the purposes of this discussion, there are two important and interrelated principles underlying social cognition research. Principle 1 (Heuristic/Sufficiency Principle) concerns what information is retrieved in the course of constructing a judgment. This principle states that when people construct judgments, they typically do not search memory for all information that is relevant to the judgment, but instead retrieve only a small subset of the information available. Moreover, the criterion for what is retrieved is “sufficiency.” That is, only the information that is sufficient to construct the judgment is retrieved, and the determinants of sufficiency are related to concepts such as motivation and ability to process information (Wyer & Srull, 1989; see also Chaiken, Liberman, & Eagly, 1989, for a similar perspective on attitude judgments).

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1The comprehensive aspect of the Wyer and Srull (1989) model is that it specifies precise mechanisms for all stages in the information processing system (i.e., from input to output), and not necessarily that it is superior or more valid than other models. Most other models tend to focus on only selected aspects of the processing system (e.g., comprehension, storage, retrieval, response).

2These two principles are discussed at more length by Carlston and Smith (1996) and Wyer (1980), who each use slightly different names for the principles. I have taken the liberty of renaming the principles to provide a better fit with the definitions and context of the discussions.
Principle 2 (Accessibility Principle) concerns the role of the accessibility of information in the construction of judgments. In its simplest form, the principle states that the information that comes most readily to mind will be the information that comprises the "small subset" of available information that is retrieved and, in turn, is the information that is most likely to be used in constructing a judgment (Carlston & Smith, 1996; Higgins, 1996; Wyer, 1980).

Taken together, these two principles have important implications for explaining media effects. These implications revolve around the determinants and consequences of accessibility.

Determinants of Accessibility

There are a number of factors that may influence the ease with which something is recalled. Although a detailed discussion of these factors is beyond the scope of this chapter (for more extensive reviews, see Higgins, 1996; Higgins & King, 1981), certain ones have implications for media effects (Shrum, 1995). These factors are the frequency of construct activation, recency of construct activation, vividness of a construct, and relations with accessible constructs.

Frequency and Recency of Activation. Constructs that are frequently activated tend to be easily recalled (Higgins & King, 1981). This general finding has been shown both in studies of word recall and recognition (Paivio, 1971) as well as of trait concepts (Wyer & Srull, 1980). Moreover, if activated frequently enough, particular constructs may become "chronically accessible" (for a review, see Higgins, 1996) such that they are spontaneously activated under many different situations. The same general relation holds for recency of activation: The more recently a construct has been activated, the easier it is to recall (Higgins, Rholes, & Jones, 1977; Wyer & Srull, 1980). However, research suggests that the effect of recency of activation on accessibility is relatively transitory, with frequency effects tending to dominate after a short period of time (Higgins, Bargh, & Lombardi, 1985; Wyer & Radvansky, 1999).

This general relation of frequency and recency with accessibility has implications for potential media effects. For example, cultivation theory (see chapter 3) rests on the premise that the frequency of television viewing has effects on the beliefs of viewers. In terms of frequency of activation, heavier viewers should more frequently activate constructs portrayed on television than light viewers, particularly if those constructs tend to be portrayed more heavily on television than in real-world situations. Moreover, given that heavy viewers have a higher probability of
having viewed recently than light viewers, accessibility may be enhanced for heavy viewers through the recency of viewing as well (although these effects may be relatively short term).

**Vividness.** Vividness relates to the extent to which something is "emotionally interesting, concrete and imagery provoking, and proximate in a sensory, temporal, or spatial way" (Nisbett & Ross, 1980, p. 45), and constructs that tend to be more vivid are more easily activated from memory (Higgins & King, 1981; Nisbett & Ross, 1980; Paivio, 1971). Like frequency and recency, vividness has particular applicability to media effects. It seems reasonable to think that television portrayals of particular actions or events may be more vivid than real-world experiences, given the drama-enhancing goal of entertainment. Examples might include a fistfight, an execution, family conflict, a natural disaster, military conflict, and so forth.

Vividness may also play a role in news reports. As Zillmann and colleagues have noted (see chapter 2; Zillmann & Brosius, 2000), news reports often convey information in the form of case studies or extreme examples. Such a bias in favor of vivid examples over precise but pallid statistical information may make those examples relatively easy to remember.

**Relations with Accessible Constructs.** As the accessibility of a particular construct increases, so does the accessibility of a closely related construct. This concept is consistent with the associative network/spreading activation model of memory made popular in cognitive psychology as a means of explaining the interconnectedness of knowledge (Collins & Loftus, 1975). This model holds that constructs are stored in memory in the form of nodes, and links are formed between the nodes. When a particular node (stored construct) is activated, other constructs will also be activated to the extent that they are related to that node.

It seems likely that the relation between accessible constructs may have implications for media effects. One of the attributes of media portrayals, particularly on television programs and films, is the relatively consistent and formulaic way in which particular concepts (e.g., anger and aggression, particular classes of people) are portrayed. These portrayals may provide "scripts" (Schank & Abelson, 1977) or "situation models" (Wyer & Radvansky, 1999) for what represents a construct and how to react to it. Given the relations between accessible constructs, the activation of a particular construct (e.g., aggression, anger) may similarly activate scripts for behavior that are closely related to these constructs (e.g., crime, violence).
In summary, it seems reasonable to think that media consumption—whether it be the frequency, recency, or the content features of viewing—may serve to enhance the accessibility of particular constructs. This "media effect" is an example of the interrelatedness of the Heuristic/Sufficiency Principle and the Accessibility Principle: Media consumption enhances accessibility, which influences the information that becomes a part of that small subset of available information.

Consequences of Accessibility

Simply demonstrating that media information may play a role in enhancing the accessibility of particular constructs is not sufficient to provide an explanation of media effects. It is also necessary to show that enhanced accessibility in turn produces effects that are consistent with the media effects literature.

The consequences of accessibility are directly related to Principle 2: The information that is most accessible is that which is most likely to be used to construct a judgment. Moreover, the way in which the most accessible information is used is a function of the type of judgment that is made.

Judgments about Persons. One of the more consistent findings in the social cognition literature is that when people make judgments about other persons, they tend to use the constructs that are most readily accessible from memory (Accessibility Principle). In the now-classic priming studies (e.g., Higgins et al., 1977; Srull & Wyer, 1979, 1980), when participants were required to form trait judgments based on the ambiguous behaviors of a target person, they tended to use the trait concepts that had been "primed" (i.e., made more accessible) to interpret those ambiguous behaviors (for a review, see Higgins, 1996). The interpretations influenced participants’ judgments about the target’s behaviors (e.g., reckless, persistent) as well as judgments about how much they liked the target. These results have been replicated numerous times, even under conditions of subliminal presentation of the prime (Bargh & Pietromonaco, 1982).

Attitude and Belief Judgments. Evaluations of an object may be constructed from beliefs that are most accessible (Fishbein & Ajzen, 1975). In the Fishbein and Ajzen model, attitude construction is a function of particular beliefs and the evaluations of those beliefs. It follows, then, that which beliefs are put into the attitude construction equation may be a function of which beliefs are most accessible at the moment. In a series of experiments, Wyer and colleagues (Henninger & Wyer, 1976; Wyer & Hartwick, 1984) examined the relation between accessible beliefs and
evaluative judgments. In those experiments, which tested aspects of the *Socratic effect* (thinking about logically related beliefs makes those beliefs more consistent; McGuire, 1960), they showed that the accessibility of beliefs relating to premises increased the consistency between the beliefs in the premises and beliefs in the conclusions.

**Judgments of Set Size and Probability.** Set-size judgments pertain to judgments of the extent to which a particular category occurs within a larger, superordinate category (e.g., the percentage of women [subordinate category] in the U.S. population [superordinate category]; Manis, Shedler, Jonides, & Nelson, 1993). Probability judgments pertain to estimates of likelihood. A finding that has been documented consistently is the relation between the accessibility of a construct and judgments of set size and probability (Sherman & Corty, 1984). In their seminal work on the *availability heuristic*, Tversky and Kahneman (1973) demonstrated that people tend to infer the frequency of a class or the probability of occurrence on the ease with which a relevant example can be recalled. For example, participants in one experiment estimated that words beginning with *k* occur more frequently in the English language than words having *k* as the third letter, even though the opposite is true. Presumably, words beginning with *k* are easier to recall because of how words tend to be organized in memory (by initial letters).

**Media Effects and Accessibility Consequences**

The three types of judgments just discussed, and their relation to accessibility, by no means exhaust the discussion of the types of judgments that have been shown to be influenced by the accessibility of information (for a review, see Higgins & King, 1981). Rather, those judgments are singled out because of their relevance to the types of judgments that are typically used in media effects studies.

**Effects of News Reports on Issue Perceptions.** One domain in which information accessibility has been implicated is that of how information about particular issues presented in news reports (e.g., television, newspapers) affects judgments about those issues (e.g., attitudes, likelihood estimates). For example, research by Zillmann and colleagues has shown that information presented in the form of exemplars (e.g., case studies, vivid examples) tends to influence judgments to a greater degree than does more accurate but pallid base-rate information (for a review, see chapter 2). This general finding has been replicated for a variety of exemplar conditions, including manipulating the proportion of exemplars that are consistent with a story's focus (Zillmann, Gibson, Sundar,
Perkins, 1996; Zillmann, Perkins, & Sundar, 1992), the degree of exaggeration of the exemplars (Gibson & Zillmann, 1994), and the emotionality of the exemplars (Aust & Zillmann, 1996). Other research has produced similar findings, with Iyengar (1990) reporting effects of the presence (vs. absence) of exemplars and Brosius and Bathelt (1994) finding an effect of number of exemplars on issue perceptions. Most of this research has conceptualized the results in terms of accessibility and the use of heuristics: The more vivid or frequent examples are easier to remember than less vivid or infrequent examples, and thus tend to be used to construct judgments.

Findings reported by Lichtenstein, Slovic, Fischhoff, Layman, and Combs (1978) have also been conceptualized in terms of accessibility and the application of the availability heuristic. They observed that roughly 80% of study participants estimated that death due to an accident is more likely to occur than death due to a stroke, even though strokes cause about 85% more deaths than accidents. Lichtenstein et al. suggest that examples of accidental deaths are easier to recall than examples of death by stroke, and at least partially because the former tend to be reported more than the latter in the media.

**Effects of Television Viewing on Social Perceptions.** Another media effects domain in which accessibility has been used as an explanatory variable is in the relationship between television viewing and perceptions of social reality. This domain differs from news reports in that it considers all types of television viewing (e.g., fictional portrayals such as soap operas, action/adventure, dramas, situation comedies) rather than just news programs.

The results of a number of studies can be conceptualized in terms of the enhanced accessibility afforded by heavy television viewing and the subsequent application of judgmental heuristics, particularly when the dependent variables involve estimates of frequency of a class or likelihood of occurrence. For example, Bryant, Carveth, and Brown (1981) exposed participants, over a 6-week period, to either heavy or light viewing of films depicting crime, and those in the heavy exposure condition saw crime portrayals that featured either just or unjust resolutions. They found that those in the heavy exposure condition indicated a greater likelihood of being a victim of violence and more fear of victimization than those in the light exposure condition, regardless of whether the resolutions were just or unjust. As with the other studies just discussed, these results are consistent with predictions made by the availability heuristic: The heavy viewing conditions made examples of crime more accessible than the light viewing conditions, and this accessibility, or ease of recall, influenced judgments of prevalence and likelihood of occurrence. Other
studies have made this same connection between accessibility as a function of viewing and judgments (cf. Ogles & Hoffner, 1987; Tamborini, Zillmann, & Bryant, 1984).

The applications of concepts such as accessibility and the use of heuristics is not confined only to studies of crime and violence. Zillmann and Bryant (1982; for a review, see chapter 12) found that participants who viewed portrayals of explicit sex scenes gave higher estimates of the prevalence of unusual sex practices among the general population, were less likely to object to public display of pornography, and recommended shorter jail sentences for a convicted rapist than did participants who viewed films that were not sexually explicit.

**Effects of Media Portrayals on Aggression.** Although the research just reviewed has focused predominantly on cognitive measures as dependent variables, the concept of accessibility has also been useful in explaining the effects of exposure to media violence on behavior. Berkowitz's *cognitive-neoassociationistic perspective* (1984; see also chapter 5) on the effects of violent media consumption posits that frequent viewing of violent media portrayals primes particular constructs (e.g., aggression, hostility) and thus makes these constructs more likely to be used in behavioral decisions (i.e., actions) as well as judgments about others. Note that this notion is very similar to the original trait priming studies of Higgins and colleagues and Wyer and Srull that were discussed earlier: A particular trait concept is made accessible and thus is used disproportionately as a basis for subsequent judgments.

The relation between the activation of a construct such as aggression through media portrayals and the accessibility of aggression-related constructs has been demonstrated in several studies. For example, Bushman and Geen (1990) showed that viewing violent films elicited more aggressive thoughts than viewing nonviolent films. Berkowitz, Parker, and West (cited in Berkowitz, 1973) produced similar findings, showing that children who read a war comic book were more likely to select words with aggressive meanings than children who read a neutral comic book. Other studies have made the connection between activation (and presumed enhanced accessibility) of aggression constructs and subsequent judgments. Carver, Ganellen, Froming, and Chambers (1983) found that people who viewed a brief film portraying a hostile interaction between a business executive and his secretary perceived more hostility in an ambiguous target person than did people who viewed a nonhostile portrayal, and Berkowitz (1970) showed that similar effects of aggressive portrayals on judgments can be observed even when the aggressive behavior is in the form of comedy.

It is also worth noting that what is primed does not necessarily have to be directly related to an eminent judgment, but may only have to share
similar features to a judgment situation. Recall that one of the antecedents of a construct's accessibility is its relation to other accessible constructs. This notion is useful in explaining possible media effects in which the type of aggressive action viewers observe in media content is only tangentially related to the type of aggressive action taken by viewers, a pattern of results that theories of learning, imitation, or "modeling" (for a review, see chapter 6) have difficulty addressing (Berkowitz, 1984). In fact, as Berkowitz notes, the behavioral aggression measures that are used in studies are often quite different from the aggression observed in the media portrayals (whether they be experiments or field studies). For example, Phillips (1983) presented correlational data that showed that heavy media coverage of heavyweight championship boxing matches tended to be followed by an increase in homicides in the United States on certain days within a 10-day period following the fight (but see Freedman, 1984, for a criticism of this study). Similar aggression-related effects of viewing boxing matches have been reported in experimental studies as well (Turner & Berkowitz, 1972).

Indirect vs. Direct Investigations of Cognitive Processes

The research just presented is suggestive of the role of accessibility as a cognitive mediator of media effects. However, much of the evidence is still indirect in that many of the studies fall short of actually investigating the processes themselves, but rather offer process explanations for the obtained results. Exceptions to this generalization include Zillmann's work on excitation-transfer theory (Zillmann, 1983; Zillmann & Zillmann, 1996) and Berkowitz's cognitive-neoassociationistic perspective (Berkowitz, 1984).

The following section discusses a series of studies that directly investigate such potential cognitive processes. The results of these studies are then used as the basis for the development of a detailed cognitive processing model that can account for a particular media effect, the cultivation effect. This model builds on the general principles discussed earlier heuristic/sufficiency and accessibility) that underlie social cognition research.

HEURISTIC PROCESSING MODEL OF CULTIVATION EFFECTS

One area of media effects research that has generated considerable controversy is the research on the cultivation effect (see chapter 2). For the purposes of this discussion, a cultivation effect is defined as a positive relation between frequency of television viewing and social perceptions that are congruent with the world as it is portrayed on television, with the pre-
sumption that television viewing is the causal factor. Although considerable evidence has accumulated that supports the existence of at least a small-sized cultivation effect (Morgan & Shanahan, 1996), other researchers have challenged the validity of this effect. Some research suggests that the relationship between viewing and perceptions is not causal, but rather a spurious one resulting from third-variable influences (e.g., direct experience, education, available time to view, personality) on both television viewing and social perceptions (Doob & Macdonald, 1979; Hirsch, 1980; Hughes, 1980; Wober & Gunter, 1988). Other research suggests that the causal relation between viewing and social perceptions may be reversed; that is, aspects of the individual (including preexisting social perceptions) may influence the amount and content of viewing (Zillmann, 1980).

As noted earlier, one of the advantages of developing a cognitive process model of media effects is that it has the potential to render implausible certain alternative explanations for the effect (e.g., spuriousness, reverse causality). Two caveats should be noted, however. First, rendering a particular alternative explanation implausible in a study merely means that the explanation cannot completely account for a particular pattern of results; it does not mean that the alternative explanation may not be operating simultaneously but independent of other effects. Second, the power of a process model is in the cumulative effect of a pattern of results, not a focus on a single study. Thus, even though alternative explanations may be possible for any one study, in the interest of parsimony, the alternative explanations should address the entire pattern of results to be an effective challenge.

General Propositions of the Model

Two very simple and general propositions that are based on the principles of heuristic/sufficiency and accessibility form the basis of the model. The first general proposition is that television viewing enhances construct accessibility. As discussed earlier, aspects of television viewing may plausibly be related to the accessibility of constructs encountered in typical television fare. The second general proposition is that the social perceptions that serve as indicators of a cultivation effect are constructed through heuristic processing. Specifically, rather than constructing judgments through an extensive search of memory for all available relevant information (systematic processing), only a subset of relevant information is retrieved, and specifically, the information retrieved is that which is most accessible from memory. A corollary of this second general proposition is that, at least for cases in which the judgments pertain to perceptions of frequency of a class (set size) or likelihood of occurrence,
judgments are constructed through the application of the availability heuristic; that is, the magnitude of the judgments is positively related to the ease with which an example can be brought to mind (Tversky & Kahneman, 1973).

Testable Propositions

These general propositions can themselves be used to generate testable propositions regarding the relation between television viewing and social perceptions and the cognitive mechanisms that may mediate this relation.

Proposition 1: Television Viewing Influences Accessibility. Proposition 1 is a necessary condition for testing whether the availability heuristic can explain cultivation effects. This proposition was tested by operationalizing accessibility as the speed with which judgments could be constructed. Shrum and O’Guinn (1993) had participants provide prevalence and likelihood estimates of constructs frequently portrayed on television (e.g., crime, prostitution) and measured the time it took participants to answer each question. If television information was more accessible for heavy viewers than for light viewers, heavy viewers should not only provide higher estimates than light viewers (a cultivation effect), but should also construct their judgments faster (an accessibility effect). The results of the study confirmed these hypotheses, even when controlling for individual baseline latencies, grade point average, and use of other media. These same general relations have been replicated using a variety of dependent variables, different operationalizations of television viewing, and multiple control variables (cf. O’Guinn & Shrum, 1997; Shrum, 1996; Shrum, O’Guinn, Seminik, & Faber, 1991).

Other studies have attempted to operationalize accessibility in a more direct way. Busselle (2001) asked participants to recall an example of particular constructs, some of which were constructs frequently portrayed on television (shooting, affair, doctor) and measured the time it took participants to recall the example. Busselle and Shrum (2000) used a similar methodology, but also asked participants to indicate how easy it was to recall the example. Heavy viewers were expected to be able to recall a television-related example faster and easier than light viewers. The results from both studies indicated no differences between viewers in speed of recalling the examples, but subjective ease of recall was easier for heavy viewers than for light viewers (Busselle & Shrum, 2000). The fact that level of viewing was related to subjective ease but not to speed of recall suggests that the conscious act of recalling an example may not be the mechanism that is employed in the application of the availability heuris-
tic. Rather, the perception of ease may be the causal mechanism, which may or may not be adequately captured by response time (see also Schwarz et al., 1991, regarding issues of ease of recall).

**Proposition 2: Accessibility Mediates the Cultivation Effect.** Proposition 1 (viewing influences accessibility) is a necessary but not sufficient condition to implicate the availability heuristic as an explanation for cultivation effects. It is also necessary to demonstrate that accessibility mediates the relation between level of viewing and magnitude of judgments (Manis et al., 1993); that is, it is also necessary to demonstrate that the enhanced accessibility leads to higher estimates. Otherwise, it could be argued that television viewing impacts accessibility and the magnitude of the judgments independently.

Some indirect evidence of the mediating role of accessibility was provided by Shrum and O'Guinn (1993). When accessibility (speed of response) was controlled, the cultivation effect was, for the most part, reduced to nonsignificance. More direct evidence of mediation was provided by Shrum (1996). Following the procedure used by Manis et al. (1993), path analyses were used to demonstrate that the level of television viewing was related to accessibility (again, operationalized as response latencies), which in turn was related to the magnitude of the estimates. However, the path analyses also revealed that the mediation was only a partial one: Television viewing still had a direct effect on the magnitude of the estimates, even when the influence of accessibility was controlled.

Busselle (2001) also provided evidence of the mediating role of accessibility by manipulating the conditions under which the prevalence estimates for particular constructs (e.g., a shooting) were constructed. Some participants provided their prevalence estimates before recalling an example of the construct (judgment-first condition) whereas other participants recalled an example before providing their estimates (recall-first condition). Level of television viewing was expected to make an example easier to recall in the judgment-first condition, whereas recalling an example before judgment was expected to make an example equally accessible for all participants, regardless of television viewing level. The results confirmed these expectations.

**Proposition 3: Television Exemplars Are Not Discounted.** An implicit assumption in the notion that the availability heuristic can explain cultivation effects is that the examples that are retrieved and used as a basis for judgment are considered relevant or applicable to the judgment. This is an important assumption because research has shown that accessibility effects typically obtain only when this condition is met (Higgins, 1996).
Moreover, the judged applicability of the construct is a function of the overlap between its attended features and the features of the judgment.

In terms of the cultivation effect, the recalled construct would presumably be a television example. However, it is counterintuitive that people would perceive a television example (e.g., doctor, lawyer) as applicable to a judgment about its real-world prevalence. If they do not perceive the example as relevant, alternative information would be retrieved and used as a basis for judgment (Higgins, 1996; Higgins & Brendl, 1995; Shapiro & Lang, 1991).

One way in which a television example could be perceived as relevant to a real-world judgment is if people generally do not consider the source of the example they retrieve in the course of judgment construction. Note that perceived applicability is a function of the overlap between the attended features of the recalled construct and the features of the judgment. It may well be that the source characteristics of the retrieved construct may not be a salient feature that is attended to, particularly when judgments are made automatically and with little effort. This may be a function of either lack of motivation to attend to source features (consistent with low involvement processing; Petty & Cacioppo, 1986, 1990) or lack of ability to recall source information (consistent with research on errors in source monitoring; Johnson, Hashtroudi, & Lindsay, 1993; Mares, 1996; Shrum, 1997).

To test Proposition 3, Shrum, Wyer, and O'Guinn (1998) conducted two experiments in which source characteristics were primed prior to judgments. In the first experiment, the priming events consisted of a source-priming condition, in which participants provided information regarding their television viewing habits prior to providing prevalence and likelihood judgments of crime and occupations, and a relation-priming condition, in which participants were told that the constructs they would be estimating appeared more often on television than in real life. In a third, no-priming condition, participants provided their estimates prior to providing television viewing information. Analyses revealed that when participants provided estimates under no-priming conditions, a cultivation effect was noted, but when they provided estimates under either source- or relation-priming conditions, the cultivation effect was eliminated. Follow-up analyses indicated that the estimates of light viewers did not differ as a function of priming conditions, but the priming conditions served to bring the estimates of heavy viewers more in line with those of light viewers. This pattern of results can be seen in Fig. 4.1. A second study replicated this pattern of results, and further suggested that the

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3 The graph shown in Fig. 4.1 is merely a general representation of the effects across dependent variables and is for illustration purposes only. For details of the actual effects for each dependent variable, see Shrum et al. (1998).
priming conditions induced a source-discounting process (heavy viewers discounted television information to a greater degree than light viewers) rather than an automatic adjustment process (heavy viewers adjusted their estimates downward because they were aware they were heavy viewers, but light viewers saw no need to adjust).

**Proposition 4: Motivation to Process Information Moderates the Cultivation Effect.** Proposition 4 is based on research showing that there are certain conditions under which heuristic processing (as opposed to systematic processing) is expected to occur (Chaiken et al., 1989; Petty & Cacioppo, 1986; Sherman & Corty, 1984). If so, then manipulating the types of processing in which people engage should have implications for whether a cultivation effect is obtained. To be specific, if people generally process heuristically in the course of constructing their judgments of prevalence or likelihood of occurrence, then inducing people to process heuristically should produce a cultivation effect that does not differ in magnitude from the cultivation effect obtained when people receive no such manipulation. But suppose people are induced to
process systematically when constructing their judgments. Compared to heuristic processing, systematic processing is associated with the consideration of more information and greater scrutiny of the information that is considered. Systematic processing is used when it is important to determine the validity of information (Petty & Cacioppo, 1986) and has been shown to attenuate the effects of heuristics (Chaiken et al., 1989).

Under systematic conditions, it seems likely that the relation between level of viewing and social perceptions would be weakened or eliminated entirely. When people process systematically, they should be more likely to retrieve examples other than simply the first ones that come to mind, should be more likely to scrutinize the retrieved information, and thus should be more likely to ascertain and discount information from unreliable sources such as television programs, than when they process heuristically.

One condition that is related to whether heuristic or systematic processing strategies are adopted is the motivation to process information (Sherman & Corty, 1984): When motivation is high, systematic processing predominates; when motivation is low, heuristic processing predominates. Moreover, motivation is itself determined by a number of factors, including level of issue involvement (Petty & Cacioppo, 1990) and level of task involvement (Chaiken & Maheswaran, 1994).

To test Proposition 4, Shrum (2001) manipulated the processing strategies that participants used to construct their estimates of the prevalence of crime, marital discord, affluence, and certain occupations. Some participants were induced to process systematically via an accuracy motivation/task importance manipulation (Chaiken & Maheswaran, 1994), others were induced to process heuristically by asking them to give the first answer that came to mind, and a third (control) group received no manipulation, but were simply instructed to provide their estimates. Television viewing was then measured after the judgments were made. The results were consistent and as expected. Both the control group and the heuristic group produced cultivation effects that did not differ in magnitude from each other. However, the systematic group showed no cultivation effect. Moreover, the pattern of results was remarkably similar to those obtained by Shrum et al. (1998, Study 1): The estimates of light viewers did not differ as a function of condition, but the systematic condition affected only heavy viewers, bringing their estimates more in line with those of all light viewers, regardless of processing condition. This pattern of results can be seen in Fig. 4.2.4

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4As with Fig. 4.1, the graph shown in Fig. 4.2 represents the general pattern of results across dependent variables. For details of the actual effects for each dependent variable, see Shrum (2001).
Proposition 5: Ability to Process Information Moderates the Cultivation Effect. Just as with Proposition 4, this proposition is based on the conditions that facilitate or inhibit whether people process information using systematic or heuristic strategies. In addition to motivation to process information, the ability to process information is also associated with processing strategies (Petty & Cacioppo, 1986; Chaiken et al., 1989). One factor that relates to the ability to process information is time pressure (Moore, Hausknecht, & Thamodaran, 1986; Ratneshwar & Chaiken, 1991): the more time pressure, the greater the likelihood of adopting a heuristic processing strategy.

To test Proposition 5, Shrum (1999a) used an experimental procedure that not only tested the proposition but also has implications for data collection methods. The experimental manipulation of time pressure was operationalized as either a mail survey (low time pressure) or a telephone survey (high time pressure) using a general population random sample. Pretests had indicated that the two data collection methods differed with respect to time pressure, but did not differ in terms of respondents’ self-reported level of involvement. The reasoning and predictions for the experiment were similar to Shrum (2001). If the cultivation effect
is a function of heuristic processing, then larger effects should be noted under conditions that favor more heuristic processing (phone survey) than under conditions that favor less heuristic processing (mail survey). The results confirmed this speculation. Across five composite variables representing perceptions of societal crime, societal vice (e.g., prevalence of prostitution, drug abuse), marital discord, affluence, and the prevalence of particular occupations, the magnitude of the effects was significantly larger in the phone survey condition than in the mail survey condition for four of the five measures (as with Shrum, 2001, all but marital discord).

Other evidence also supports the notion that ability to process information has implications for the cultivation effect. Mares (1996) found that people who tend to make particular kinds of source confusions (mistaking fiction for fact) tend to exhibit a larger cultivation effect than those who do not have a tendency toward those types of confusions. Thus, even in instances in which people may be motivated to process information (see Shrum, 1997), inability to properly process information (in this case, accurately ascertain source characteristics) may facilitate a cultivation effect.

**Model Integration**

The next step in model development is to integrate the testable propositions, and the implications of their supportive results, into a coherent conceptual framework. This conceptual framework, which is presented in the form of a flow chart in Fig. 4.3, specifies a series of links, or steps, which lead from television viewing to the production of a cultivation effect. For the most part, each link (designated by an arrow) represents a testable proposition that has been empirically verified. As the figure indicates, there are in fact a number of ways in which media exposure will not have an effect on judgments (no cultivation effect), but only one way (path) in which a cultivation effect will be produced.

In order to present as simple a model as possible, some misleading aspects arise that should be clarified. One of the misleading aspects of Fig. 4.3 is that the links (Yes/No) and the outcomes (Effect/No Effect) are portrayed as dichotomous variables. In fact, it is more accurate to think of each as a continuum, and movement along the continuum has implications for the size of the outcome. For example, rather than interpreting the figure as “high motivation to process results in no cultivation effect,” it may be better interpreted as “the higher the motivation to process, the smaller the cultivation effect.”

This notion of a continuum is similar to the elaboration continuum that forms the basis of the Elaboration Likelihood Model (ELM; Petty &
FIG. 4.3. Flow diagram of the heuristic processing model of television effects. Circles represent mental processes. The thicker arrow from Heavy TV to Memory Search indicates a greater contribution to the search process.
Cacioppo, 1986). In fact, given that the model shown in Fig. 4.3 derives from the concepts of heuristic (peripheral) and systematic (central) processing, it is no accident that the model bears striking similarity to the ELM (as well as the Heuristic/Systematic Model, Chaiken et al., 1989). In general, the less the elaboration (due to such things as time pressure, mental ability, involvement, etc.), the greater the cultivation effect.

**Implausible Alternative Hypotheses**

Although some, if not all, of the studies that have formed the basis of the model have potential alternative explanations, it is difficult for concepts such as spuriousness or reverse causality to account for the general pattern. For example, the initial studies that tested Propositions 1 and 2 (accessibility) were strictly correlational and thus could be explained in terms of either spuriousness or reverse causality. However, these alternative explanations cannot account for the results of the experiments that tested Propositions 3 through 5, particularly the pattern showing that both the experimental manipulations of source priming and of processing strategy produced nearly identical results, with the manipulations reducing estimates of heavy viewers to the equivalent of light viewers, but leaving the estimates of light viewers unaffected.

The consistency of results across the different types of dependent variables also argues against explanations other than a causal effect of television viewing. Consistent results tended to be found for judgments of occupational prevalence (doctors, lawyers, police officers), crime, and affluence (and, to a lesser extent, marital discord). Although reverse causality or spuriousness explanations can be used (and often are) to explain the results for any one variable, it is difficult to account for the effects on all variables. Rather, the more parsimonious explanation is that the causal factor is the one that they most have in common: They are constructs overrepresented in television portrayals relative to their real-world incidence.

**Reconciling Conflicting Findings in Past Research**

As mentioned earlier, one of the useful features of a process model for cultivation effects is that it has the potential to reconcile conflicting findings that have been reported. The myriad of paths toward little or no cultivation effect that are shown in Fig. 4.3 has the potential to explain some of these conflicts.

*Source-Priming Explanations.* The source-priming manipulation used by Shrum et al. (1998) had participants provide information on how
much television they watch prior to providing their prevalence and likelihood estimates. This order of data collection was sufficient to eliminate the cultivation effect. As Morgan and Shanahan (1996) note, a number of studies that have reported finding no evidence of a cultivation effect either measured television viewing prior to measuring social perceptions or introduced the study as one pertaining to television. Although Morgan and Shanahan’s meta-analysis did not find support for such source-priming as a moderator, their results showed that the effect sizes for the non-source-primed studies tended to be slightly higher than the effect sizes for studies in which source was (inadvertently) primed. Thus, it seems possible that the inability to observe cultivation effects in previous studies may have been due to the inadvertent priming of source information.

Note also that it is not necessary to prime source characteristics through data collection. Priming simply refers to making a construct more accessible in memory. For some people, particular constructs may be chronically accessible (Higgins, 1996). So for whom might the construct of television, and its potential effects, be particularly accessible? One group may be communications majors, or for that matter, any student who might have had a course that deals with potential effects of television; in other words, people who may often comprise the subject pools that academics (and especially those in communications departments) use in their studies. Thus, it is plausible that null findings for cultivation effects in some studies may be due to the special characteristics of the sample.

*Involvement Explanations.* There are a number of factors that may relate to level of involvement with constructing judgments. For example, level of involvement may differ as a function of sample composition. College students may be less intimidated than older adults or younger people by the university setting that may be used to collect data (Shrum, 1997). Alternatively, individual differences may exist that relate to involvement, such as interest in the topic (e.g., crime by those with direct experience with it) or general interest in solving problems (e.g., those high on need for cognition; Cacioppo & Petty, 1982). Involvement may also vary as a function of data collection method. Data that are collected through anonymous questionnaires may induce less accuracy motivation than data collected in, say, personal interviews (Shrum, 1997, 2001).

*Time Pressure Explanations.* Shrum (1999a) showed that simple differences in data collection methods, presumably related to differences in time pressure, can have a significant impact on the magnitude of cultivation effects. In that study, the difference was whether the data were collected via a phone or mail survey. Other situations can contribute to time pressure, whether real or imagined. Although not entirely independent of
involvement, it has been my experience that a majority of the college students that comprise subject pools seem to be in quite a hurry to finish their task and leave. Moreover, within any type of data collection method, some people will be in more of a hurry than others, whether because of individual (e.g., personality) or situational (e.g., family duties) factors.

All of the Above. The point in discussing all of these explanations is that there are many factors that may contribute to reducing or eliminating the cultivation effect, and any or all may be at work at any time that a judgment is required. In fact, as one thinks of all the possibilities, it may seem surprising that we would ever observe a cultivation effect! Yet, that is one point of the model: Across studies, the cultivation effect tends to be rather small (McGuire, 1986; Morgan & Shanahan, 1996), and this may be largely explained by various conditions that may operate at the time of judgment.

When Cultivation? Generally speaking, one would expect (larger) cultivation effects when people process heuristically rather than systematically. Put differently, cultivation effects are expected when people do not give much thought to their judgments. But does that make the cultivation effect trivial? We know that judgments made through heuristic processing tend to be less persistent, less resistant to change, and less predictive of behavior than those made via systematic processing (Chaiken et al., 1989; Petty & Cacioppo, 1986), and thus relatively inferior in terms of quality. Yet, people make heuristic judgments all the time. Examples might include providing opinions for pollsters, voting decisions when little is known about a candidate, whether to avoid someone on a street, or how to react in a dangerous situation. In fact, as research in social cognition accumulates, it is remarkable as to how little information is used in the course of constructing judgments and how often heuristics are employed (Wyer & Srull, 1989). Moreover, recent work suggests that much of this process is automatic rather than controlled (Bargh & Chartrand, 1999).

CONCLUSION

The purpose of this chapter was to make a case for the importance of investigating the cognitive processes underlying media effects. This was accomplished in two ways: first, by providing a discussion of some general principles that have emerged from social cognition research, and how the principles can be used to explain particular media effects, and second, by demonstrating how these general principles can be used to develop a
cognitive process model to explain a particular media effect, the cultivation effect.

Some important shortcomings are worth noting briefly. First, the discussion of the application of process concepts to media effects other than the cultivation effect, which was provided in the first portion of the chapter, is necessarily impoverished. Not only do space limitations preclude a more thorough discussion, but much of this work is discussed in more illuminating detail in other chapters in this volume. Second, the model presented in the second portion of the chapter is very much incomplete. In arguing for the importance of this research perspective, I may have mistakenly given the impression that the model can successfully account for all, or even most, research on the cultivation effect. This is far from the case. The model is mute with respect to such things as so-called second-order cultivation judgments (e.g., attitude judgments; Hawkins & Pinigree, 1990; Shrum, 1995). Similarly, it does not address in any detail such things as question wording (e.g., fear of victimization vs. likelihood of victimization, Sparks & Ogles, 1990; societal vs. personal judgments, Tyler, 1980) or the moderating influences of direct experience associated with mainstreaming and resonance (Gerbner, Gross, Morgan, & Signorielli, 1980). Although the social cognition principles of accessibility and heuristic/sufficiency have been applied to these areas of research as well (cf. Shrum, 1999b; Shrum & Darmanin Bischak, 2001), they are not included in the model.

Hopefully, the general theoretical perspective put forth in this chapter will serve as an incentive to further investigate process issues, with the aim of reconciling the corpus of research that has accumulated, rather than simply adding to it. In order to move an area of research forward, it would seem useful to develop general theories that can account for the majority of findings to date. Simple input/output models are typically insufficient in this regard. Rather, focusing on the mediating processes and understanding the conditions that both facilitate and inhibit a particular effect may provide a fruitful path.

REFERENCES


