

LIVING WITH TELEVISION NOW

advances in cultivation theory & research

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8. Multiple Processes Underlying Cultivation Effects

How Cultivation Works Depends on
the Types of Beliefs Being Cultivated

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With research on cultivation effects now going on 40 years, cultivation has clearly established itself as a theory with staying power. As Morgan and Shanahan have noted, and this volume attests, following the usual fits and starts that mark the arrival of any new theory, cultivation research has moved into a period of increasing both its breadth and depth (Morgan & Shanahan, 2010). This includes investigations that range from the many different types of attitudes and beliefs that can be cultivated, to investigations of how these effects occur in viewers' heads. In this chapter, we focus on the latter. As we detail presently, like cultivation research, research on the psychological mechanisms underlying the effect also began in fits and starts. However, as more and more process research has accumulated, a clearer picture has begun to develop about how cultivation proceeds from viewing to doing.

In this chapter, we present two models of the psychological processes underlying cultivation effects and discuss research that has tested these models. The two models pertain to separate psychological processes. We argue that there are different types of cultivation effects, and these differences aren't just the usual function of the different messages that are portrayed on television (crime, affluence, mistrust), but also are a function of the different types of beliefs that are produced (attitudes, values, normative perceptions). In combination, these models can address some inconsistencies and peculiarities in prior process research. We conclude by discussing the utility of understanding the processes underlying cultivation effects and their implications for mitigating the effects.

A Social Cognition Perspective on Cultivation: First- versus Second-Order Cultivation Effects

In order to tap into different aspects of cultivation, Gerbner and colleagues used a number of operationalizations of their dependent variables (for a review, see Shanahan and Morgan, 1999). In some cases, they measured respondents' perceptions of how often various things occur or appear in the real world (e.g., the proportion of men employed in law enforcement, the percentage of people involved in violence each week), or asked respondents to assess their own levels of risk (e.g., "What are your chances of being involved in a violent crime in the next year?"). In other cases, the researchers asked respondents to make more general assessments about their views of the world, particularly with respect to crime and violence. Respondents were asked to indicate their level of agreement with beliefs such as "one can't be too careful," "people can't be trusted," or "the world is a mean and violent place."

Gerbner and colleagues understandably treated these various measures as indicators of the same general concept. That is, perceiving high levels of societal crime and personal likelihood of victimization, and holding strong beliefs that the world is a mean and violent place and that people can't be trusted, were viewed as convergent measures of a single underlying construct. However, Hawkins and Pingree (1982, 1990) observed that, from a psychological process perspective, these items actually represent different types of measures. They noted that first-order judgments (which they termed "demographic" measures) were usually measures of frequency or probability of occurrence. As such, they represent concrete, factual measures that can be objectively determined for both the real world and the television world (e.g., base rates in the U.S. for the probability of being involved in a violent crime vs. the probability of a television character being involved in violence). Thus, the extent of cultivation in terms of differences between television and real world estimates could be directly assessed (hence, *first* order). In contrast, second-order judgments (which they termed "value-systems" measures) represent more subjective measures of values, attitudes, and beliefs. Thus, they have no direct counterpart in the television world, but can only be inferred from analysis of television content (hence, *second* order).

Along with the differences in the forms of the measures, Hawkins and Pingree (1982, 1990) also made two other important observations. The first was that, based on their review of cultivation research to date, first-order cultivation effects appeared to be more robust and reliable than second-order effects. This was particularly true when multiple statistical controls were applied simultaneously. The second important observation was that the processes by which television influences the two judgments may be different.

This observation was motivated by their early process research that showed that first-order judgments did not predict second-order judgments, as they had initially speculated. Instead, the two measures were relatively independent. This led them to the speculation that both types of judgments may not be explained by the same process. Although the first assertion that second-order effects were not robust did not hold up over time (see Morgan & Shanahan, 1997 for a meta-analysis), the second assertion regarding different psychological processes turned out to be on the money.

In the following sections, we present two separate models for the processes that underlie first- and second-order cultivation effects. We argue that the types of judgments underlying first- and second-order cultivation effects (first- and second-order judgments) are fundamentally different and are constructed in very different ways. Moreover, we argue that because the processes of judgment construction are so fundamentally different, so too are the ways in which television viewing influences those judgments.

Memory-Based versus Online Processing Models

The most fundamental way in which first-order and second-order cultivation judgments differ is that first-order judgments are, for the most part, memory-based judgments, whereas second-order judgments are, for the most part, constructed through an online (real-time) process. Memory-based judgments are just as the label implies: They are constructed through the recall of information stored in long-term memory (Hastie & Park, 1986). For example, suppose you are asked to provide an estimate of the length of the Mississippi River. The answer to this question is one that most people do not have easy access to in memory (accessibility), if they have it stored in memory at all (availability). Consequently, they will attempt to answer the question by recalling information that may have bearing on the answer (they know it runs from the Great Lakes to the Gulf of Mexico, that it runs the lengths of several states, that the length of one of these states (Illinois) is about 400 miles long, etc.). In a similar manner, most people do not know the answer to a person's likelihood of being a victim of sexual assault or being a doctor. Thus, people will attempt to bring to mind information stored in memory that may help construct those particular judgments.

In contrast, imagine you're asked to indicate your attitude about the death penalty or whether it is safe to walk alone at night in your neighborhood. In both cases, it is likely that you have already constructed your attitude or belief. In this case, you would just recall your attitude and report it. But how did that attitude get constructed in the first place? In all likelihood, it is based on information you have read, heard, or experienced over time. There may

have been a particularly poignant story on the news, an editorial in the newspaper, or a personal experience with violent crime. In all of these cases, the judgment is based on information as it is encountered. This is known as online processing (Hastie & Park, 1986). In such cases, the information that is encountered in real time is used to form a judgment rather than relying on information that is stored in memory.

Given that the types of judgments that are fundamental to cultivation research are constructed through different processes, it seems plausible that the processes by which television information influences these judgments are correspondingly different. If so, it also implies that the mediators and moderators of the cultivation effect for each type of judgment may differ. In the next sections, we explicate independent models for each type of cultivation judgment and show that not only do particular mediators or moderators produce different effects as a function of type of cultivation judgment, but in some instances they have almost opposite effects.

The Accessibility Model for First-Order Cultivation Effects

The accessibility model rests on two general assumptions. The first is that television viewing increases the accessibility in memory of information relevant to a typical cultivation judgment (crime, wealth, occupations). Accessibility refers to the ease with which something can be recalled (accessed) from memory. The second assumption is that first-order cultivation judgments are memory-based ones that are generally constructed through heuristic processing. Heuristic processing refers to the tendency to take cognitive shortcuts when trying to answer difficult questions. That is, rather than making an exhaustive search of memory for information bearing on a particular judgment, people may take a cognitive shortcut and use only a subset of relevant information. More specifically, people will rely on the general ease with which the information is recalled, rather than the implications of the information itself, to form their judgments. This metacognitive tendency to base judgments on perceived ease of recall is referred to as the availability heuristic (Schwarz, 2004; Tversky & Kahneman, 1973), and it is a nonconscious, automatic process.

Based on these two general propositions, more specific propositions pertaining to cultivation processes and effects can be generated. Five particular propositions comprise the model: 1) television viewing influences accessibility; 2) accessibility mediates the cultivation effect; 3) television exemplars are not source-discounted; 4) motivation to process information moderates the cultivation effect; and 5) ability to process information moderates the cultivation

effect. In the following sections, we elaborate on these propositions and discuss supporting research.

Proposition 1: Viewing Increases Accessibility

The first proposition is that television viewing increases the accessibility of constructs frequently portrayed on television. For example, as Gerbner and colleagues clearly document in their Violence Profiles (for a review, see Shanahan & Morgan, 1999), violence is a common theme running through many different types of television programming, and thus is very frequently portrayed. In addition, because of their centrality and attention-getting features, these portrayals are often quite vivid. These two aspects of constructs (frequency and vividness) have been shown to increase construct accessibility (Higgins, 1996; Shrum, 1995; Wyer & Srull, 1989). Thus, viewing television should increase construct accessibility of those things relevant to cultivation research (crime, violence, marital discord, occupational prevalence, affluence), and should do so in proportion to viewing frequency.

Proposition 1 was first tested by Shrum and O'Guinn (1993). We tested the hypothesis that amount of television viewing would be positively correlated with the accessibility of information portrayed on television. Participants were asked to provide a variety of first-order cultivation judgments (e.g., percent likelihood of being a victim of a violent crime, percentage of Americans with a drinking problem), and the speed with which they provided the judgments was measured. The assumption was that the more accessible the information pertaining to the judgments, the faster the judgments would be constructed. Consistent with our reasoning, heavier viewers not only provided higher estimates for the judgments than did lighter viewers, they made them faster as well. These results held when a variety of individual difference variables were statistically controlled. These general findings have been replicated using multiple operationalizations of television viewing frequency, dependent measures, and control variables (O'Guinn & Shrum, 1997; Shrum, 1996; Shrum, O'Guinn, Semenik, & Faber, 1991). Other studies that have directly assessed ease of recall of television exemplars as a function of amount of television viewing also found support for the accessibility proposition (e.g., Busselle & Shrum, 2003).

Proposition 2: Accessibility Mediates the Cultivation Effect

The second proposition is based on the application of the availability heuristic (Tversky & Kahneman, 1973). The availability heuristic is the tendency to infer frequency of occurrence from ease of recall (accessibility of relevant exemplars). Because things that occur frequently are generally easy to recall, people may also infer that if things are easy to recall, then they probably occur frequently. If so, and if television makes certain exemplars easy to recall

(as Proposition 1 states), then the accessibility effect should lead to increased estimates of frequency or probability.

Support for this mediation process was also provided by Shrum and O'Guinn (1993). When the speed of response to the judgments (accessibility) was controlled, the cultivation effect was reduced to nonsignificance. More direct support, however, was provided by Shrum (1996). Path analyses were used to establish that a) television viewing influenced both speed of response (accessibility effect) and magnitude of estimates (cultivation effect) in the expected ways, b) that speed of response also was inversely related to magnitude of estimates (i.e., faster responses were associated with higher estimates), and c) that controlling for speed of response significantly reduced the cultivation effect. Meeting these three conditions demonstrates mediation (Baron & Kenny, 1986). This mediation effect held across two of the three different dependent measures (crime and occupational prevalence but not marital discord). A summary representation of the pattern of effects can be seen in Figure 1 (numbers represent averages for crime and occupational prevalence). All paths in Figure 1 are significant, including the path between television viewing and judgments. This latter path indicates that although accessibility (response latencies) mediated the cultivation effect, the mediation was only partial.

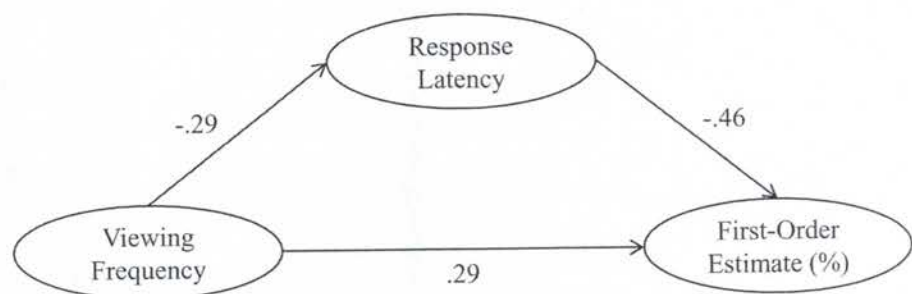


Figure 1. Path model showing mediating role of accessibility in the cultivation effect. Represents pattern of results across dependent variables (see Shrum, 1996).

Other research that has directly manipulated accessibility has also provided support for the second proposition. Busselle (2001) had some participants provide cultivation judgments in the usual manner, but asked other participants to first recall an example of the construct being estimated (e.g., the percentage of people who have extramarital affairs). The latter was expected to eliminate an accessibility advantage for heavier viewers by making exemplars equally accessible for all participants, and in doing so, eliminate the cultivation effect. Consistent with predictions, a cultivation effect was observed in the first condition but not in the second.

Proposition 3: Television Exemplars Are Not Source-Discounted

The third proposition is that television exemplars are not source-discounted when constructing judgments. That is, when people attempt to construct a first-order judgment by recalling a relevant exemplar, they do not ignore exemplars from television, including fictional representations. This is an important proposition because it addresses the counterintuitive notion that people would base their judgments of real-world prevalence on the ease with which a television example could be recalled. On the one hand, we know that viewers do not believe that television information is particularly reflective of the real world (Shrum, 2007a), and thus would be unlikely to consider television information applicable to a real-world judgment. On the other hand, we also know that accessibility influences judgment only when the accessible information is considered applicable to the judgment (Higgins, 1996). Thus, for all of these conditions to hold simultaneously, it must be that people do not generally attend to the source of the information they retrieve. This would be consistent with a heuristic process model in which people base their judgments on the ease of exemplar retrieval without attending to the individuating details (including the source) of each exemplar.

Support for this proposition was provided in two experiments (Shrum, Wyer, & O'Guinn, 1998). To test the hypotheses that people generally do not source discount when constructing cultivation judgments, we created conditions in which we induced people to source discount, and then compared these conditions to the usual (control) conditions. To do so, for some participants, we manipulated the salience of television information prior to them making their judgments. We reasoned that if people normally do not usually attend to source characteristics, then we should observe the usual cultivation effect when source characteristics are not made salient (control condition). However, calling attention to their television viewing habits should make source characteristics salient, and they should thus discount the television information under these circumstances.

The results were consistent with our predictions, and the general pattern of results can be seen in Figure 2. When we simply asked respondents to make the standard cultivation judgments, and then asked them to estimate their television viewing frequency (no priming), we observed a sizeable cultivation effect. However, when we made their television viewing habits salient by asking them to report their frequency of viewing before they reported their cultivation judgments (source priming), or reminded them that television information might influence their judgments (relation priming), the cultivation effect was eliminated. An additional point about the results is worth noting. As the figure shows, source discounting occurred only among the heavy television viewers; the difference across conditions for light viewers was not sig-

nificant. This is consistent with our theoretical reasoning. Light viewers should have relatively few television-based exemplars stored in memory in the first place. Consequently, they should be relatively unaffected by conditions that encouraged them to discount television-based information.

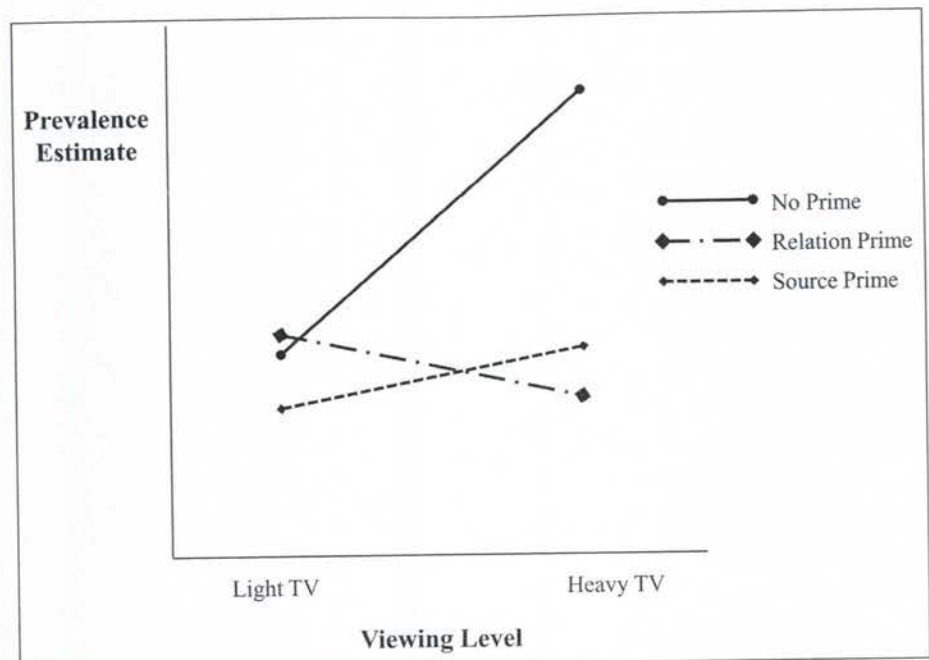


Figure 2. Prevalence estimates as a function of priming condition and level of TV viewing. Represents pattern of results across dependent variables (see Shrum et al., 1998).

Thus far, propositions 1–3 have focused on testing characteristics of the heuristic process itself and whether it plays a role in the cultivation effect. Propositions 4 and 5 focus on situations in which heuristic processing is more or less likely to be used in the judgment construction process. As mentioned earlier, heuristics are considered to be effort-reduction processes for constructing difficult judgments, and they are employed without conscious awareness (Kahneman & Frederick, 2002). Consequently, heuristics are more likely to be employed when motivation to form a difficult judgment is low. An example is a situation in which respondents do not care a great deal if their judgments are accurate. Heuristic processing is also more likely to be employed when the ability to form a difficult judgment is low. An example is a situation in which processing conditions are hurried or distracting. Propositions 4 and 5 propose that motivation and ability moderate the cultivation effect in just these ways.

Proposition 4: Motivation to Process as Moderator

Proposition 4 is based on research that indicates that there are certain conditions under which the tendency toward heuristic processing is attenuated (Sherman & Corty, 1984). One condition is motivation to process information. As noted earlier, the tendency to use heuristics is a cognitive shortcut to reduce processing effort. However, if people are sufficiently motivated, they will expend effort to more systematically process information, and thus avoid cognitive heuristics. More pertinent to our case, if sufficiently motivated, respondents will attempt to retrieve relevant information from memory and avoid relying simply on the ease with which an example can be brought to mind. In such cases, the accessibility of television information should play less of a role.

To test Proposition 4, motivation to process information was induced by manipulating participants' motivation to be accurate in their judgments (Shrum, 2001). A third of the participants provided their judgments in the standard manner (control group). We expected that these participants would process heuristically and demonstrate a cultivation effect. Another third of the participants were asked to provide their answers by giving the first figure that came to mind, "off the top of their heads" (heuristic group). We expected this group to also demonstrate a cultivation effect and one similar in magnitude to the control group. That is, if people spontaneously process heuristically when making typical cultivation judgments, then asking them to do what they normally do anyway should have little effect. In contrast, for the third group, we increased their motivation to be accurate by telling them their answers would be compared to the average student, that the experimenter would discuss their answers with them after the experiment, and that they would be expected to justify their answers (systematic group). We expected that participants in this condition would be motivated to think more carefully and consider information other than that which was most accessible (i.e., not process heuristically), which should reduce the cultivation effect.

The results were consistent with expectations and are summarized in Figure 3. The control and heuristic groups exhibited sizeable cultivation effects that did not differ from each other in magnitude. However, the cultivation effect was eliminated in the systematic condition. Also, just as in Figure 2, it is worth noting that the systematic manipulation only affected heavy viewers. The differences across conditions for light viewers were not significant, and in fact the pattern of the interaction between the control and priming conditions in Figure 2 is almost identical to the pattern of the interaction between the control and systematic conditions in Figure 3. These results are again consistent with the model: Light viewers were not influenced by television information in control conditions (because they don't have much of it stored in memory), so inducing them to think harder should have little effect on the use of accessible television information when they form their judgments.

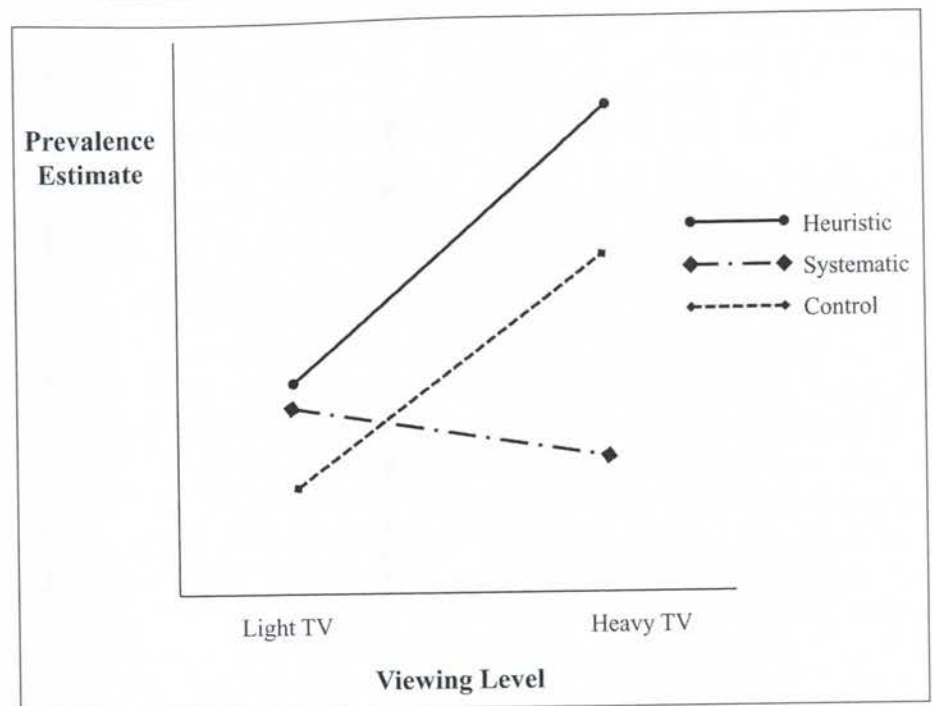


Figure 3. Prevalence estimates as a function of processing condition and level of TV viewing. Represents pattern of results across dependent variables (see Shrum, 2001).

Proposition 5: Ability to Process as Moderator

Proposition 5 follows from the same research on which Proposition 4 was based. In this case, however, we were interested in conditions that may increase (rather than decrease) the propensity to process heuristically. Because heuristics are task simplification procedures, it follows that making a judgment task more difficult should facilitate heuristic processing. One such condition that facilitates heuristic processing is making the judgment task difficult by reducing the ability to process information. Shrum (2007b) accomplished this via a field experiment that manipulated type of survey method: whether data were collected via mail or telephone surveys. Pretests had shown that both survey methods elicited the same level of involvement, but participants in telephone survey conditions reported greater levels of time pressure than did participants in mail survey conditions. We therefore reasoned that respondents would be more likely to process heuristically in telephone survey conditions because time pressure would make the judgments more difficult for telephone survey respondents than for mail survey respondents.

These predictions were confirmed. Across six different dependent variables, cultivation effects were larger in telephone conditions (average $\beta = .26$) than in mail conditions (average $\beta = .10$) for five of the six dependent variables. The

average effect size for the mail condition is in line with most general population mail surveys (Morgan & Shanahan, 1997), but increases by a factor of six in telephone survey conditions. Thus, the greater sense of time pressure generated by a telephone survey seems to increase the extent of heuristic processing, which in turn augments the observed cultivation effects.

Model Integration and Summary

The five propositions test different aspects of the accessibility model. An integration of all five propositions into one overarching framework is shown in Figure 4. The model is presented as a flow chart that specifies a series of links which ultimately connect television viewing with judgments, and the particular route taken determines whether a cultivation effect is observed.

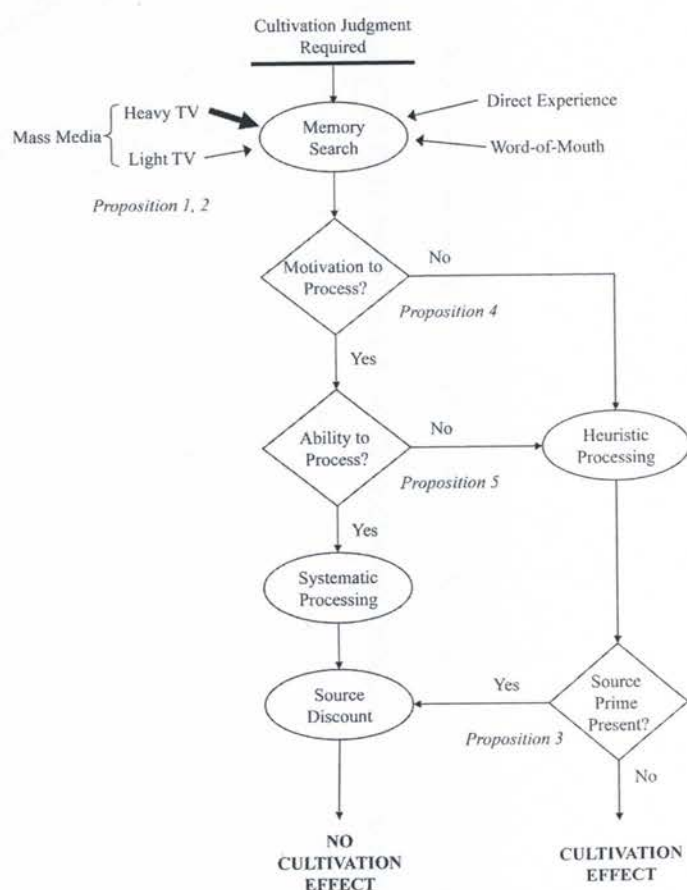


Figure 4. Flow diagram of the heuristic processing model of television effects. Circles represent mental processes. The thicker arrow from Heavy TV to Memory Search indicates a greater contribution to the search process.

The accessibility model addresses the processes underlying cultivation effects for first-order judgments. First-order judgments are memory based and particularly influenced by the accessibility of relevant information (exemplars) in memory. Television viewing increases the accessibility of this information, which, in turn, increases the magnitude of estimates, and this process occurs automatically with little attention to the details of the information, including its source. However, conditions can occur in which people do not rely as much on heuristics such as accessibility. Thus, when people are sufficiently motivated to make accurate judgments, and have the ability to do so, they will rely less on simple heuristics and make the effort to seek out more valid information on which to base their judgments.

The accessibility model helps explain why television influences first-order judgments. However, aspects of the model beyond the five propositions also are important in understanding previous cultivation findings. One in particular is the implication of the memory-based nature of first-order judgments. This process implies that judgments are constructed through recall of information, and that this occurs at the time the judgment is elicited, not during the viewing process. In other words, the cultivation effect manifests itself (in the form of higher estimates for heavier viewers) when people are required to make a judgment, usually for some external reason (asked by an experimenter, teacher, relative). Consequently, variables that measure aspects of processing during viewing, such as viewer involvement, may have relatively little effect. In fact, the results of prior research show just that: Involvement has little impact on the cultivation effect (Carveth & Alexander, 1985; Rouner, 1984; Shrum, 1996, 2001). That is not to say that viewing variables necessarily have no effect at all. Viewing process variables such as attention, involvement, and transportation may affect the accessibility of information in memory, which may in turn affect first-order judgments. However, thus far researchers have not been able to detect such effects consistently.

Although understanding the processes that underlie first-order cultivation judgments is important, it does little to illuminate the processes underlying second-order cultivation judgments. This is unfortunate for two reasons. First, whether and how television exerts its influence on the formation of attitudes and beliefs, and becomes integrated into general value systems, are arguably more important than whether and how it influences general societal perceptions. Moreover, second-order judgments also seem to better capture the original notion of cultivation and its pernicious nature (Gerbner & Gross, 1976). Second, it is important to move beyond first-order measures because they are actually quite rare, are infrequently made, and are difficult to produce, even in the lab (Hastie & Park, 1986). Thus, second-order judgments, arguably the most important and most ubiquitous types of cultivation judg-

ments, have received relatively little attention with respect to underlying processes. In the next section, we describe new developments in our efforts to construct and test a process model for these types of judgments.

The Online Process Model for Second-Order Cultivation Effects

In contrast to memory-based judgments, in everyday life online judgments are frequently made, occur spontaneously, and require little effort. Examples of online judgments include attitudes, values, and beliefs. Online judgments occur as information is received and processed. Common examples include impression formation and stereotyping ("what do I think about this person or group of people?"), assessment of a situation ("is it safe?"), and attitudes toward objects or lifestyles (valuing being rich or famous). In terms of television viewing, these types of judgments would be influenced by television portrayals during the viewing process and made spontaneously. This type of process generally describes a model in which television portrayals function as a persuasive communication that may potentially affect the values, attitudes, and beliefs of viewers.

If the persuasion model analogy is accurate, it has implications for the processes that underlie second-order cultivation effects. For one, it suggests that frequent viewing of consistent and repetitive messages would lead to attitude shifts toward the dominant messages and themes of television. However, it also goes beyond the simple prediction of a cultivation effect. Theories of attitude formation and change, such as the Elaboration Likelihood Model (Petty & Cacioppo, 1986), provide specific predictions about how different processing factors may affect persuasion. For example, the Elaboration Likelihood Model states that increased motivation to process information can enhance persuasion (at least when the persuasive arguments are strong). When motivation is high, people will follow the central route to persuasion and think more carefully about arguments and process them more deeply. Applied to the cultivation effect, greater motivation to process information should result in a larger cultivation effect. Similarly, the ability to process information also enhances persuasion. For example, when people are able to pay close attention to a message and are not distracted from it, persuasion is enhanced. Applied to the cultivation effect, higher ability to process information should result in a larger cultivation effect. *It is worth noting that these two predictions are exactly opposite of the effects of motivation and ability that were predicted and observed in the case of first-order cultivation effects, as just reviewed (cf. Shrum, 2001, 2007b).*

Model Tests

Motivation and ability. The first studies to address the online processing model tested the proposition that both motivation and ability to process information during viewing would moderate second-order cultivation effects (Shrum, Burroughs, & Rindfleisch, 2005). Specifically, the studies examined the effect of television viewing on material values (Richins & Dawson, 1992). Although a number of studies have investigated the relation between television viewing and perceptions of societal affluence (a first-order judgment), cultivation research on materialism itself has been scarce. Because television portrays clear messages that possessions increase happiness and signal success (O'Guinn & Shrum, 1997), we expected that television viewing frequency would be positively correlated with levels of materialism.

However, we also expected that motivation and ability would moderate this effect. Higher levels of motivation and ability to process information were each expected to increase cultivation effects. Motivation to process was operationalized as need for cognition (Cacioppo & Petty, 1982), which is an individual difference measure of the extent to which people enjoy processing information, being cognitively active, and solving puzzles. Ability to process was operationalized as chronic attention to programming while viewing (Rubin, Perse, & Taylor, 1988). The results supported the model and the general pattern can be seen in Figure 5. Cultivation effects (positive correlations between television viewing and materialism) were stronger for those higher in need for cognition and those who generally pay more attention during viewing. However, as the figure shows, cultivation effects were obtained for everyone: They were just stronger for the high need for cognition and high attention groups. A follow-up experiment confirmed that viewers with a high need for cognition tend to elaborate more during viewing than viewers with a low need for cognition; the former also produce more positive elaborations and generally are more immersed in the programs.

Narrative transportation. Although the Shrum et al. (2005) studies provided support for the model, the studies were hampered by several limitations. For one, the primary study (Study 1) that tested the moderating roles of motivation and ability to process information was correlational, and thus makes assertions of causality problematic. Second, and relatedly, the survey nature of the study precluded any determination of what actually goes on during viewing, but instead relied on self reports of general dispositions while viewing.

To remedy these shortcomings, Shrum, Lee, Burroughs, and Rindfleisch (2011) conducted an experiment that manipulated levels of materialistic content. As part of a study to ostensibly investigate the relations between ads and television content, some participants viewed a 20-minute excerpt from *Wall*

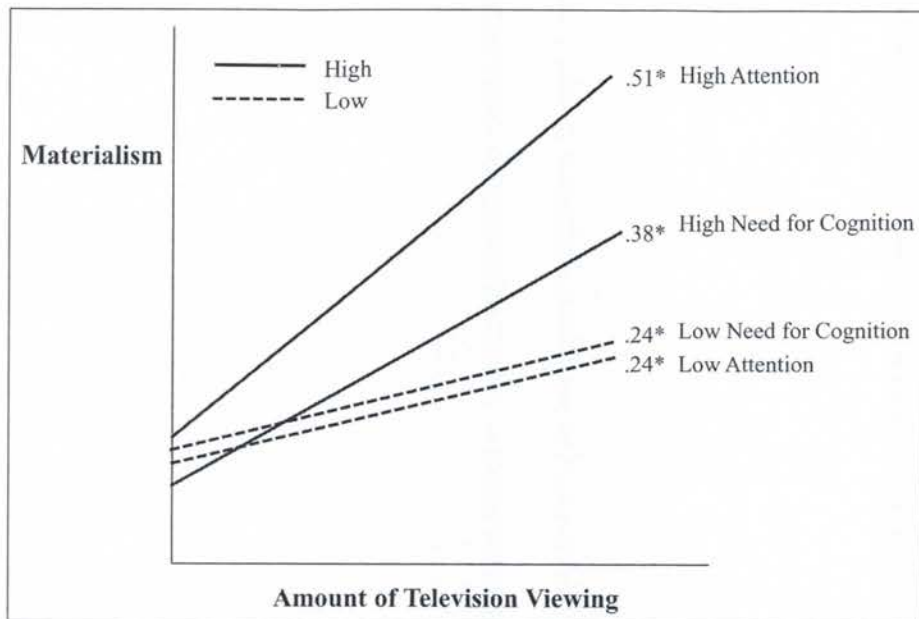


Figure 5. Materialism as a function of need for cognition and television viewing and as a function of attention and television viewing. Represents general pattern of effects (see Shrum et al., 2005).

Street (high materialism), and other participants viewed a 20-minute excerpt from *Gorillas in the Mist* (low materialism). In addition, participants indicated the extent to which they were “transported” into the narrative (Busselle & Bilandzic, 2008; Green & Brock, 2000). Narrative transportation is an individual difference variable that measures the extent to which audience members (readers, listeners, viewers) are absorbed into the world of the narrative. Transported viewers become engrossed in the story, are highly involved and cognitively engaged, think vivid thoughts, and react emotionally to the narrative (Green & Brock, 2000). To achieve and maintain this state of transportation, viewers may suspend disbelief and actively avoid counterarguing, thereby ignoring facts that may contradict the narrative’s message (Green, Garst, & Brock, 2004). Research shows that transportation is associated with more positive feelings toward sympathetic characters in the narrative, more narrative-consistent beliefs, and fewer negative thoughts.

Based on these findings, we expected that viewing the more materialistic narrative (*Wall Street*) would increase levels of materialism relative to those who viewed the less materialistic narrative (*Gorillas in the Mist*), but that this effect would be moderated by narrative transportation. Those who were more transported into the narrative were expected to be more influenced by the narrative theme. The

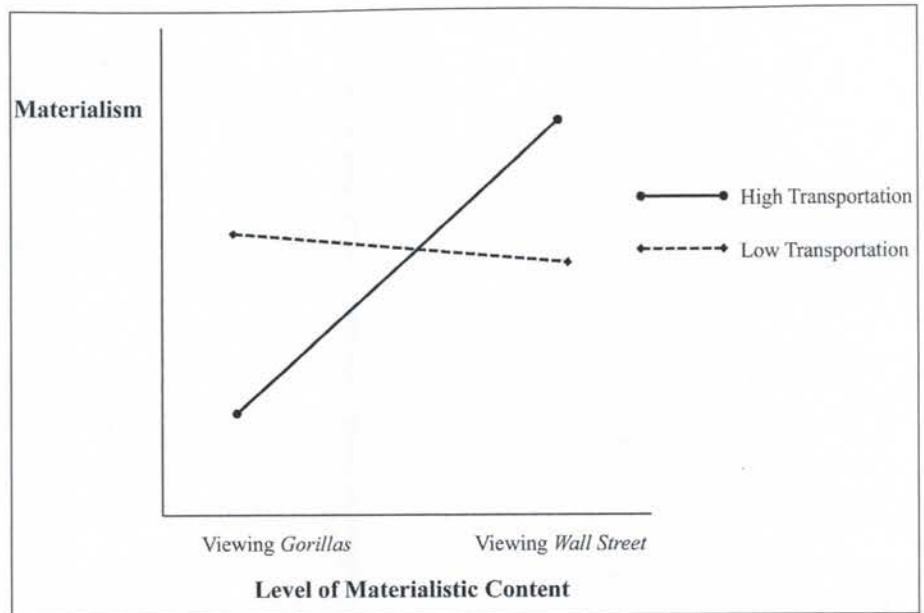


Figure 6. Materialism as a function of narrative transportation and media exposure. Represents general pattern of effects (see Shrum et al., 2011).

results were in line with expectations, and the general pattern of results can be seen in Figure 6. As the figure shows, only those who reported being transported into the narrative were influenced by the manipulation of materialistic content.

Summary

Taken together, the studies just described that tested various aspects of the online processing model provide good support for the general theoretical framework. For online, second-order cultivation judgments such as values, attitudes, and beliefs, the influence of television on judgment occurs during viewing, as information is processed. These judgments are internally and spontaneously generated, and are affected by the extent to which people are involved in the program, pay attention to it, and are transported into the narrative. Contrast this with memory-based, first-order cultivation judgments such as frequency and probability estimates. These judgments are usually externally generated through some elicitation, and thus television influences judgments at the time of that elicitation through recall of relevant information in memory, some of which comes from television programs. The judgments are affected by the extent to which people have the motivation and ability to search through memory for information pertaining to the required judgment. Clearly, first- and second-order judgments are influenced by television viewing through quite different processes.

Implications and Future Directions

Having spent considerable time explicating the processes underlying first- and second-order cultivation effects and describing their explanatory models, it seems fair to ask why these issues are important in the first place. There are at least three reasons we would like to propose for why process issues matter. First, process models provide important steps toward strengthening the validity of the cultivation effect (Hawkins & Pingree, 1990). If process models can be developed that specify and demonstrate clear links between television viewing, mediating factors, and cultivation judgments, then threats to internal validity such as reverse causality and spuriousness are greatly reduced.

A second contribution of process models, particularly the notion that separate models are needed for first- and second-order cultivation judgments, is that they may explain a number of inconsistencies and seemingly counter-intuitive findings. For example, it seems intuitive that viewer involvement should enhance the cultivation effect, yet few studies have found this to be the case (e.g., Carveth & Alexander, 1985; Rouner, 1984; Shrum, 1996, 2001). However, taken together, the online and accessibility models suggest that viewer involvement should affect only second-order judgments. Because much of the early cultivation research found robust cultivation effects only for first-order measures (Hawkins & Pingree, 1982), the potential effect of viewer involvement on second-order measures may have been overlooked because of small and often nonsignificant effects.

A third reason process models are important is their potential for inhibiting or facilitating cultivation effects. Process models establish conditions under which the effect should or should not hold. Once these boundary conditions are established, intervention methods can be employed to reduce or eliminate the effect under naturally occurring conditions. For example, process models could inform media literacy programs that teach viewers how to reduce unwanted effects of television viewing. However, cultivation effects are not solely negative, and thus television programs might be used for prosocial purposes, such as reducing drinking, smoking, and other vices, promoting racial equality, or increasing pro-environmental behavior, by inducing cultivation-type effects. Process models suggest conditions that would facilitate the effect (e.g., via narratives rather than rhetoric, increasing narrative engagement).

Thus, understanding that different types of cultivation-related judgments have different underlying processes becomes particularly important. For example, for memory-based (first-order) judgments, individuals need to understand that these types of judgments are influenced by the accessibility of information when they attempt to construct their judgments, and this accessibility may have an unwanted influence from television viewing. If so, then individuals

need to consider information other than the most immediately accessible when constructing judgments. In contrast, for online (second-order) judgments, which are influenced by program content during viewing, people may need to either reassess their attitudes and beliefs after viewing and attempt to adjust for unwanted influence at that point, or actively counterargue and resist particular messages that they may be unconsciously adopting during viewing but are antithetical to their personal values and beliefs (e.g., the attractiveness of torture or revenge in the pursuit of a just end). Of course, the latter may likely produce an unsatisfying viewing experience! Nevertheless, process models suggest particular avenues for managing the influence of television messages on social judgments.

In terms of future research, there is clearly more to be done in understanding the different processes that underlie second-order cultivation effects. It is readily apparent when comparing the research on first- and second-order cultivation processes that the latter is still in its infancy. The research on second-order processes represents only a first step in the process of better understanding how the cultivation of second-order judgments works. If, as our model suggests, factors that influence the processing of information during viewing moderate the cultivation effect for second-order judgments, then there are likely quite a number of factors that could be examined. Further investigations into these process variables should contribute to a much richer and more advanced process model for second-order judgments.

Another possible route to studying cultivation effects and their underlying processes is the use of more implicit measures of values, attitudes, and beliefs. For example, the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) is designed to measure attitudes that may be subject to a socially desirable response bias (e.g., reporting racial attitudes) or are attitudes which people are truly unaware that they hold (Erdelyi & Zizak, 2004). Employing such methods may allow cultivation researchers to uncover effects that had previously gone undetected.

Because of premature reports of the death of television, people may think that cultivation research is also on its last legs. However, as Morgan and Shanahan (2010) point out, this is far from the case. Although new media have changed the communication and entertainment landscape, television viewing levels have remained relatively unchanged over the last decade, and if anything, absolute hours of viewing have increased (Nielsen Wire, 2009). One challenge for cultivation researchers in the next decade is to determine whether there are any interesting interactions between the new media and the old, whether the new media enhance traditional cultivation effects, and whether new media may create some of their own. A related challenge is to better understand the cognitive processes involved in consumption of new media. Clearly, the ways in

which new and old media are processed may be quite different, whether they are functions of the media themselves (e.g., computer vs. television) or the situations in which they are traditionally processed (e.g., multi-tasking). As with cultivation research, establishing both the existence of the effect and its underlying processes should be dual goals.

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