

The Effects of Television Consumption on Social Perceptions: The Use of Priming Procedures to Investigate Psychological Processes

L. J. SHRUM
ROBERT S. WYER, JR.
THOMAS C. O'GUINN*

Two studies investigated the extent to which heavy television viewing affects consumers' perceptions of social reality and the cognitive processes that underlie these effects. Both studies found evidence that heavy viewers' beliefs about social reality are more consistent with the content of television programming than are those of light viewers. The use of a priming methodology provided support for the notion that television is a causal factor in the formation of these beliefs and that a failure to discount television-based exemplars in forming these beliefs accounts for its influence. Implications of these results for a heuristic processing model of television effects are discussed.

American family watches over seven hours of television per day, and the average individual watches over four hours per day (Nielsen 1995), making television programming one of the most heavily consumed "products" in the United States. Although many marketers consider television programs to be nothing more than audience delivery vehicles, research suggests that television consumption may have some detrimental consequences for viewers. In fact, the content of television programs

and its possible effects on consumers have been a major concern of both social scientists and public policy officials for the last three decades. The issues have, for the most part, centered on the prevalence of crime, violence, and sexual content on television, and the possible negative effects of this content on attitudes, beliefs, and behaviors (for reviews, see Morgan and Shanahan [1996]; Wood, Wong, and Chachere [1991]). However, other aspects of television programming, such as the representation and portrayal of minorities (Greenberg and Brand 1994), wealth and affluence (O'Guinn and Shrum 1997; Shrum forthcoming), and occupational roles (Gerbner and Gross 1976; Shrum 1996) have been the focus of research and public policy debate as well.

The studies reported in this article investigated the possible effects of heavy television consumption on viewers' social perceptions. However, we attempt to go beyond merely establishing that such effects exist by focusing our efforts on the processes that underlie the effects of television viewing. In so doing, we address several criticisms of past research concerning the interpretation of these effects.

TELEVISION EFFECTS RESEARCH

A large number of studies have claimed to show an effect of television viewing on viewers' attitudes, beliefs, and perceptions. The most prominent of these studies have been conducted by Gerbner and his colleagues,

*L. J. Shrum is assistant professor of marketing at Rutgers University, Department of Marketing, New Brunswick, NJ 08903. Robert S. Wyer, Jr., is professor of psychology at the University of Illinois at Urbana-Champaign, Champaign, IL 61820. Thomas C. O'Guinn is professor of advertising and research professor at the Institute of Communications Research, University of Illinois at Urbana-Champaign, Urbana, IL 61801. The research and preparation of this article were supported by grants from the Harry Frank Guggenheim Foundation and the Rutgers University Research Council to the first author and from the National Institute of Mental Health to the second. Study 1 was presented at the 1993 annual meeting of the International Communication Association, Washington, DC. Study 2 was presented at the 1996 winter meeting of the Society for Consumer Psychology, Hilton Head, SC. This article is based in part on a doctoral dissertation completed by the first author while at the University of Illinois at Urbana-Champaign. The authors would like to thank Tina Lowrey, Barb Bickart, and other members of the University of Illinois Social Cognition Group for their input. The helpful comments of Brian Sternthal, the associate editor, and the reviewers are also appreciated.

whose cultivation theory suggests that viewers come to "cultivate" television information by integrating it into their perceptions of real-world phenomena (for a review, see Gerbner et al. [1994]). Cultivation theory is based on findings that television presents a systematic distortion of reality. Content analyses have shown that such things as crime and violence, affluence, marital discord, and particular occupations such as doctors, lawyers, and police officers occur with much greater frequency on television than in the real world (Gerbner et al. 1994; Lichter, Lichter, and Rothman 1994). The theory suggests that the more people watch television, and hence are exposed to these distortions of reality, the more they will come to view the real world as similar to the world portrayed on television and thus perceive a greater real-world incidence of the overrepresented entities. These perceptions, in turn, can influence both attitudes (e.g., fear, desire for wealth) and behavior (e.g., aggression, purchase behavior).

A number of studies have provided support for cultivation theory. Heavy television viewing has been linked to greater perceptions of the prevalence of violence (Gerbner et al. 1980; Shrum 1996; Shrum and O'Guinn 1993), greater perceived danger (Gerbner et al. 1980; Shrum 1996), and greater anxiety and fearfulness (Bryant, Carveth, and Brown 1981). Studies in domains other than violence have shown that heavy television viewing is related to greater faith in doctors (Volgy and Schwarz 1980), greater interpersonal mistrust (Gerbner et al. 1980), a heightened perception of the prevalence of divorce (Carveth and Alexander 1985; Shrum 1996), higher estimates of the prevalence of prostitution, drug addiction, and alcohol addiction (Shrum and O'Guinn 1993), and greater perceptions of the ownership of expensive products (O'Guinn and Shrum 1997; Shrum forthcoming).

Although this research provides evidence of a link between television viewing and social judgment, it is not without its critics (cf. Hawkins and Pingree 1982; Hirsch 1980; McGuire 1986). Most criticism hinges on two particular issues. First, the studies are typically correlational in nature and thus are subject to alternative explanations. For example, a third variable (e.g., people's socioeconomic situation) might have independent influences on both television-viewing habits and direct exposure to crime and violence. Another alternative explanation is that the causal direction of the relation might be the opposite of that implied by cultivation theory. That is, people who have certain beliefs about social reality may be drawn to television programs that confirm these beliefs. In fact, some studies have shown that the effects of television viewing may disappear when a number of relevant third variables are statistically controlled (for a review, see Gunter [1994]). Second, the research has been criticized for its black-box nature. That is, the research has simply provided evidence of an effect without any explanation for how the effect might have occurred. Some researchers have suggested that the lack of a psychological process explanation for cultivation effects seriously undermines

the validity of the theory, particularly in light of the alternative explanations for cultivation theory just noted (Hawkins and Pingree 1990; Shrum 1995).

The studies to be reported were designed to address the two issues just raised. Both studies take an information-processing perspective in addressing issues of psychological process and build on previous research relating to heuristic processing and television effects. In addition, the two studies employ priming procedures to address issues of causality and further explicate a model of heuristic processing.

STUDY 1

Heuristic Processing Model of Cultivation Effects

Although initial attempts to provide a mental processing explanation for cultivation effects were largely unsuccessful (for a review, see Hawkins and Pingree [1990]), recent work has provided a psychological model for how television viewing may influence the construction of social judgments (Shrum 1995). In general this model suggests that cultivation effects on estimates of frequency and probability reflect the application of an availability heuristic (Tversky and Kahneman 1973) and in particular that television viewing can increase the accessibility of instances of those things that are often encountered in television programs (e.g., crime and violence). Accessibility may be enhanced by the frequency and recency of viewing these instances, as well as the vividness and detail in which the instances are encoded into memory. To this extent, television viewing may be considered a "natural prime," with relevant exemplars being more accessible in memory for heavier television viewers than for lighter television viewers. Therefore, if people judge the incidence of crime and violence on the basis of how easily examples come to mind (Tversky and Kahneman 1973), the enhanced accessibility of exemplars for persons who view television relatively more frequently should lead them to make higher estimates, which is consistent with a cultivation effect.

A number of studies have supported the implications of this general model. For example, Shrum (1996) tested the assumption that the accessibility of exemplars frequently portrayed on television is a function of television viewing frequency. Accessibility was operationalized as participants' reaction time in providing estimates of things overportrayed on television. Results indicated that heavy viewers not only made higher estimates than light viewers of the prevalence of crime, marital discord, and particular occupations (a cultivation effect) but also made these estimates more quickly (an accessibility effect). These results have been replicated with a variety of dependent variables, operationalizations of television viewing, and control variables (O'Guinn and Shrum 1997; Shrum and O'Guinn 1993; Shrum et al. 1991).

Although the effects just described appear to be robust,

they alone do not provide an unequivocal test of the model. First, they cannot establish causality. As noted earlier with respect to general cultivation effects, the accessibility effects might still be noted if a third variable was responsible for the effect or if the causal direction was reversed.

Second, certain assumptions of the heuristic processing model remain untested. To reiterate, the model postulates that television viewing makes judgment-related exemplars more easily accessible in memory for those who view more frequently and that the ease of retrieving these examples is used as a basis for judgments. However, implicit in this model is the assumption that the television-based exemplars are in fact considered relevant to the judgment. If they are not, the subjective ease of exemplar retrieval will not be used as a basis for judgment (Rothman and Hardin 1997; Schwarz et al. 1991), and so the effect of accessibility will be attenuated (Feldman and Lynch 1988; Herr, Kardes, and Kim 1991; Higgins and Brendl 1995, experiment 1).

In fact, it might seem reasonable to suppose that if people retrieve television based exemplars in the course of constructing a judgment, they would recognize these exemplars as coming from a nonveridical source (e.g., television fiction) and therefore would correct for their influence. The evidence indicating that people tend not to think that television accurately reflects reality (Shrum 1995) would support this possibility. There are, however, instances in which television information may not be discounted even if it is considered nonveridical. In particular, people may make source-discounting errors because they are either unmotivated or unable to determine the source of the information they retrieve—characteristics that are associated with heuristic processing (Chaiken 1987). In such instances, fiction may often be misconstrued as fact through errors in source discounting (Johnson, Hashtroudi, and Lindsay 1993; Mares 1996; Shrum 1997).

Study 1 addresses the role of source discounting in the cultivation effect. To do so, priming procedures were used to make source characteristics salient during the judgment-construction process. We expected that because these procedures were salient to the participants rather than being unobtrusive, they would produce an effect similar to that obtained by Martin (1986; Martin, Seta, and Crelia 1990). That is, the salience of the prime should induce participants to correct for the influence of television by disregarding information they consider to be inapplicable to their judgment, thereby reducing the magnitude of this effect (see also Higgins, Rholes, and Jones 1977).

The priming task took two forms. In source-priming conditions, participants were asked to provide information about their television viewing habits before making their judgments. In relation-priming conditions, both source and its possible relation to judgments were primed by forewarning participants of the possible influence of television on their estimates before they reported them. This manipulation was intended to increase not only the sa-

lience of television but also its possible effects. Finally, in no-priming conditions, participants were asked to make judgments without calling attention to either their television viewing habits or a possible effect of television viewing on their judgments.

Our general hypothesis is that persons who make cultivation judgments do not typically think about the source of information they retrieve and use as a basis for this judgment, and so information from unreliable or irrelevant sources can have an influence. If this is so, calling their attention to television as a source of information should induce them to discount the television information and search for alternative data on which to base their judgment. Moreover, assessing these effects under both source- and relation-priming conditions was expected to indicate whether making source information salient is sufficient to induce persons to discount information they have received from television spontaneously or whether forewarning persons of its actual effect is necessary.

Evidence that the cultivation effect is decreased or eliminated in both the source-discounting and forewarning conditions would indicate that calling participants' attention to their television viewing habits is sufficient to stimulate them to discount television information and therefore correct for its biasing influence (both conditions prime source characteristics). Such evidence would be consistent with a discounting process in which television information is disregarded and alternative sources of information are considered. If the cultivation effect is only reduced under relation-priming conditions, however, it would suggest that attention must be called to the relation between television viewing and judgments before corrections for television's influence can occur. This pattern of results would be consistent with an adjustment process in which people correct for bias on the basis of their perceptions of how television affects their judgments (Wegener and Petty 1995). Finally, evidence that neither type of priming affects the relation between television viewing and judgments would suggest that the failure to discount judgment-irrelevant information is not a major determinant of the cultivation effect.

Note also that an elimination of the cultivation effect in either of the priming conditions would have implications for issues of causality. The priming conditions should have an effect only if the primed concept (television) is one that persons normally use as a basis for judgments (Wyer, Bodenhausen, and Gorman 1985; Wyer and Srull 1989).

Method

Sample and Procedure. Seventy-one undergraduates from an introductory advertising course participated in small groups as partial fulfillment of a course requirement. The participants were randomly assigned to one of three conditions. In the no-priming condition, participants were first instructed to complete a questionnaire that assessed their beliefs about the prevalence of both crime and

particular occupations. In completing the questionnaire, participants were encouraged to be as honest and as candid as possible. Then, as ostensibly part of a second study, they filled out a questionnaire that asked them to estimate their frequency of television viewing, along with several scales described below.

In the source-priming condition, the order of administering the two questionnaires was reversed: participants first estimated their viewing frequency and then provided their prevalence estimates for crime and particular occupations. The order of completing the questionnaires in the third, relation-priming condition was the same as in the no-priming condition (i.e., crime and occupation estimates first, then television viewing frequency). In this condition, however, participants were given the following additional instructions before providing their estimates: "In order to answer these questions, you will use information from a variety of sources. You should be aware that the subjects of these questions are often depicted on television, more so than occurs in real life. Consequently, people often use this information to formulate answers."

Dependent Measures. The questionnaire that assessed respondents' perceptions of the prevalence of crime and particular occupations was comprised of 23 items used in previous social reality studies (see, e.g., Doob and Macdonald 1979; Shapiro 1991). Of these 23 items, 18 concerned beliefs about the incidence of crime, and five concerned beliefs about the prevalence of particular occupations (see Appendix).

The response formats varied over questions. In order to allow for scale development from items for which response formats used different metrics, z-scores were calculated. A composite 18-item crime scale ($\alpha = .81$) and a five-item occupation scale ($\alpha = .84$) were then constructed by averaging the scores for each construct.

Television Measures. Television viewing was assessed in two ways. Participants first estimated the number of hours that they watched television during each of four periods of a typical weekday (morning, afternoon, prime time, and late night) and on Saturday and Sunday. A measure of total weekly viewing was obtained by summing these estimates. A second measure of television viewing was obtained by asking participants to estimate the number of hours per week that they watched programs in each of 11 program categories (e.g., soap operas, news, drama, etc.). A weekly measure of television viewing was obtained by summing estimates for the separate program categories. The two alternative estimates of viewing frequency were highly correlated ($r = .79$) and were therefore averaged to provide a single estimate of television viewing time for each participant.

Supplementary Data. Information pertaining to age, grade point average (GPA), gender, and participants' estimates of their family income was also collected. In addition, a perceived reality scale (Rubin, Perse, and Taylor 1988) was administered. This scale measures the extent

to which people believe that television is an accurate portrayal of the real world.

Results

To determine the effects of both reported television viewing and experimental priming condition on the crime and occupation estimates, multiple regression analyses were performed. Television viewing was treated as a continuous variable (mean-centered), and priming condition was treated as a class variable. Age, family income, GPA, perceived reality, and gender (dummy coded; 0 = male, 1 = female) were included as control variables in each analysis.

The first regression analysis assessed the relation of television viewing to social reality estimates within each priming condition. The control variables were first entered as a block, followed by entry of television viewing. If television viewing accounts for unique variance in the crime and occupation estimates, the incremental change in R^2 in the second entry step should be significant.

Participants' estimates of the prevalence of crime and occupations were expected to increase with their viewing level under no-priming conditions (thus evidencing a cultivation effect), but priming television-related concepts before participants made their estimates was expected to decrease or eliminate this effect. Data bearing on these possibilities are presented in Table 1. In the no-priming condition, entry of the television viewing variable in the second step of the regression analysis was significant for both the crime and occupation estimates, which was consistent with our prediction of a cultivation effect. However, for both the source-priming and relation-priming conditions, the entry of television viewing in the second step did not produce a significant increase in R^2 for either dependent variable, indicating that both the source- and relation-priming manipulations were sufficient to eliminate the effects of participants' own viewing level on their estimates. In no case did the block of control variables relate significantly to the crime or occupation estimates.

To determine whether priming conditions reduced the effect of television viewing relative to no-priming conditions, we ran regression analyses that contrasted the no-priming condition with each of the two priming conditions. We entered the main effects of television viewing and priming condition, along with the interaction between these two variables, in a multiple-regression analysis. Control variables were also entered. A significant reduction in the television effect as a function of priming condition would be evidenced by a significant interaction term.

Data pertaining to these effects are shown in Table 2. For both contrasts, the main effect for television viewing and the interaction between viewing and priming condition were significant predictors of crime and occupation estimates (the interaction only approached significance for occupation estimates when the no-priming and source-priming conditions were contrasted). This suggests that

TABLE 1
REGRESSION ANALYSES PREDICTING ESTIMATES FROM TELEVISION VIEWING WITHIN PRIMING CONDITION (STUDY 1)

Dependent and predictor variables	No priming		Source priming		Relation priming	
	β	ΔR^2	β	ΔR^2	β	ΔR^2
Crime estimates:						
Step 1:						
Age	-.42*		-.01		.13	
GPA	.00		-.10		-.14	
Income	.07		-.01		.02	
Gender	.22		.46*		.09	
Perceived reality	.23		.11		-.08	
Controls (block)		.28		.20		.04
Step 2:						
TV viewing	.57	.27**	.20	.02	-.29	.08
	$\bar{X} = .20^a$		$\bar{X} = -.07$		$\bar{X} = -.16$	
Occupation estimates:						
Step 1:						
Age	-.25		.10		.24	
GPA	.23		-.19		-.01	
Income	-.04		.04		.22	
Gender	-.07		.43*		.06	
Perceived reality	.27		.36*		-.09	
Controls (block)		.24		.38		.10
Step 2:						
TV viewing	.57	.24**	.38	.09	-.03	.00
	$\bar{X} = .05$		$\bar{X} = -.09$		$\bar{X} = -.02$	

NOTE.—Means represent average crime and occupation estimates (z-scores) for each condition.
^aIndicates mean (z) differs from source- and relation-priming means ($p < .05$).
 * $p < .10$.
 ** $p < .05$.

not only did the source- and relation-priming conditions reduce the effects of television viewing to nonsignificance, but they also produced an effect that differed significantly from the effect noted in the no-priming condition. However, when the source- and relation-priming conditions were contrasted, no main effects or interactions were significant (all p 's $> .30$), suggesting that the priming manipulations did not differ in their effects on either of the television judgment relations.

Supplementary Analyses. In the preceding analyses, we used participants' total amount of television viewing as our predictor variable. If persons are selective in their viewing habits, however, amount of viewing within program category might account for significant variance in social reality estimates over and above the variance attributed to total television viewing (Shrum, O'Guinn, and Faber 1990). To assess this possibility, we reran the regression analyses to include the effects of the different viewing categories. Total television viewing was entered in the first step, and the individual program category was entered in the second step. We did this separately for each of the 11 program categories. If viewing particular types of programming explains significant variance in the esti-

TABLE 2
REGRESSION ANALYSES CONTRASTING DIFFERENTIAL EFFECTS OF TELEVISION VIEWING AND PRIMING CONDITION ON ESTIMATES (STUDY 1)

Dependent and predictor variables	β	
	No priming versus source priming	No priming versus relation priming
Crime estimates:		
Age	-.11	-.20
GPA	.07	.02
Income	.03	.07
Gender	.15	-.02
Perceived reality	.23*	.15
Priming condition	.35	.23
TV viewing	.81**	.61**
TV viewing \times priming	-.84**	-.85**
Occupation estimates:		
Age	-.18	-.11
GPA	.18	.21
Income	-.04	.17
Gender	.10	-.06
Perceived reality	.37**	.17
Priming condition	.39	.51*
TV viewing	.70**	.54**
TV viewing \times priming	-.61*	-.85**

* $p < .10$.
 ** $p < .05$.

mates over and above that accounted for by total television viewing, then entry of this program category into the analysis should explain a significant portion of variance in the crime and occupation estimates. However, in only one instance did the amount of viewing of a program category account for additional variance over and above total television viewing: soap opera viewing was a marginally significant predictor ($p < .10$) of crime estimates. From these results, it appears that, at least for this sample, total television viewing is the preferred predictor variable.

Discussion

Implications for Causality. The results of this study provide a number of insights into the effects of television viewing on perceptions of social reality and the processes that underlie them. At the most general level, they support the implications of cultivation theory, which states that television viewing has a causal influence on perceptions of social reality and is not simply a correlate of these perceptions. If the relation between television viewing and social reality perceptions were due to the common relation of these factors to a third variable that had independent influences on both factors, priming concepts associated with television viewing would have relatively little influence on the magnitude of the relations we observed. In a similar manner, priming should also have little influence if the relation between television viewing

and perceptions were due to a reverse causality mechanism. In fact, however, the two priming manipulations reduced the relations between television viewing and estimates of both crime and occupational prevalence. This was true regardless of whether the potential impact of television on these estimates was explicitly called to participants' attention or not. In other words, simply making participants aware of the source of bias was sufficient to induce discounting, and an explicit indication of the source's possible effects on judgments was unnecessary.

Mechanisms Operating under Priming and No-Priming Conditions. The results also have implications for the mental processes that occurred in the priming and no-priming conditions. In both priming conditions, the prime was made salient to respondents. Thus, consistent with the results obtained by Martin (1986; Martin et al. 1990; see also Higgins et al. 1977), no assimilation effects were observed. These results indicate that when people are made aware of a possible source of bias in a prospective judgment, or if they think the primed information is not applicable to the judgment, they may suppress the use of this information. However, when such primes are not salient, people may not be aware of the source of the information they recall and thus may have no reason to think that the information is not veridical (e.g., from television fiction). In such cases, an effect of an assimilation to the prime may occur, as was noted in the no-priming condition. In other words, respondents who were heavy viewers essentially receive a naturally occurring prime, and because no cues are present to cause them to think that the information they recall is not veridical, they use the television based information to construct their estimates of the prevalence of crime and particular occupations.

It is also worth noting that the process of correcting for the influence of television need not be controlled, at least in the sense that respondents are aware of their suppression of its influence. Martin et al. (1990) found that, even though participants indicated that they were aware of the primes, they also did not feel that the primes had influenced their judgments. Thus, according to Martin et al. (1990), these results suggest that participants "were aware of the priming stimuli and aware of their subsequent impression, but were unaware of the relation between the two" (p. 34). The findings in our debriefings were similar: no participants indicated that they consciously adjusted their estimates to compensate for the possible effects of their television viewing.

Although the results from study 1 are suggestive, an ambiguity nevertheless remains regarding the nature of the correction that occurred in the priming conditions. We have argued that the correction results from the fact that calling participants' attention to the source of the television-based exemplars leads them to ignore these exemplars and search for more veridical information. However, an alternative possibility is that participants have naive theories about the effects of television information

on their judgments and that the source prime was sufficient to activate this theory. If this is so, then the reduction of the cultivation effect in both priming conditions may have been due to an adjustment process in which participants estimated the magnitude of the influence of television and then altered their judgment by attempting to partial out the perceived influence of television information (Martin et al. 1990; Wegener and Petty 1995). Thus, heavy viewers may have adjusted more than light viewers because they are aware that they are heavy viewers and thus should adjust more. This possibility would produce the same interaction between television viewing and priming condition that we noted in our study.

If this latter hypothesis is correct, however, the amount of adjustment that persons make, and thus the magnitude of their estimates, should depend on whether these persons perceive themselves to be heavy or light viewers, independently of the amount of television they actually watch. Study 2 investigated this possibility by manipulating participants' perceptions of their viewing level.

STUDY 2

The method we used to manipulate participants' perceptions of their viewing habits was borrowed from Schwarz et al. (1985). They hypothesized that when persons are asked to judge the amount of television they watch along a scale of ordered alternatives, they use the average value (i.e., the midpoint) described in these alternatives as an indication of the typical person's viewing behavior and evaluate their own viewing behavior in relation to this value. To test this hypothesis, they asked persons to judge their viewing behavior along one of two scales. One low-frequency scale was composed of alternatives ranging from "up to one-half hour per day" to "more than two and one-half hours per day." The other high-frequency scale contained alternatives ranging from "up to two and one-half hours per day" to "more than four and one-half hours per day." The two versions of the scale are shown in Exhibit 1. The first scale suggests that the average person watches less television than does the second. In fact, persons in Schwarz et al.'s (1985) sample watched about 2.3 hours of television per day on the average. As a consequence, they should perceive themselves to be above average and, thus, to be relatively heavier viewers, if they encounter the first scale. However, they should perceive themselves to be below average and, therefore, lighter viewers, if they encounter the second. Consistent with this hypothesis, Schwarz et al. (1985) found that people gave lower estimates of the amount of television that the average citizen viewed if they had reported their own viewing behavior along the low-frequency scale than if they had reported it along the high-frequency scale. In addition, participants in the first condition made relatively higher estimates of the importance of television in their own leisure time and reported lower leisure time satisfaction than did participants in the second condition. These results suggest that participants

EXHIBIT 1
SCALES USED FOR MANIPULATION OF PERCEIVED VIEWING LEVEL

Low-frequency/heavy-viewing perception	High-frequency/light-viewing perception
_____ up to one-half hour per day	_____ up to two and one-half hours per day
_____ one-half to one hour per day	_____ two and one-half to three hours per day
_____ one to one and one-half hours per day	_____ three to three and one-half hours per day
_____ one and one-half to two hours per day	_____ three and one-half to four hours per day
_____ two to two and one-half hours per day	_____ four to four and one-half hours per day
_____ more than two and one-half hours per day	_____ more than four and one-half hours per day

used the range of frequencies described in the response alternatives to infer the typical person's viewing behavior and judged themselves in relation to this norm, with consequent effects on their viewing satisfaction.

If participants in the priming conditions of study 1 consciously adjusted their estimates to compensate for the bias they perceived to exist as a result of their viewing behavior, the amount of this adjustment should be influenced by procedures similar to those employed by Schwarz et al. (1985). That is, persons who are asked to use the low-frequency scale should infer that their own television viewing is heavier than it is for those who are asked to use the high-frequency scale. Therefore, they should adjust their frequency estimates relatively more, to compensate for the bias produced by this viewing, than should persons who are asked to use the high-frequency scale. However, suppose that participants corrected for bias by discounting the specific examples they encountered on television; in that case, this manipulation should affect participants' perceptions of themselves as heavy viewers but should not have an impact on their social reality estimates.

In the experiment we conducted, we independently varied priming conditions (relation- vs. no-priming conditions) and the response scale that participants used to estimate their viewing frequency (low-frequency vs. high-frequency vs. no scale). (We did not include a source-prime condition because there were no differences between the source- and relation-priming conditions in study 1. In fact, the relation prime also functions as a source prime, and any adjustments resulting from the perception manipulation should be most apparent in the relation-priming condition.) When participants are not exposed to the viewing frequency scale before making their judgments, the relation between their television usage and social reality estimates should be greater under no-priming than under relation-priming conditions, replicating the results of study 1. However, suppose that participants are asked to report their viewing behavior before making these estimates and that they attempt to adjust their estimates of social reality to compensate for the bias they perceive to be produced by this behavior; in that case, they should adjust more and, therefore, make lower estimates when given the low-frequency scale (and thus perceive that they are relatively heavy viewers) than when given the high-frequency scale (and thus perceive them-

selves to be relatively light viewers). These effects should be particularly apparent under relation-priming conditions in which the potential influence of television on participants' estimates is explicitly called to their attention. Finally, suppose the effects of relation priming are not mediated by participants' attempts to adjust for the effects of television viewing but instead are a consequence of the discounting of exemplars seen on television that come to mind when making their social reality estimates; in that case, the manipulation of participants' self-perceptions as heavy or light viewers should have no effect on their estimates under either priming condition.

Method

Sample and Procedure. Undergraduates from an eastern university ($N = 162$) participated in small groups as partial fulfillment of a course requirement. Participants were randomly assigned to one of four experimental conditions. Two conditions (no-priming and relation-priming only) were identical to those employed under comparable conditions of study 1. In the remaining two conditions, participants received a relation prime after being asked to estimate their viewing behavior along either a low-frequency scale (relation-priming/low-frequency scale) or high-frequency scale (relation-priming/high-frequency scale).

Measures. The measures of television viewing, as well as the dependent and supplementary measures, were identical to those used in study 1. As with the first study, z-scores were calculated for the crime and occupation estimates to allow for scale development from items for which response formats use different metrics. The reliabilities for the composite variables were very similar to those found in the first study: crime ($\alpha = .80$); occupation ($\alpha = .78$); perceived reality ($\alpha = .78$); weekly television viewing ($r = .67$). Items were also included to determine whether the manipulation of perceived level of television viewing was successful. Participants were asked to estimate the amount of television an average person watches each day (open-ended) and then to estimate their own level of television viewing on a five-point scale (1 = light viewer, 5 = heavy viewer).

Results

Manipulation Checks. The findings of Schwarz et al. (1985) were replicated. That is, participants' estimates

TABLE 3
MEANS AND BETA-WEIGHTS (WITH TELEVISION VIEWING) OF ESTIMATES OF CRIME
AND OCCUPATION AS A FUNCTION OF PRIMING CONDITION (STUDY 2)

Dependent variable	Condition			
	1. No priming	2. Relation priming only	3. Relation-priming/low-frequency scale	4. Relation-priming/high-frequency scale
Mean estimate (\bar{z}):				
Crime	.09	-.07 ^b	-.13 ^a	-.09 ^b
Occupation	.40	-.10 ^a	-.16 ^a	-.27 ^a
β (television viewing):				
Crime	.56**	.10 ^a	-.14 ^a	.05 ^a
Occupation	.41**	.17 ^a	-.26**	.04 ^a

^aIndicates significantly different from Condition 1, $p < .05$.

^bIndicates significantly different from Condition 1, $p < .10$.

* $p < .10$.

** $p < .05$.

of the amount of television watched by the average person were significantly higher when they were given the high-frequency scale ($\bar{X} = 3.49$ hours) than when they were given the low-frequency scale ($\bar{X} = 3.00$ hours, $t(77) = 2.24$, $p < .05$, $\omega^2 = .05$). Moreover, they reported their own level of viewing to be less heavy in the former conditions ($\bar{X} = 2.05$) than in the latter ($\bar{X} = 2.57$, $t(77) = 2.08$, $p < .05$, $\omega^2 = .04$).

Test of Hypothesis. If participants attempt to adjust for bias produced by their perceived television viewing habits, they should adjust more and, therefore, should make lower estimates when they have reported their viewing frequency along the low-frequency scale than when they have reported it along the high-frequency scale. This was not the case. Mean estimates of the incidence of crime and occupational prevalence are shown in the top half of Table 3. Participants estimated the incidence of crime and occupation to be generally less when the relation between television viewing and judgment was primed than when it was not. However, their estimates in the latter condition were unaffected by reporting their own viewing behavior, and this was true regardless of whether these reports were made along a high-frequency or low-frequency scale. But, as Table 3 shows, estimates of both crime and occupation in the no-priming condition were significantly greater than those under any of the other three conditions, which did not significantly differ from each other. Thus, although the scale manipulation reliably affected participants' perceptions of themselves as heavy or light viewers, it did not affect their estimates.

Further evidence that the effects observed in study 1 were not a result of adjustments for perceptions of bias was obtained through the use of regression analyses. These analyses were performed under each experimental condition separately, with the same control variables used in study 1 entered in the first step and television viewing entered in the second step. The beta-weights associated with television viewing in each condition are shown in

the bottom half of Table 3. A significant beta-weight indicates that television viewing contributed significant variance to the prediction of the crime and occupation judgments. In fact, however, the results show that this was true only in the no-priming condition. In all other cases, the beta-weight attached to television viewing was near zero, and for the relation-priming/low-frequency scale condition (condition 3) the beta-weight was negative. In no case did the block of control variables contribute significantly to the prediction of the crime or occupation estimates.

To determine whether the effect of relation-priming in conditions 2, 3, and 4 significantly reduced the effect of television viewing that occurred in the no-priming condition (condition 1), we ran the same type of regression analyses that we conducted in the first experiment. The no-priming condition was contrasted with the other three. Contrasts corresponding to the main effects of television viewing and priming condition, and also the interaction of these two variables, were entered into the regression analysis. If priming significantly reduces the television effect, the interaction term should be significant. This indicates that the slopes of the regression lines (i.e., the beta-weights) are significantly different.

As the bottom portion of Table 3 shows, the beta-weight associated with television viewing that occurred in no-priming conditions was significantly greater than it was in the other three conditions. This is true for both the crime estimates and estimates of occupational prevalence. However, none of the beta-weights in the three priming conditions (conditions 2–4) significantly differed from one another.

Discussion

The results of this study confirm the conclusions drawn from the first experiment. Calling participants' attention to the relation between television viewing frequency and

social reality perceptions eliminates the effect of persons' own viewing behavior on these estimates. However, this effect does not appear to be due to a conscious attempt to adjust for the perceived bias produced by this viewing behavior. Rather, the results are more consistent with a discounting hypothesis.

Because the evidence against the adjustment hypothesis is based in part on a failure to reject the null hypothesis, conclusions derived from this evidence should perhaps be treated with some caution. However, the experimental manipulation of participants' perceptions that they were light or heavy viewers was successful, and its effect was similar in magnitude to that obtained in previous studies (cf. Schwarz et al. 1985). Moreover, in some cases, results were opposite in direction to that implied by an adjustment hypothesis. For example, the adjustment hypothesis implies that participants' estimates in the relation-priming/low-frequency scale condition should be lower than their estimates in the relation-priming/high-frequency scale condition. In fact, the reverse was true for occupation estimates.

A source-discounting explanation is consistent with at least one other study that has tested implications of the heuristic processing model of cultivation effects. Shrum (forthcoming) manipulated the processing strategies that participants used to construct their estimates of crime, occupational prevalence, marital discord, and product ownership. Some participants were induced to process either heuristically or systematically, whereas others received no indication of the processing strategy they should use. The inducement to process systematically was expected to stimulate participants to scrutinize the information they retrieved and thus to be more likely to engage in source discounting. This was in fact the case; cultivation effects were evident in both heuristic and control conditions, whereas instructions to engage in systematic processing eliminated these effects. Moreover, the systematic processing manipulation made no mention of television, so any type of demand or adjustment process was unlikely.

The results just described may also help explain why the priming conditions did not lead to a contrast effect in our studies. A contrast effect is evidenced when judgments are in a direction opposite of the prime, and studies have shown that the processes involved in contrast effects require more cognitive effort than the processes underlying assimilation effects (Martin et al. 1990; Meyers-Levy and Sternthal 1993; Meyers-Levy and Tybout 1997). These studies show that when participants are either unable or unmotivated to think carefully about the information they receive, assimilation effects occur even when the primes are blatant or inappropriate. However, when persons are able and motivated to devote more cognitive resources to the judgment task, contrast effects can occur. Thus, because participants in the present study may have employed a heuristic processing strategy when constructing their cultivation judgments, they may not have expended a sufficient amount of effort in the priming

conditions to generate a contrast effect. This lack of effect may have been a function of the difficulty of the judgments relative to judgments in other studies or of the difficulty of applying naive theories about potential biasing effects relative to other studies. In fact, our data showed a tendency toward a contrast effect in the relation-priming condition of study 1 and the relation-priming/low-frequency scale condition of study 2, as evidenced by the negative beta-weights associated with television viewing in these conditions. However, this tendency was not statistically significant.

GENERAL DISCUSSION

We have argued that studies 1 and 2 suggest that the cultivation effect can be explained generally in terms of the influence of television exemplars on judgments based on the availability heuristic. Moreover, the effects of priming suggest that television viewing has a significant, causal influence on perceptions of the prevalence of crime and occupations. It is important to note, however, that these results do not indicate that television viewing is the only causal factor. Other variables may also influence the relation between amount of viewing and magnitude of judgment. The priming methodology we employed to investigate causality issues tells us only whether the particular primed concepts are merely among the causal influences but says nothing about other causal variables. Thus, although television viewing appears to have a causal influence on perceptions of social reality, this does not preclude the existence of a third variable that could contribute to (but not subsume) the relation between these factors through its independent effects on both viewing and the social reality estimates. Our data also do not rule out the coexistence of a reverse causal mechanism.

The no-priming condition represents the typical procedure for identifying a cultivation effect, and when considered in isolation, its correlational nature would make it subject to the criticisms noted earlier. However, certain interpretations are rendered implausible by the generalizability of effects over the different dimensions of judgment we considered. For example, it might be argued that persons who watch more television live in higher-crime neighborhoods, and thus their perceptions of crime are driven by direct experience rather than television viewing. However, this argument could not account for the virtually identical results for the estimates of occupational prevalence. The items composing the occupation variable asked for estimates of doctors, lawyers, scientists, professional workers, and police officers. It is unlikely that a person would have similar amounts of experience with all of these occupations. Moreover, people who are frequently exposed to most of these occupations in their daily lives are likely to come from low-crime rather than high-crime neighborhoods and, therefore, to have little direct experience with criminal activity. Thus, the fact that television viewing increased estimates of both the prevalence of these occupations and criminal activity

seems unlikely to be attributable to differences in direct experience per se.

Apart from providing additional evidence as to the psychological processes that underlie cultivation effects, the two studies reported here have implications for why some other studies have failed to find a cultivation effect. Our results clearly indicate that at the very least, the order of data collection may affect the results. As Morgan and Shanahan (1996) point out, a number of studies that have failed to find cultivation effects for particular variables or under particular conditions have in fact measured television viewing before the estimates. In other cases, titles of the surveys have contained information that pertains to television and thus may have primed source characteristics. Just as with our studies, these procedures may have primed television, which effectively eliminated the cultivation effect.

Although the results of previous research have generally been consistent with the hypothesis that television viewing has an effect on attitudes, beliefs, and behaviors in a variety of domains, the conclusions drawn from that research have often been equivocal. The research reported here nevertheless confirms this effect in ways that avoid many of the criticisms made of earlier studies. The results of studies 1 and 2 provide further support for the heuristic processing model of cultivation effects and suggest that television viewing is indeed a determinant of societal perceptions of crime and occupational prevalence.

One common retort to the claim that television viewing affects social perceptions is that because people are aware of the fictive nature of the programs they watch, they should be able to completely escape television's potential influence. This argument is similar to the one that argues against advertising effects because audience members are aware that they are being persuaded. Although it may be true that experienced readers of any text are aware of the nature of the text and the rules of reading (Scott 1994) and may attempt to actively reject the text, they may not always do so successfully. Moreover, those with less experience (e.g., children) or with fewer cognitive resources (e.g., those unmotivated, distracted, or otherwise less able to process information) should be particularly prone to failure in their attempts to reject text. The studies presented here support this notion, as do quite a few studies on belief construction. For example, Gilbert (1991) argues that the acceptance of an idea is necessary for the comprehension of that idea and that rejection of the idea is an effortful process that occurs subsequent to its acceptance. As a consequence, when the effort to reject an idea is hindered (e.g., because of distraction, an increase in cognitive load, etc.), belief in the idea may persist (Gilbert, Krull, and Malone 1990; Gilbert, Tafarodi, and Malone 1993).

The Gilbert et al. (1990) study suggests that even when people are aware of the fictive or otherwise nonveridical nature of information before encoding, they are typically unable to escape its influence completely. Another body of work indicates that people are also unable to fully

escape the influence of information that they are told to disregard when instructions to disregard occur after the information has already been encoded (Wyer and Budesheim 1987; Wyer and Unverzagt 1985). This sequence of encoding and discounting is similar to what might be expected when viewers willfully suspend their disbelief when watching a fictional television program. If the information is encoded as if it is veridical, subsequent attempts to disregard the information may not be entirely successful. Moreover, research has found that merely entertaining particular hypotheses increases the tendency of people to seek confirming evidence (Snyder and Swann 1978) and to perceive relevant information as informative (Swann and Giuliano 1987). Thus, with disbelief suspended when viewing fictional television programs, particular pieces of information (e.g., exemplars of crime, occupations) are not initially encoded as nonveridical and therefore are likely to influence subsequent judgments, and entire propositions (e.g., lawyers are dishonest) may not only be entertained but subsequently bolstered. In light of this research, as well as the studies we have presented, it seems quite plausible that the systematic distortions that television provides may influence social judgments, and this influence should be greater for those who view relatively more television.

APPENDIX

Dependent Measures for Studies 1 and 2

Crime

During any given week, about how many people out of one hundred are involved in some kind of violence?

What percent of all crimes are violent crimes—like murder, rape, robbery, and aggravated assault?

What proportion of murders are committed by strangers?

What do you think the chances are that if you were to walk home alone at night on residential streets in New York City each night for a month, you would be the victim of a serious crime?

If a child were to play alone in a park for an hour during daylight each day for a month, what do you think the chances are that he would be the victim of a violent crime?

If you were to walk by yourself for an hour every night in a park in New York City for a month, what do you think the chances are that you would be the victim of a serious crime?

What do you think the chances are that an unaccompanied woman would be the victim of a violent crime late at night in a New York City subway?

What do you think the chances are that you, a member of your family, or one of your close friends might be the victim of an assault during the next year?

What percentage of the time do you think that policemen who shoot at running persons actually hit them?

How likely do you think it is that your house or the house of one of your close friends would be broken into during the next year?

If you were seriously harmed by someone, what are the chances that person would be a stranger?

What proportion of all murders do you think are committed by people who could be classified as mentally ill?

Of mentally ill people, what proportion would you say are violent?

What are the odds that you personally will be attacked or robbed within the next year?

When police arrive at the scene of violence, what percentage of the time must they use force and violence?

How many times per month does the average policeman have to draw a gun?

How many murders do you think take place in Los Angeles every year?

During the last year, how many people do you think were murdered in the New York City subways?

Occupation

About what percentage of all males who have jobs work in law enforcement and crime detection—like policemen, sheriffs, and detectives?

What percentage of the U.S. workforce are professional workers?

What percentage of the U.S. workforce are doctors?

What percentage of the U.S. workforce are scientists?

What percentage of the U.S. workforce are lawyers?

[Received May 1995. Revised September 1997. Brian Sternthal served as editor for this article.]

REFERENCES

- Bryant, Jennings, Rodney A. Carveth, and Dan Brown (1981), "Television Viewing and Anxiety: An Experimental Investigation," *Journal of Communication*, 31 (Winter), 106–119.
- Carveth, Rodney A. and Alison Alexander (1985), "Soap Opera Viewing Motivations and the Cultivation Process," *Journal of Broadcasting and Electronic Media*, 29 (Summer), 259–273.
- Chaiken, Shelly (1987), "The Heuristic Model of Persuasion," in *Social Influence: The Ontario Symposium*, Vol. 5, ed. Mark P. Zanna et al., Hillsdale, NJ: Erlbaum, 143–177.
- Doob, Anthony N. and Glenn E. Macdonald (1979), "Television Viewing and Fear of Victimization: Is the Relationship Causal?" *Journal of Personality and Social Psychology*, 37 (February), 170–179.
- Feldman, Jack M. and John G. Lynch (1988), "Self-Generated Validity and Other Effects of Measurement on Belief, Attitude, Intention, and Behavior," *Journal of Applied Psychology*, 73 (August), 421–435.
- Gerbner, George and Larry Gross (1976), "Living with Television: The Violence Profile," *Journal of Communication*, 26 (Spring), 173–199.
- , Larry Gross, Michael Morgan, and Nancy Signorielli (1980), "The 'Mainstreaming of America': Violence Profile No. 11," *Journal of Communication*, 30 (Summer), 10–29.
- , Larry Gross, Michael Morgan, and Nancy Signorielli (1994), "Growing Up with Television: The Cultivation Perspective," in *Media Effects: Advances in Theory and Research*, ed. Jennings Bryant and Dolf Zillmann, Hillsdale, NJ: Erlbaum, 17–41.
- Gilbert, Daniel T. (1991), "How Mental Systems Believe," *American Psychologist*, 46 (February), 107–119.
- , Douglas S. Krull, and Patrick S. Malone (1990), "Unbelieving the Unbelievable: Some Problems in the Rejection of False Information," *Journal of Personality and Social Psychology*, 59 (October), 601–613.
- , Romin W. Tafarodi, and Patrick S. Malone (1993), "You Can't Not Believe Everything You Read," *Journal of Personality and Social Psychology*, 65 (February), 221–233.
- Greenberg, Bradley S. and Jeffrey E. Brand (1994), "Minorities and the Mass Media: 1970s to 1990s," in *Media Effects: Advances in Theory and Research*, ed. Jennings Bryant and Dolf Zillmann, Hillsdale, NJ: Erlbaum, 273–314.
- Gunter, Barrie (1994), "The Question of Media Violence," in *Media Effects: Advances in Theory and Research*, ed. Jennings Bryant and Dolf Zillmann, Hillsdale, NJ: Erlbaum, 163–211.
- Hawkins, Robert P. and Suzanne Pingree (1982), "Television's Influence on Constructions of Social Reality," in *Television and Behavior: Ten Years of Scientific Progress and Implications for the Eighties*, ed. David Pearl et al., technical report, Washington, DC: Government Printing Office, 224–247.
- and Suzanne Pingree (1990), "Divergent Psychological Processes in Constructing Social Reality from Mass Media Content," in *Cultivation Analysis: New Directions in Media Effects Research*, ed. Nancy Signorielli and Michael Morgan, Newbury Park, CA: Sage, 33–50.
- Herr, Paul M., Frank R. Kardes, and John Kim (1991), "Effects of Word-of-Mouth and Product-Attribute Information on Persuasion: An Accessibility-Diagnosticity Perspective," *Journal of Consumer Research*, 17 (March), 454–462.
- Higgins, E. Tory and C. Miguel Brendl (1995), "Accessibility and Applicability: Some 'Activation Rules' Influencing Judgment," *Journal of Experimental Social Psychology*, 31 (May), 218–243.
- , William S. Rholes, and Carl R. Jones (1977), "Category Accessibility and Impression Formation," *Journal of Experimental Social Psychology*, 13 (March), 141–154.
- Hirsch, Paul M. (1980), "The Scary World of the Nonviewer and Other Anomalies: A Reanalysis of Gerbner et al.'s Findings on Cultivation Analysis," *Communication Research*, 7 (October), 403–456.
- Johnson, Marcia K., Shahin Hashtroudi, and D. Stephen Lindsay (1993), "Source Monitoring," *Psychological Bulletin*, 114 (July), 3–28.
- Lichter, Robert S., Linda S. Lichter, and Stanley Rothman (1994), *Prime Time: How TV Portrays American Culture*, Washington, DC: Regnery.
- Mares, Marie-Louise (1996), "The Role of Source Confusions in Television's Cultivation of Social Reality Judgments," *Human Communication Research*, 23 (December), 278–297.
- Martin, Leonard L. (1986), "Set/Reset: Use and Disuse of Concepts in Impression Formation," *Journal of Personality and Social Psychology*, 51 (September), 493–504.

- , John J. Seta, and Rick A. Crelia (1990), "Assimilation and Contrast as a Function of People's Willingness and Ability to Expend Effort in Forming an Impression," *Journal of Personality and Social Psychology*, 59 (July), 27–37.
- McGuire, William J. (1986), "The Myth of Massive Media Impact: Savagings and Salvagings," in *Public Communication and Behavior*, Vol. 1, ed. George Comstock, New York: Academic Press, 173–257.
- Meyers-Levy, Joan and Brian Sternthal (1993), "A Two-Factor Explanation of Assimilation and Contrast Effects," *Journal of Marketing Research*, 30 (August), 359–368.
- and Alice M. Tybout (1997), "Context Effects at Encoding and Judgment in Consumption Settings: The Role of Cognitive Resources," *Journal of Consumer Research*, 24 (June), 1–14.
- Morgan, Michael and James Shanahan (1996), "Two Decades of Cultivation Research: An Appraisal and Meta-Analysis," in *Communication Yearbook 20*, ed. Brant R. Burleson, Newbury Park, CA: Sage, 1–45.
- Nielsen, A. C. (1995), *Nielsen Report on Television*, Northbrook, IL: A. C. Nielsen.
- O'Guinn, Thomas C. and L. J. Shrum (1997), "The Role of Television in the Construction of Consumer Reality," *Journal of Consumer Research*, 23 (March), 278–294.
- Rothman, Alexander J. and Curtis D. Hardin (1997), "Differential Use of the Availability Heuristic in Social Judgment," *Personality and Social Psychology Bulletin*, 23 (February), 123–138.
- Rubin, Alan M., Elizabeth M. Perse, and Donald S. Taylor (1988), "A Methodological Examination of Cultivation," *Communication Research*, 15 (April), 107–134.
- Schwarz, Norbert, Herbert Bless, Fritz Strack, Gisela Klumpp, Helga Rittenauer-Schatka, and Annette Simons (1991), "Ease of Retrieval as Information: Another Look at the Availability Heuristic," *Journal of Personality and Social Psychology*, 61 (August), 195–202.
- , Hans-J. Hippler, Brigitte Deutsch, and Fritz Strack (1985), "Response Categories: Effects on Behavioral Reports and Comparative Judgments," *Public Opinion Quarterly*, 49 (Fall), 388–395.
- Scott, Linda M. (1994), "The Bridge from Text to Mind: Adapting Reader-Response Theory to Consumer Research," *Journal of Consumer Research*, 21 (December), 461–480.
- Shapiro, Michael A. (1991), "Memory and Decision Processes in the Construction of Social Reality," *Communication Research*, 18 (February), 3–24.
- Shrum, L. J. (1995), "Assessing the Social Influence of Television: A Social Cognition Perspective on Cultivation Effects," *Communication Research*, 22 (August), 402–429.
- (1996), "Psychological Processes Underlying Cultivation Effects: Further Tests of Construct Accessibility," *Human Communication Research*, 22 (June), 482–509.
- (1997), "The Role of Source Confusion in Cultivation Effects May Depend on Processing Strategy: A Comment on Mares (1996)," *Human Communication Research*, 24 (December), 349–358.
- (forthcoming), "Processing Strategy Moderates the Cultivation Effect: Implications for Heuristic Processing and Source Discounting," manuscript under editorial review.
- and Thomas C. O'Guinn (1993), "Process and Effects in the Construction of Social Reality: Construct Accessibility as an Explanatory Variable," *Communication Research*, 20 (June), 436–471.
- , Thomas C. O'Guinn, and Ronald J. Faber (1990), "Television and the Social Reality of Consumption," paper presented at the annual conference of the International Communication Association, Dublin.
- , Thomas C. O'Guinn, Richard J. Semenik, and Ronald J. Faber (1991), "Process and Effects in the Construction of Normative Consumer Beliefs: The Role of Television," in *Advances in Consumer Research*, Vol. 18, ed. Rebecca H. Holman and Michael R. Solomon, Provo, UT: Association for Consumer Research, 755–763.
- Snyder, Mark and William B. Swann (1978), "Hypothesis-Testing Processes in Social Interaction," *Journal of Personality and Social Psychology*, 36 (November), 1202–1212.
- Swann, William B. and Toni Giuliano (1987), "Confirmatory Search Strategies in Social Interaction: How, When, Why, and with What Consequences," *Journal of Social and Clinical Psychology*, 5 (4), 511–524.
- Tversky, Amos and Daniel Kahneman (1973), "Availability: A Heuristic for Judging Frequency and Probability," *Cognitive Psychology*, 5 (September), 207–232.
- Volgy, Thomas and John Schwarz (1980), "Television Entertainment Programming and Sociopolitical Attitudes," *Journalism Quarterly*, 57 (Spring), 150–155.
- Wegener, Duane T. and Richard E. Petty (1995), "Flexible Correction Processes in Social Judgment: The Role of Native Theories in Corrections for Perceived Bias," *Journal of Personality and Social Psychology*, 68 (January), 36–51.
- Wood, Wendy, Frank Y. Wong, and J. Gregory Chachere (1991), "Effects of Media Violence on Viewers' Aggression in Unconstrained Social Interaction," *Psychological Bulletin*, 109 (May), 371–383.
- Wyer, Robert S., Galen V. Bodenhausen, and Theresa Gorman (1985), "Cognitive Mediators of Reactions to Rape," *Journal of Personality and Social Psychology*, 48 (February), 324–338.
- and Thomas L. Budesheim (1987), "Person Memory and Judgments: The Impact of Information That One Is Told to Disregard," *Journal of Personality and Social Psychology*, 53 (July), 14–29.
- and Thomas K. Srull (1989), *Memory and Cognition in Its Social Context*, Hillsdale, NJ: Erlbaum.
- and William H. Unverzagt (1985), "Effects of Instructions to Disregard Information on Its Subsequent Recall and Use in Making Judgments," *Journal of Personality and Social Psychology*, 48 (March), 533–549.