

Mainstreaming, Resonance, and Impersonal Impact

Testing Moderators of the Cultivation Effect for Estimates of Crime Risk

L. J. SHRUM
Rutgers University
VALERIE DARMANIN BISCHAK
DoubleClick Inc.

People may use information from a variety of sources in constructing their judgments of crime risk, including direct experience, word-of-mouth, and the mass media. One hundred fifty-eight general population respondents provided 3 estimates of risk of violent crime: societal crime risk, personal crime risk to themselves in their own neighborhood, and personal crime risk to themselves in New York City. Respondents' level of television viewing was related to their estimates of societal crime risk and to their estimates of personal crime risk in New York City ($p < .05$) but not to their estimates of personal crime risk in their own neighborhood ($p < .05$). This pattern of results was qualified by a significant interaction ($p < .05$): all 3 risk estimates were related to respondents' level of television viewing only for those with high direct experience with crime, results that are consistent with Gerbner's concept of resonance (Gerbner et al., 1980). The implications for the concept of impersonal impact (Tyler, 1980) and Gerbner et al.'s concepts of cultivation and mainstreaming are also discussed.

In the course of constructing judgments of risk, people use information from a variety of sources. In particular, information may be obtained from events personally experienced (direct experience) as well as from communication channels such as word-of-mouth and the mass media (indirect experience).

Although researchers have been interested in how different experience modalities relate to risk judgments, there is little consensus with respect

L. J. Shrum (Ph.D., University of Illinois, 1992) is an associate professor in the Department of Marketing at Rutgers University. *Valerie Darmanin Bischak* (B.S., Rutgers University, 1997) is business development manager at DoubleClick Inc. This research was supported by grants from the Harry Frank Guggenheim Foundation and Rutgers University Research Council to the first author. The assistance of Sharyl Ali, Maria Cino, Deborah Custer, Reginald Funderburk, Miwa Nigamitsu, Emily Sierveld, and Louis Timchak in data collection is gratefully acknowledged. Thanks are also offered to Tina Lowrey and Bob Wyer for helpful comments on previous versions of this manuscript. Portions of this research comprise the second author's honors thesis, supervised by the first author, and were presented at the 1999 meeting of the International Communication Association in San Francisco. Address correspondence to L. J. Shrum, Department of Marketing, Rutgers University, 94 Rockefeller Rd., Piscataway, NJ 08854; email: shrum@business.rutgers.edu.

to the relative contribution of each. In fact, there are a number of competing theories that have implications for the effects of experience modality on judgments of risk, particularly when the judgments of risk pertain to crime victimization, a risk judgment that has been associated in various ways with the viewing of media violence (for reviews, see Hawkins & Pingree, 1982; Morgan & Shanahan, 1996; Ogles, 1987).

The purpose of this article is three-fold. First, the various competing theories are discussed with the aim of delineating areas of both commonality and difference. Although at some point each theory makes different predictions about the influence of direct and indirect experience, the theories also share some underlying principles. Second, each theory is considered from a social cognition perspective. Even though the various theories differ in the extent to which they take a psychological or sociological perspective on the research question, all at some point involve assessment of effects at the individual level. Consequently, the influence of either direct or indirect experience on these effects must necessarily come from the retrieval of experiences from memory. Thus, the question of the influence of experience modality on risk assessment is considered in terms of memory and judgment. Finally, a study is presented that attempts to extend previous research and provide a context in which to test the different theories.

Although some of the theories that address the inputs into risk judgments may be generalized across various types of risk (e.g., contracting a disease, being involved in a natural disaster), this article focuses solely on the risk of crime victimization. This focus is mainly due to the fact that some of the theories to be discussed address only this type of risk, but all of the theories at some point make reference to risk of crime victimization. Moreover, communication researchers have long been interested in understanding the effects of media violence (a particular type of indirect experience) on judgments, and these judgments have often been assessed as the probability of crime victimization.

MEDIA CONSUMPTION AND PERCEPTIONS OF CRIME RISK

Cultivation Theory

Cultivation theory is based on the premise that both the ubiquity and consistency of television portrayals in American society have made it the primary source of information about the social world. As such, cultivation theory is a theory about the effects of indirect experience on the construction of social reality. In its simplest form, cultivation theory suggests that the indirect experience gained from television viewing will come to supplant direct experience as the primary basis for developing social beliefs (Gerbner, Gross, Morgan, & Signorielli, 1994).

Although cultivation theory pertains to all aspects of the television message, by far the most frequent focus has been on the effects of viewing television violence. Numerous content analyses have documented the prevalence of violent portrayals on typical television fare (Gerbner, Gross, Morgan, & Signorielli, 1980; Lichter, Lichter, & Rothman, 1994; Wilson et al., 1996). Gerbner and colleagues assert that one of the effects of viewing television violence is to increase viewers' perceptions of their risk of crime victimization (Gerbner & Gross, 1976). Gerbner and colleagues suggest that frequent viewing of television's representations of often graphic examples of crime victimization for the most part will overwhelm all other sources of information that might typically serve as inputs into estimates of risk of crime victimization. Thus, in looking at the relation between television viewing and estimates of crime risk, cultivation predicts a *main effect* for television viewing: Increased viewing should result in higher estimates of the risk of crime victimization.

A number of studies have provided support for the argument that heavy viewers will perceive a greater risk of crime victimization than light viewers. Gerbner, Gross, Signorielli, Morgan, and Jackson-Beeck (1979) found that heavy viewers gave higher estimates of the prevalence of violence than and expressed a greater fear of walking alone at night than did light viewers. Similar results have been reported in other studies by Gerbner and colleagues (for a review, see Hawkins & Pingree, 1982) as well as other researchers (e.g., Hawkins & Pingree, 1980; Shrum, 2001; Shrum & O'Guinn, 1993; Shrum, Wyer, & O'Guinn, 1998).

Cultivation and information processing. Although Gerbner and colleagues have described the general cultivation effect in sociological terms, the finding that heavy viewers estimate a higher probability of being the victim of a crime than do light viewers can be understood in terms of the way people process information (Shrum, 1995, 1999). Research has shown that people often construct their judgments of probability of occurrence on the basis of the attributes of the information they retrieve from memory. For example, people tend to base estimates of frequency or probability on the general ease with which an example can be retrieved (termed the *availability heuristic*; Tversky & Kahneman, 1973), the ease with which a particular event can be imagined (termed the *simulation heuristic*; Kahneman & Tversky, 1982), and the similarity between features of the event being judged and a prototype (termed the *representativeness heuristic*; Kahneman & Tversky, 1972). In the area of cultivation effects, research has shown that television viewing makes relevant information more accessible for heavy viewers than light viewers and that this accessibility bias at least partially accounts for the positive relation between television viewing and estimates of frequency and probability (Shrum & O'Guinn, 1993;

Shrum, 1996). Moreover, this pattern of results has been shown to be a function of respondents' tendencies to use heuristic processing in constructing these types of judgments (Shrum, 2001).

In terms of modality of experience (direct vs. indirect), these results suggest that the accessibility of information is the governing factor in the construction of risk judgments. Television viewing is presumed to generate many more examples of crime victimization than direct experience, particularly for heavier viewers. This enhanced accessibility of television examples in turn inflates the risk estimates.

Mainstreaming

Although general cultivation theory holds that heavy viewers should have world views that are more consistent with the world of television than light viewers, there have been modifications and refinements to the theory that have been directed toward understanding variables that may moderate the relation between television viewing and the various cultivation-type judgments. One of these refinements is *mainstreaming* (Gerbner et al., 1980). Mainstreaming is the view that people's life experiences may moderate the cultivation effect. Specifically, those whose life experiences are more discrepant from the world of television are the most likely to be influenced by the television message. Consistent with this reformulation of cultivation effects, Gerbner et al. (1980) showed that when television viewing was considered as a function of income or race, only respondents with high or moderate incomes showed a positive relation between television viewing and the belief that fear of crime is a serious personal problem, whereas those with low incomes showed no such effect. Similarly, the cultivation effect was noted for White respondents but not for non-White respondents.¹ Thus, mainstreaming predicts an interaction between television viewing and certain demographic variables.

Mainstreaming and information processing. In keeping with their sociological perspective on cultivation, Gerbner and colleagues have tended to focus on traditional aggregate variables such as income and race, and they have seldom if ever measured direct experience (1980, 1982). However, at the individual level, such "life experience" variables can be viewed as surrogate measures for direct experience. Viewed this way, mainstreaming predicts an interaction between television viewing and direct experience such that television viewing has the greatest effect on the judgments of those whose direct experience may differ dramatically from the world of television. In terms of perceptions of risk of crime victimization, those who have less direct experience with crime should be more affected by television viewing than those who have more direct experience with crime. Thus, mainstreaming introduces direct experience as a moderating factor in the cultivation effect.

Such a conceptualization is consistent with research on accessibility and its effects on the processing of information. It seems likely that instances of crime that are directly experienced may be more vivid, thought about more often, and elaborated upon to a greater degree, all of which enhance the accessibility of information (Higgins & King, 1981; Wyer & Srull, 1989). Consequently, the direct experience information may overwhelm television information regardless of television viewing level. If so, the relative effect of television information for those high on direct experience should be diminished. However, those low on direct experience essentially have only indirect experience (including television information) to draw upon in constructing their judgments. In this case, then, the enhanced accessibility of information as a consequence of frequent television viewing should lead to higher estimates for those who watch relatively more television.

Resonance

A second refinement to general cultivation theory is *resonance* (Gerbner et al., 1980). Like mainstreaming, resonance suggests that viewers' life experiences may moderate the cultivation relation. However, resonance predicts an interaction between television viewing and life experience that is essentially opposite to that of mainstreaming. Resonance suggests that those people whose life experiences are more congruent with the experiences of the television world will be most affected by the television message, rather than least affected as mainstreaming predicts. When a viewer's personal experiences involve crime and violence, heavy viewing of television programs depicting crime victimization "may result in a 'double dose' of the television message and significantly boost cultivation" (Gerbner et al., 1980, p. 15).

Resonance and information processing. Like mainstreaming, the demographic variables that roughly approximate life experience may be conceptualized as direct experience. Thus, resonance predicts that direct experience will moderate the cultivation relation such that those with more direct experience will be more affected by television viewing than those with less direct experience.

In terms of experience modality and information processing, resonance suggests that direct experience and indirect experience combine to make instances of crime highly accessible. It seems reasonable to think that people who have had direct experience with crime victimization likely have a detailed and accessible representation of crime, and therefore likely that they will interpret the crime-related episodes they see on television in terms of this representation. If so, not only are the direct experiences with crime made more accessible due to frequent activation (Higgins &

King, 1981; Wyer & Srull, 1989), but if there exists sufficient similarities between direct experience and the television representations, the television representations may not be labeled as "TV crimes," leading to possible confusion as to the source of the representations retrieved from memory (Johnson, Hashtroudi, & Lindsay, 1993). Consequently, the highly accessible examples of crime, regardless of their origin as direct or television experience, may be used as the basis for judgment for those with high direct experience. However, those who are low on direct experience should be less likely to process television information in terms of previously held representations that are the product of direct experience. Thus, they should have less of a tendency to confuse television and direct experience examples, and thus less likely to use the television information as a basis for judgment.

Impersonal Impact Hypothesis

Another theoretical formulation that has been advanced to explain how judgments of crime victimization are formulated has been termed the *impersonal impact hypothesis* (Tyler, 1980; Tyler & Cook, 1984). This hypothesis can be viewed as consisting of two components. The first component suggests that general judgments about crime victimization can be broken down into two types: societal-level risk judgments and personal-level risk judgments. A societal judgment refers to a general judgment about any person's risk of crime victimization or concern about the societal crime rate (e.g., an estimate of the percentage of people who are involved in a violent crime each year), whereas a personal risk judgment refers to an estimate of a person's own risk of crime victimization (e.g., an estimate of one's own chances of being robbed or fear of walking alone at night near one's home). Tyler further asserts that these types of judgments are independent and that an experience modality that affects one type of judgment need not affect the other (Tyler, 1980, 1984; Tyler & Cook, 1984).

The second component of the impersonal impact hypothesis concerns the differential impact of direct and indirect experience on the two judgments. Tyler and Cook (1984) suggest that the indirect experience gained from media information tends to affect only societal level judgments, whereas personal level judgments are made primarily on the basis of direct experience, with little or no influence of media consumption. This hypothesis has not only been supported by Tyler's work (Tyler, 1980; Tyler & Cook, 1984), but is also consistent with some of the research on cultivation effects. Hawkins and Pingree's (1982) review of cultivation research tentatively concludes that television viewing affects judgments for demographic or first-order type estimates (often societal-level judgments) but has little effect on value-system or second-order type judgments (often personal-level judgments).

Impersonal impact hypothesis and information processing. The impersonal impact hypothesis departs from cultivation theory and its refinements in a number of important ways. Rather than predicting a general main effect of television viewing, or even an interaction between television viewing and experience modality, the impersonal impact hypothesis suggests that the effect of television viewing is a function of the type of judgment.

The notion that direct experience is used as the primary input into personal level judgments and indirect experience primarily affects societal level judgments has a number of implications for the processes involved in the construction of the different judgments. Just as with the general cultivation prediction, as well as predictions of mainstreaming and resonance, the general notion of accessibility and its impact on judgments can be used as a framework for understanding the impersonal impact hypothesis.

The key difference between cultivation theory and its derivations and the impersonal impact hypothesis concerns the diagnosticity of the accessible information. Diagnosticity refers to the relevance of a particular piece of information; information that is useful and relevant to a particular judgment is said to be diagnostic. Diagnosticity has been shown to be an important moderator of the impact of information accessibility on judgment. Research has shown that the priming of categories (i.e., making them more accessible) that are relevant to a particular judgment results in an assimilation effect (Higgins, Rholes, & Jones, 1977; Srull & Wyer, 1979, 1980; for a review, see Wyer & Srull, 1989). That is, the primed category is "assimilated" into the judgment process and judgments are then made that are consistent with the primed category. However, when the primed category is irrelevant or differs from the judgment category, no priming effects are noted (Higgins, 1996; Higgins & Brendl, 1995, Experiment 1).

With respect to the impersonal impact hypothesis, it is likely that direct experience is considered more diagnostic than media reports when people estimate their own risk of crime victimization. In other words, on the one hand, regardless of accessibility, it is likely that media reports of crime victimization of other people in general hold little relevance for estimating one's risk of being victimized while walking alone at night in one's own neighborhood. Rather, a person's experience with crime victimization in his or her neighborhood is the most relevant and diagnostic information. On the other hand, direct experience with crime victimization in one's own neighborhood likely holds little relevance for estimating societal crime rates.² Thus, "perceived informativeness" of the crime information may influence the likelihood that the information will be used as the basis for the risk judgments (Tyler, 1980).

Ambiguities in definitions and analysis. Although the evidence supporting the impersonal impact hypothesis is compelling, there are some definitional and analytical ambiguities about the relation between type of risk judgment and experience modality that have not been addressed, and these ambiguities have often led to misleading representations of precisely what the impersonal impact hypothesis predicts. One ambiguity pertains to what is meant by "personal risk." The impersonal impact hypothesis is often presented as the notion that mass media representations tend not to affect estimates of personal crime risk; only direct experience affects personal crime risk estimates (cf. Gunter, 1994; Price & Roberts, 1987; Tyler, 1980, 1984). However, to be more precise, the data from Tyler (1980)—the only study by Tyler that pertains to both crime risk and media usage—suggest that mass media representations tend not to affect estimates of personal crime risk *in one's own neighborhood*. For example, in Tyler (1980), most all of the examples of personal risk judgments specifically set the context in one's own neighborhood. Left unaddressed is how direct or mass-mediated experience affects people's personal level judgments *outside* their own neighborhood.

A second ambiguity pertains to what is meant by "mass media representations." Whereas the general term would presumably include all television representations (e.g., fictional as well as nonfictional), this was not what was measured by Tyler (1980). In fact, media usage was not measured at all. Rather, study participants were asked to indicate the number of crimes they had learned about through newspapers, TV, or radio, both inside and outside their neighborhood (Study 1), whether they had read about a crime in the newspaper during the previous day (Study 2), and whether they remembered hearing about a crime through the media in the previous 2 weeks (Study 2). In the other study that provided the basis for Tyler's impersonal impact hypothesis (Tyler & Cook, 1984), mass media exposure was manipulated by having participants watch a news documentary (Study 1) or read a report from a newspaper or magazine (Study 3).

The measures of mass media consumption used by Tyler (1980) have two important implications. First, the measures are clearly distinct from the types of measures used by Gerbner and colleagues, who use a measure of total television viewing (Gerbner et al., 1994), and thus Tyler's work cannot serve to directly refute the validity of the cultivation effect. Second, Tyler's choice of measures appears to assume a rational, conscious process in the construction of crime risk estimates. That is, for the most part, only the mass media reports from valid sources (e.g., newspapers) that respondents could recall were measured. However, recent work suggests that the construction of these types of judgments may not necessarily be conscious nor based on clearly valid information (Bargh & Chartrand, 1999; Shrum, 1995, 1999).

A third ambiguity is a function of the types of analyses used to test the impersonal impact hypothesis. Although the results from Tyler (1980) suggest main effects for media information but no main effects of direct experience on judgments of societal risk, and main effects of direct experience but no main effects of mass media information on judgments of personal risk, the interaction between direct experience and media information was not assessed. This is a critical issue in two respects. First, without the interaction term, it is not possible to assess the validity of either mainstreaming or resonance (each of which predict an interaction between direct experience and media usage). Second, and related to testing for mainstreaming and resonance, it is not possible to test the implied independence of the two types of judgments without the inclusion of the interaction term in the analysis. For example, a main effect for television viewing on societal risk judgments may be entirely driven by the effect of viewing on those with high direct experience (resonance) or those with low direct experience (mainstreaming). If either of these cases are true, the theoretical reasoning underlying the impersonal impact hypothesis is undermined, even though support for the main effect is obtained. In a similar manner, the lack of particular main effects predicted by the impersonal impact hypothesis may also be the function of an interaction in which the effects of the two independent variables cancel each other out.

OVERVIEW OF THE STUDY

The study that follows was designed to test the competing hypotheses derived from the theoretical formations of general cultivation, mainstreaming, resonance, and impersonal impact as they pertain to judgments of crime risk. As detailed earlier, each of these hypotheses makes different predictions. These predictions are summarized in Table 1.

The study was also designed to test an additional hypothesis that pertains to the impersonal impact hypothesis. Specifically, we were interested in determining whether the prediction of a main effect of direct experience on judgments of personal crime risk held for all personal crime risk judgments or whether this effect was confined to personal crime risk judgments in one's own neighborhood.

Thus, along with measuring people's perceptions of societal crime risk and personal crime risk (in their own neighborhood), we also asked people to provide judgments of personal crime risk in a venue outside their own neighborhood, specifically, in New York City (none of the respondents lived in New York City). If all personal risk judgments are based primarily on direct experience alone, television viewing should have no effect on either of the personal risk judgments. However, if only judgments of personal risk in which a person has considerable direct experience (e.g.,

TABLE 1
Indicators of Support Associated with Predictions Made By Theories of General Cultivation, Impersonal Impact, Mainstreaming, and Resonance

<i>Theory</i>	<i>Support indicated by:</i>
General cultivation	Main effect for TV viewing for all crime risk judgments
Impersonal impact	Main effect for direct experience (but not TV viewing) for judgments of personal risk only
	Main effect for TV viewing (but not direct experience) for judgments of societal risk only
Mainstreaming	TV x direct experience interaction: Those with less direct experience affected more by TV viewing
Resonance	TV x direct experience interaction: Those with more direct experience affected more by TV viewing

in one's own neighborhood) are based on direct experience, but judgments of personal risk in distant areas (e.g., New York City) are based on other experiences, then the two personal crime risk judgments should show different patterns of relations with the independent variables. Specifically, estimates of personal crime risk in New York City should show a significant relation with television viewing (a pattern of results similar to that obtained for societal crime risk judgments), but estimates of personal crime risk in one's own neighborhood should not show this relation.

Finally, we were also interested in determining whether the main effects (and their absence) for different types of crime risk judgments posited by the impersonal impact hypothesis could be qualified by an interaction between television viewing and direct experience.

METHOD

Sample and Procedure

As part of a class exercise, eight university students³ who were enrolled in a senior research seminar administered a questionnaire to 158 people in the general population of a large suburban area in New Jersey, within a 50-mile radius of New York City. None of the participants had ever lived in New York City. Each student researcher was given a target of 20 questionnaires to be administered to an adult (i.e., over 21 years of age) population. The researchers were instructed to administer the questionnaires to males and females in roughly equal numbers. They were

also told that their sample should reflect a broad diversity with respect to age, income, occupation, and race. Such diversity was intended not only to provide sufficient variation on relevant demographic variables but also to provide variation in life experiences, particularly with respect to direct experience with crime. Additionally, in order to minimize the possibility of demand effects associated with previous knowledge of the study, the student researchers were explicitly instructed not to administer the questionnaires to anyone with whom they might have had a prior discussion about the subject matter discussed in the research seminar in which they were enrolled.⁴

A total of 158 questionnaires were administered (one student fell two short of the assigned quota of 20). A cover letter assured anonymity and confidentiality. All of those contacted agreed to participate and provided informed consent. All participants were debriefed following their completion of the survey.

One survey was discarded because of missing data (the respondent skipped a section), leaving a total of 157 usable questionnaires for the analysis. Respondents ranged in age from 21 to 94 years of age ($M = 38$ yrs.; median = 34 yrs.) and annual household income ranged from \$10,000 to over \$100,000 ($M = \$60,000$; median = \$50,000). About half (49%) of the respondents were married and the average household size was 2.94 (median = 2). Non-Whites comprised of 33.1% of the sample; women comprised 50.3% of the sample.

Dependent Variables

Part 1 of the questionnaire contained the dependent measures for the study. Four general measures adapted from previous studies (e.g., Gerbner, Gross, Jackson-Beeck, Jeffries-Fox, & Signorielli, 1978; Shapiro, 1991; Shrum, 1996; Shrum & O'Guinn, 1993; Tyler, 1980) were used to measure respondents' perceptions of violent crime: a percentage estimate of the chance of involvement in a violent crime in the next year; a percentage estimate of police officers who draw their gun in an average day; a percentage estimate of the likelihood of being a victim of a violent crime while jogging after dark; and a percentage estimate of witnessing a violent crime in the next year. Using these four general measures, three versions of each question were constructed to assess different experience modalities: *societal crime risk* (e.g., What percentage of adult Americans will be involved in a violent crime within the next year?), *personal crime risk (own neighborhood)* (e.g., What would you estimate your chances [in %] of being involved in a violent crime within the next year in your own neighborhood?), and *personal crime risk (NYC)* (e.g., What would you estimate your chances [in %] of being involved in a violent crime if you spent a month in New York City?). In total, 12 questions were asked. Explor-

atory factor analysis indicated that the items loaded as expected (results of the factor analysis are available from the first author). Composite measures were computed by averaging the estimates of societal crime risk ($\alpha = .72$), personal crime risk (own neighborhood; $\alpha = .75$), and personal crime risk (NYC; $\alpha = .73$). Note that the two personal crime risk measures are independent estimates because none of the respondents lived in New York City.

Independent Variables

Direct and indirect experience. Measures of direct and indirect experience with crime were also constructed and appeared in Part 2 of the questionnaire. The measures corresponded to each of the four general dependent measures. Direct experience with crime was assessed by asking respondents to indicate (Yes/No) whether they had ever been the victim of a violent crime, witnessed a police officer draw a gun, walked or jogged alone after dark, or witnessed a violent crime. Except for the question pertaining to witnessing a police officer draw a gun, the questions were restricted to experience within the last five years. This restriction was imposed in order to assure a reasonably high degree of accessibility from memory (pretests indicated that such a restriction for the question pertaining to a police officer drawing a gun would not provide any variability because of the relatively low occurrence of witnessing such a behavior). Respondents received a score of "1" if they indicated "yes" and a score of "0" if they indicated "no" to each direct experience measure. A composite measure of direct experience was constructed by summing across the four measures.

Indirect experience was assessed by asking the same questions, but substituting the phrase "any close friends or relatives" for "you," and not restricting the indirect experience to within the last five years. Note that indirect experience is thus defined as interpersonal experience and as such does not include media experiences. Mass media experience (television, newspapers, magazines) was measured separately (see below). As with direct experience, a composite measure of indirect experience was constructed by summing across the four indirect experience measures.

Direct experience with New York City was assessed by asking people to indicate in an open-ended format how many times they had visited New York City in the last year.

In addition to the experience variables, amount of television viewing was assessed using two different measures. In Part 3 of the questionnaire, respondents first indicated the number of hours they watched television the previous day and then estimated the average number of hours they watch in a typical day (Rubin, Perse, & Taylor, 1988). The two measures of viewing frequency were sufficiently correlated ($r = .65$) to permit them to be averaged into a single estimate of television viewing time for each respondent.⁵

Control Variables

Demographic variables pertaining to age, household income, and sex (dummy coded 0 = female, 1 = male) were measured and used as control variables. These variables have often been shown to correlate with measures used in typical cultivation-type studies (e.g., Hawkins & Pingree, 1982; Hughes, 1980; Shrum, 1996). In addition, information pertaining to other media use was collected (average hours per week spent reading newspapers and average hours per week spent reading magazines) in order to account for effects of media other than television.

RESULTS

Cultivation and Impersonal Impact

Our first analysis sought to juxtapose predictions derived from cultivation theory with Tyler's (1980) assertion that the effect of media information is a function of whether the crime risk judgments are societal or personal in nature. In addition, we were interested in determining whether personal crime risk judgments themselves could be further divided (i.e., personal crime risk in one's own neighborhood vs. outside one's own neighborhood, such as New York City).

To test Tyler's assertion that judgments of personal and societal crime risks are distinct and relatively independent of each other, we first examined the correlations between the societal crime risk estimate, the personal crime risk (own neighborhood) estimate, and the personal crime risk (NYC) estimates. This analysis indicated that there is a moderate correlation between personal risk (own neighborhood) and societal risk ($r = .51, p < .01$) and between personal risk (own neighborhood) and personal risk (NYC; $r = .46, p < .01$). Although these correlations are higher than those that Tyler (1980) reported for crime risk ($r_s < .10, ns$) and that Tyler and Cook (1984) reported for risks such as firearms, drunk driving, and floods (r_s ranging from $-.02$ to $.38$), the magnitude suggests that the types of crime risk judgments differ. However, the correlation between societal crime risk and personal crime risk (NYC) was substantial ($r = .71, p < .01$), suggesting that these judgments are not entirely independent. This finding is consistent with the notion that societal crime risk judgments and personal crime risk judgments outside one's own neighborhood may be constructed in similar ways.

In order to determine the relation between the experience modalities and the three crime risk judgments, we used stepwise multiple regression analysis. Examination of the residuals indicated that the assumptions of normality and homoscedasticity were plausible. Examination of the correlation matrix for the predictor variables indicated that there were no problems with multicollinearity (no r_s greater than $.50$; determinant of the correlation matrix = $.24$).

In the first step of the regression analysis, indirect and direct experience with crime, direct experience with New York City, television viewing, and the various control variables were entered as a block. The direct experience and television viewing variables were mean centered to reduce collinearity with the interaction term (Aiken & West, 1991). The TV Viewing \times Direct Experience interaction term, computed as the product of the two mean-centered variables, was then entered in the second step.⁶ Main effects would be noted by a significant effect in the first step; a significant effect for the entry of the interaction term would indicate that the effect of television viewing is dependent on the level of direct experience.

The general cultivation hypothesis predicts a main effect of television viewing for all three crime risk judgments, whereas the impersonal impact hypothesis predicts a main effect of television viewing only for societal crime risk judgments, with personal crime risk judgments affected only by direct experience. Information bearing on these possibilities can be found in the first step of the regression analyses presented in Table 2. As the table indicates, cultivation effects were noted for estimates of societal crime risk and personal crime risk (NYC) but not for the estimates of personal crime risk (own neighborhood). This pattern of results provides general support for the impersonal impact hypothesis, but with the caveat that the notion that estimates of personal crime risk are unaffected by media information holds only when the judgments of personal crime risk pertain to risk within one's own neighborhood.

The impersonal impact hypothesis also asserts that direct experience with crime will influence only personal crime risk estimates and not societal crime risk estimates. This aspect of the hypothesis receives less support. First, direct experience with crime was a significant predictor of estimates of societal crime risk. Second, the relation between direct experience with crime and estimates of personal (own neighborhood) crime risk only approached conventional levels of significance ($p = .08$).

Mainstreaming and Resonance

Mainstreaming and resonance advance the notion that even though a general cultivation effect may not always be observed (i.e., a main effect for television viewing), television viewing may have an effect on judgments as a function of direct experience: Mainstreaming is evidenced by a greater effect of television viewing on those with less direct experience and resonance is noted by a greater effect of television viewing on those with more direct experience. These effects would be noted by a significant TV Viewing \times Direct Experience interaction. Note that these possible interactions also have implications for assessing the validity of the impersonal impact hypothesis. As discussed earlier, previous research that showed a differential impact of direct experience and television viewing

as a function of type of risk judgment (e.g., Tyler, 1980) did not include interaction terms in the analysis.

Information pertaining to these interactions can be found in the second step of the regression analysis presented in Table 2. (The magnitude and significance of the control variables did not change as a function of adding the interaction term in the second step of the regression and therefore the control variables are not discussed further.) As the table shows, the main effects for direct experience and television viewing are qualified by a TV Viewing \times Direct Experience interaction for all three dependent variables, effects that could potentially be associated with either mainstreaming or resonance. However, because mainstreaming and resonance make predictions of an interaction but with different patterns, the interaction term in Table 2 alone is not sufficient to determine which hypothesis receives support.

To assess the pattern of the interactions noted, television viewing was divided into heavy and light viewing groups based on a median split. The heavy viewing group represents those who indicated viewing over 2 hours per day ($n = 82$) and the light viewing group represents those who indicated viewing 2 hours or less per day ($n = 75$). Direct experience was also divided into high and low groups, with the low direct experience group representing those who reported no direct experience with crime ($n = 58$) and the high direct experience group representing those who indicated some direct experience with crime ($n = 99$). A 2×2 ANOVA was then conducted on the television viewing and direct experience groups.⁷

Evidence of mainstreaming would be observed if the difference between the crime risk estimates of heavy and light viewers is greater for the low direct experience group than for the high direct experience group. Evidence of resonance would be observed by the opposite pattern. Data pertaining to these possibilities can be found in Figures 1–3.

The pattern of findings across the three dependent variables is consistent and straightforward. As the graphs show, for each of the three dependent variables, the crime risk estimates of those with little direct experience with crime are virtually identical for heavy and light television viewers. However, for those who have more direct experience with crime, the estimates of heavy viewers are clearly greater than the estimates of light viewers. Paired comparison tests confirm that for all three dependent variables, the estimates of heavy and light television viewers in the low direct experience group do not significantly differ, whereas the estimates of heavy television viewers in the high direct experience group are significantly greater than the estimates of light television viewers in the high direct experience group (although for estimates of personal crime risk [own neighborhood] the differences only approach significance, $p = .10$). These patterns of results are indicative of a resonance effect.

TABLE 2
Regression Analysis Predicting Risk Estimates as a Function
of Television Viewing and Direct Experience

<i>Regression step</i>	<i>Predictor</i>	β	ΔR^2
Societal crime risk estimate			
Step 1	Age	-.06	
	Income	-.18**	
	Sex	-.22**	
	Newspapers	-.13	
	Magazines	.00	
	Indirect experience	-.14	
	Direct experience (NYC)	-.02	
	Direct experience (crime)	.24**	
	TV viewing (Block)	.21**	.20***
Step 2	TV x direct experience	.41**	.024**
Personal (own neighborhood) crime risk estimate			
Step 1	Age	-.03	
	Income	-.18**	
	Sex	-.07	
	Newspapers	-.14	
	Magazines	.02	
	Indirect experience	.06	
	Direct experience (NYC)	.06	
	Direct experience (crime)	.20*	
	TV viewing (Block)	.04	.14**
Step 2	TV x direct experience	.42**	.024**
Personal (NYC) crime risk estimate			
Step 1	Age	-.06	
	Income	-.10	
	Sex	-.19*	
	Newspapers	-.05	
	Magazines	-.03	
	Indirect experience	-.11	
	Direct experience (NYC)	-.09	
	Direct experience (crime)	.17	
	TV viewing (Block)	.20**	.13**
Step 2	TV x direct experience	.47**	.031**

*** $p < .01$; ** $p < .05$; * $p < .10$.

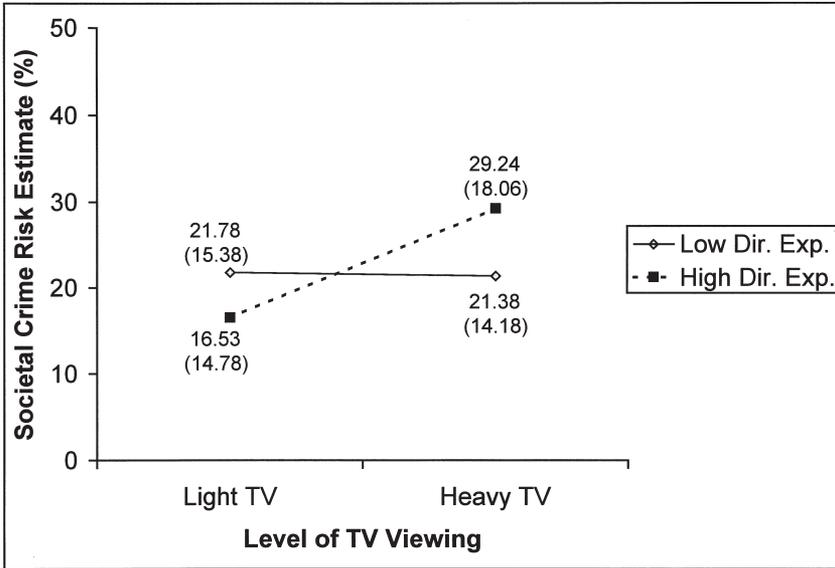


Figure 1: Societal Crime Risk Estimate as a Function of Direct Experience With Crime and Level of Television Viewing

NOTE: Numbers in the body of the figure represent means with standard deviations in parentheses.

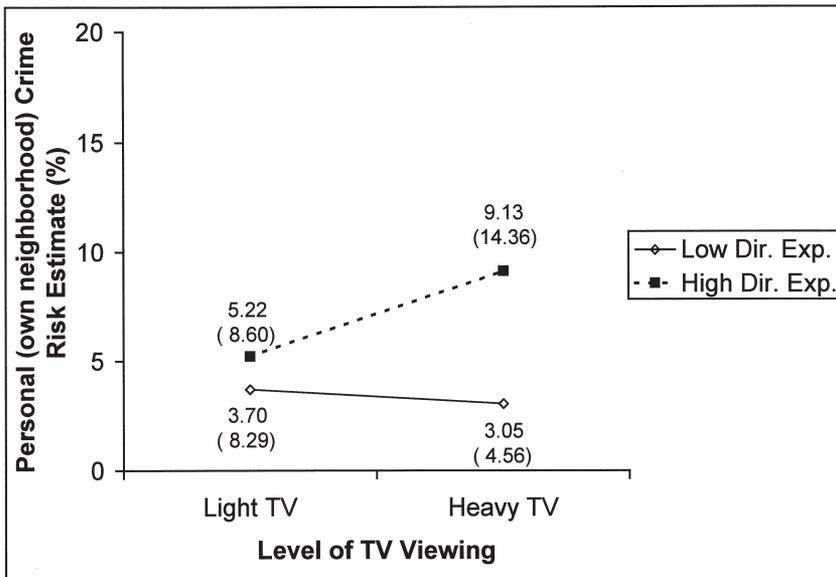


Figure 2: Personal Crime Risk (Own Neighborhood) Estimate as a Function of Direct Experience With Crime and Level of Television Viewing

NOTE: Numbers in the body of the figure represent means with standard deviations in parentheses.

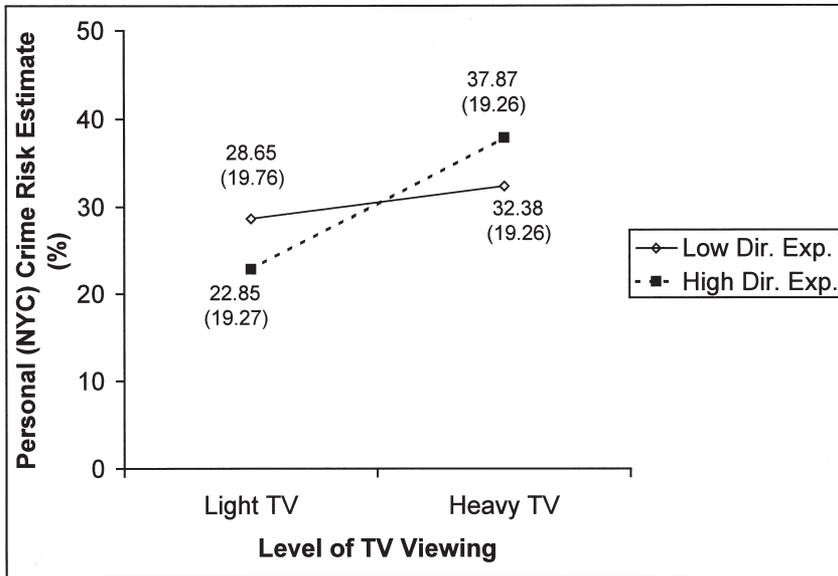


Figure 3: Personal Crime Risk (NYC) Estimate as a Function of Direct Experience With Crime and Level of Television Viewing

NOTE: Numbers in the body of the figure represent means with standard deviations in parentheses.

DISCUSSION

In the broadest terms, the purpose for this study was to test competing theories regarding the influence of mass media, particularly television, on perceptions of crime risk. In particular, we were interested in exploring possible moderators of the general cultivation effect by determining whether the effect of television viewing on judgments of crime risk varied as a function of either level of direct experience or type of crime risk judgment. Previous research has suggested that such contingencies may exist but has been vague with respect to their exact nature.

Moderators and the Impersonal Impact Hypothesis

Perhaps the starkest example of the importance of the moderator variable approach is in the testing of the impersonal impact hypothesis. The impersonal impact hypothesis suggests that (a) direct experience with crime influences judgments of personal crime risk but that mass media information has no influence on these judgments; and (b) mass media information influences judgments of societal crime risk but that direct experience has no influence on these judgments. The analyses, from which

the results shown in the top portion of Table 2 are derived, represent the method Tyler (1980) used to test these propositions, that is, by testing only for main effects. If only the first step of the regression is used to draw conclusions, then the impersonal impact hypotheses receives qualified support. Television viewing was related to estimates of societal crime risk but not to estimates of personal crime risk in one's own neighborhood, and direct experience with crime was related to personal crime risk in one's own neighborhood (albeit at $p = .10$). However, contrary to the impersonal impact hypothesis, direct experience with crime was related to estimates of societal crime risk, and television viewing but not direct experience with crime or with New York City was related to estimates of personal crime risk in New York City.⁸

Consideration of the second step of the regression, in which the interaction between direct experience and television viewing is introduced, provides a dramatically different picture. Looking at Figures 1–3, which graphically depict the nature of the interaction, it is clear that to consider only the main effects is very misleading. As Figure 1 shows (and paired comparisons generally confirm), the main effect for television viewing as it relates to estimates of societal crime risk is almost entirely driven by the estimates of those high on direct experience with crime; the estimates of those low on direct experience do not differ as a function of television viewing level. In a similar manner, as Figure 2 shows (and paired comparisons generally confirm), the main effect of direct experience on estimates of personal crime risk in one's own neighborhood is almost completely driven by the estimates of heavy television viewers; the estimates of light television viewers do not differ as a function of direct experience. Finally, as can be seen in Figure 3, estimates of personal crime risk in New York City most closely resemble the pattern of results obtained for estimates of societal crime risk; the main effect of television viewing is almost entirely driven by those who are high on direct experience with crime.

Moderators and the Cultivation Effect

These results, which show an interaction between television viewing and direct experience, directly speak to the notions of mainstreaming and resonance. Regardless of the type of crime risk judgment people made, television showed a stronger relation to the crime risk estimates of those with more direct experience with crime than those with less direct experience with crime, consistent with a resonance effect. However, no interaction pattern was observed that suggested any sort of mainstreaming effect. These results are actually fairly consistent with the much-cited study by Doob and Macdonald (1979), which specifically addressed the issue of television viewing and direct experience on estimates of crime victimiza-

tion. Although the authors did not present the data in this way (and thus no tests of differences in correlations were provided), the correlations between total television viewing and personal crime victimization appear substantially larger for those who reside in high crime rather than low crime areas (see Morgan & Shanahan, 1996, for a more in-depth discussion and reconceptualization of the Doob & Macdonald, 1979, findings).

Resonance and information processing. One cognitive process explanation that we have offered for resonance is that those with more direct experience with crime would have a richer and more accessible representation of crime available in memory than those with less direct experience with crime. Consequently, those with more direct experience with crime should be more likely to encode a television portrayal in terms of this representation, and thus may have less of a tendency to label these television representations as "TV crimes," relative to those with less direct experience. This process seems particularly likely if the issue of crime risk is important to the individual or if the representations of crime on television are particularly realistic and convincing. In fact, Tyler and Cook (1984) mention these very conditions as ones that may moderate the effects of media information on personal and societal risk estimates.

Importance of Moderators

The finding of an interaction between television viewing and direct experience is important to understanding the processes that underlie cultivation effects. Main effects can only tell us that some general effect appears to be present. Interactions, by articulating boundary conditions under which the effect does not hold, allow for systematic reasoning and testing of hypotheses about how the process works. These boundary conditions can vary along a whole host of dimensions, from naturally occurring variables such as personal characteristics (e.g., personality, direct experience) and general demographics, to laboratory-constructed contingencies (e.g., involvement, processing strategy). In fact, for many psychologists, interactions are more interesting and important than main effects and represent the most promising approach to inferring process mechanisms.

Much of cultivation research has taken just the opposite viewpoint. Perhaps this is attributable to the sociological focus of the theorists. Whatever the reason, Gerbner and colleagues, as well as other researchers (both proponents and critics of cultivation theory and research), have almost always conducted their theory testing through the search for main effects, and issues of causality are usually couched in terms of the presence or absence of a cultivation effect after the implementation of statistical controls. (As one example, compare the debates between Gerbner and

colleagues and Hirsch [Gerbner, Gross, Morgan, & Signorielli, 1981a, 1981b; Hirsch, 1980, 1981a, 1981b].) However, even though Gerbner and colleagues' conceptualization of mainstreaming and resonance clearly specify interaction effects, it is just as clear that for them such interactions are secondary to the central cultivation main effect. As they state in their response to Hirsch, "cultivation is often a virtually across-the-board phenomenon. It is quite clear from our article that 'mainstreaming' and 'resonance' *deal with the exceptions*" (Gerbner et al., 1981a, p. 61; emphasis in original). Gerbner and colleagues go on to suggest that their interest in these interaction effects occurs only when overall relationships are not forthcoming.

In our view, however, the interactions need not be relegated to such secondary status. For one thing, interactions and main effects are not mutually exclusive. This proposition can be easily observed in Figures 1–3, each of which shows an interaction as well as a main effect for either television viewing (societal crime risk and personal crime risk [NYC]) or direct experience (personal crime risk [own neighborhood]). However, the presence of an interaction may have the result of reducing the cultivation effect, at least compared to a situation in which only main effects and no interactions are observed. In fact, the presence of these types of interactions are a plausible reason why at least a portion of the reported cultivation effects may have been small, a common criticism of cultivation research in particular (Cook, Kendzierski, & Thomas, 1983; Hirsch, 1980; McGuire, 1986) and media effects in general (McGuire, 1986).

Rather than viewing moderating factors as "variables of last resort" or threats to general cultivation theory, we suggest that the discovery of such moderating variables represents the best hope for further advancing cultivation theory and research. Concepts such as mainstreaming and resonance are vitally important in understanding the true nature of the effect of television viewing on social reality construction. The notion that increased exposure to the same television message pulls groups with disparate views toward each other (mainstreaming) or that certain groups are more "at risk" than others with respect to television's cultivation of fear (resonance) seems to us to be much more dramatic than a weak general effect across all groups.

Yet very little work has systematically addressed the effects of mainstreaming and resonance and their implications. Part of the reason for a lack of focus on moderating effects such as mainstreaming and resonance may have to do with their relegation to secondary status, as discussed earlier. However, a second and potentially more influential reason may be a misunderstanding of the precise nature of each process. For example, the two moderating effects, in conjunction with a main cultivation effect, have been accused of effectively making cultivation theory nonfalsifiable (Hirsch, 1981b). Although this proposition is not precisely

the case (there are of course patterns of results that would indicate no cultivation effect, in particular, no main effect and no interaction; see also, Gerbner et al., 1981a), the combination of the three cases certainly encompasses a large majority of the possible effects. But, despite the statement we made earlier that the general concepts of mainstreaming and resonance make opposite predictions, it is not the case that either one or the other must necessarily take precedence across all variables or situations. That is, it is possible that mainstreaming may occur under certain conditions (e.g., for particular dependent variables, such as political orientations and beliefs; Gerbner, Gross, Morgan, & Signorielli, 1982, 1984; Morgan, 1986) but that resonance may be observed under other conditions (e.g., when dependent variables involve fear, probability, or perceived risk of crime victimization; see Doob & Macdonald, 1979; Morgan, 1986; as well as the results of this study). In fact, such a notion bears a similarity to the impersonal impact hypothesis, namely, that the relative influence of direct experience and media (television) information depends on the type of judgment people make. In this case, the interaction of direct experience and television information may depend on the type of judgment people make.

Specifying Mainstreaming and Resonance

Apart from advancing the field's understanding of the effects of television viewing on perceptions of crime risk, we hope that the study presented here will also contribute to a greater focus on cultivation moderators in general, and mainstreaming and resonance in particular. One clear path to progress in this area is a specification of the conditions under which either mainstreaming or resonance should occur. Such a suggestion is by no means new (Cook et al., 1983; Potter, 1993), and even though we agree to a certain extent with Morgan and Shanahan (1996), who suggest that "the enormous diversity of potential subgroups and their differential relevance for specific dependent variables makes it difficult, if not impossible, to predict a priori where and when mainstreaming will occur" (p. 17), we think it is nevertheless possible to specify general conditions under which researchers should expect to find either mainstreaming or resonance effects. We have several recommendations in this regard.

One general condition that should be specified pertains to the dependent variable. It seems likely that whether mainstreaming or resonance is at work may be a function of the types of judgments people make, as just noted with the examples of judgments of political orientation (a type of judgment that has been associated with mainstreaming) versus judgments of crime victimization (a type of judgment that has been associated with resonance). It would be useful to determine if some underlying, generalizable difference in these types of judgments governs whether the judg-

ments fall under mainstreaming or resonance. In addition, the work by Tyler (1980) and others (Sparks & Ogles, 1990) suggests that even slight variations in how judgments of fear or probability of victimization are worded may produce different relations between television viewing and the dependent variables, and in fact Gerbner et al. (1981a) note this very issue in their response to Hirsch's (1981b) criticism of the lack of consistency in observing the cultivation effect across measures. It therefore would be helpful to provide some generalizations that are grounded in theory as to which types of judgments should be associated with mainstreaming and which types of judgments should be associated with resonance, as well as the conditions under which these effects should be observed.

Our second recommendation pertains to a more precise specification of the independent (moderator) variable. Part of the reason that it may be unclear why one particular variable acts as a mainstreaming moderator but another seemingly similar variable acts as a resonance moderator (e.g., income and race vs. sex and residence; Gerbner et al., 1980) is that it is unclear what the moderators represent. For example, race has been offered as an example of mainstreaming such that non-Whites evidence a negative relation between television viewing and fear of crime but Whites show the opposite effect (Gerbner et al., 1980). Yet, it seems likely that minorities may have more direct experience with crime, may be more likely to reside in the city, and are often victimized in television portrayals, all situations that suggest a resonance effect.

For this reason, it is important to go beyond the very general demographic variables and explore more specific moderator variables. Our focus in this study on direct experience represents an attempt. We would also like to stress that research need not be confined to single moderators or the evaluation of moderators separately. It seems likely that even when a cultivation effect is noted for one group but not another (e.g., a resonance effect in which television relates to fear of crime for women but not men), yet still another variable may moderate that relation (i.e., a three-way interaction may be produced). So, for example, television viewing may be related to a greater fear of crime only for women with low self-esteem, or who have an external locus of control, and so forth.

A third recommendation concerns precision in the articulation of mainstreaming and resonance. Little has been written on their exact nature and some confusion exists as to what constitutes an effect or where it originates. For example, Gerbner et al. (1994) note that direct experience plays a role in resonance such that those with more direct experience with crime will be more affected than those with less direct experience. However, they go on to note another type of resonance effect in which television has the greatest effect on people whose fictional counterparts are frequently victimized on television (e.g., minorities, women). Although both examples may exhibit a resonance effect, they clearly represent two

different situations and two different causal mechanisms. This example points to the importance of understanding both the antecedents and consequences of resonance.

Our final suggestion with respect to specifying whether a mainstreaming or resonance effect is expected in particular situations is that a clear theoretical formulation be offered to explain the pattern of outcomes. In this study, we have attempted to provide a first step in that direction by testing competing theories for a specific type of dependent variable (crime risk). For each theory, we have articulated an underlying psychological process that can account for the noted effects, although an admittedly impoverished one. However, it would be useful to not only predict when mainstreaming or resonance effects would be expected, but to explain why they occur under the situations in which they do.

CONCLUSION

We would like to conclude with a couple of observations regarding a priori predictions and conflicting findings. First, despite criticisms, the conceptualization of mainstreaming and resonance provides some bases for a priori predictions, albeit very general ones. As Gerbner et al. (1994) have clearly articulated, the processes differ in terms of their starting points. Mainstreaming can only occur when the beliefs of light viewers of the two groups that comprise the moderator variable differ (by definition, because a convergence of beliefs implies some prior difference). Conversely, resonance can only occur when the beliefs of light viewers of each group are similar.⁹ Based on the large number of cultivation studies, it seems reasonable that some a priori predictions could be constructed from these general observations. Moreover, the use of differences or similarities in group beliefs as starting points to assess the effect of subsequent television portrayals may lend itself well to the use of experiments and other laboratory studies.

Our second and concluding observation concerns the dismissal of cultivation theory in general, or mainstreaming and resonance in particular, because of (seemingly) conflicting or uninterpretable findings. We refer in particular to the example described previously, in which race was offered as a moderator in a mainstreaming context but could also fit the description of a moderator in a resonance context. Another example concerns the presence or absence of a cultivation effect as a function of only slight differences in the wording of risk judgments (e.g., fear vs. probability of victimization). Regardless of whether data conform to expectations or violate them, it is incumbent upon researchers to explain the effects. Presumably, data show relations for a reason and the task of researchers is to uncover these reasons. Yet some researchers may point to null, con-

flicting, or unexpected results as sufficient reason for the abandonment of a particular line of research.¹⁰ Far from being reason for such abandonment, we suggest that it is motivation for an extension of the research. The exploration of moderator variables is an example of one such extension. It is easy to dismiss conflicting findings as "probably due to chance." However, if the noted effects are significant, not only is this an example of poor statistical reasoning, it is simply bad science.

NOTES

1. The effects noted here refer to the direction of the effect, not significance. Gerbner et al. (1980) did not provide information on whether the viewing differences within subgroups were significantly different from each other.

2. At least one study, however, has found that extreme accessibility can make up for weak diagnosticity (Higgins & Brendl, 1995, Experiment 2), suggesting that at some high level of accessibility the applicability or relevance of the information may be disregarded.

3. This group included the second author, whose project constituted her senior honors thesis.

4. The quota-type sampling technique was used in order to generate a sample that provided more variation on key variables (e.g., direct and indirect experience) than might otherwise be afforded through random sampling or convenience sampling within a homogeneous population (e.g., students). Moreover, the primary purpose of this study was not to map the results onto a larger population, but to test (and thus potentially falsify) competing theories about how particular variables interact. For these purposes, convenience samples can be quite useful for theory testing in the absence of any compelling reason why the observed relations (interactions) for the convenience samples should differ from those of samples that are more representative of the general population (Calder, Phillips, & Tybout, 1981, 1982; Moog, 1983).

5. Although the effects of television viewing on crime risk estimates are presumed to come from the viewing of television violence in particular, it is Gerbner and colleagues' contention that a measure of the total amount of television a person views is the best predictor variable to use to assess the cultivation effect, due to the uniformity of the portrayals of violence across all program categories and to the habitual, nonselective manner in which people interact with television. Although other researchers dispute these assumptions (Hawkins & Pingree, 1981; Potter, 1993), a measure of total television viewing was used in this study because (a) it provides the best measure in making comparisons to previous work by Gerbner and colleagues, (b) the two-item measure has been validated in other studies (e.g., Rubin, 1981; Rubin et al., 1988; Rubin, Perse, & Powell, 1985) and is easy to administer in survey settings, and (c) the notion that program categories are better predictors than total television has not always been supported (cf. Morgan & Shanahan, 1996; Shrum, 2001; Shrum et al., 1998).

6. Stepwise multiple regression is necessary when the assessment of both main effects and interactions terms is desired because tests of main effects when interaction terms are present are not invariant to scale changes in the measures (Bobko, 1990; Cohen & Cohen, 1983; Gocka, 1974). Thus, main effects are assessed in step one of the regression and the interaction is assessed separately in the second step.

7. The distribution of direct experience did not allow for an even median split. About a third of the sample ($n = 58$) had a score of "0" on the direct experience variable and slightly less ($n = 56$) had a score of "1." Thus, the zero/not zero dichotomy was chosen. However, the results are virtually identical regardless of which dichotomy is used: The difference in risk estimates between heavy and light viewers is clearly greater in the high direct experience group.

Also note that the splitting of the continuous variables into dichotomous groups and use of ANOVA is primarily for ease of presentation and discussion. The pattern of results from the ANOVA, including all main effects and interactions, mirror those from the regression analyses.

8. It is not entirely clear why these results differ from Tyler's (1980) findings. It is possible that the differing findings could be the result of slightly different operationalizations of any or all of the variables. For example, as noted earlier, Tyler (1980) measured recall of examples from the media rather than media consumption. Another possibility is that the differences between the samples on critical independent variables (e.g., direct experience, television viewing) could have produced the conflicting findings.

9. This generalization must be qualified somewhat because it is unclear how a true cross-over interaction—one which has different starting points that converge (indicative of mainstreaming) but then cross over and begin to diverge (indicative of resonance)—would be interpreted. Gerbner et al. (1994) do not address this situation.

10. This reasoning has precedent in attitude research. Correlations between attitudes and behavior were so consistently small that some called for the abandonment of this line of research (Wicker, 1969). Yet subsequent research revealed that the attitude-behavior relation was moderated by several factors, including situational variables such as conditions under which the attitude is formed (Chaiken, 1987; Petty & Cacioppo, 1986), qualities of the attitude (Fazio, 1986), and trait variables such as self-monitoring (Snyder, 1974).

REFERENCES

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Bargh, J. A., & Chartrand, T. L. (1999). The unbearable automaticity of being. *American Psychologist*, *54*, 462–479.
- Bobko, P. (1990). Multivariate correlational analysis. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (2nd ed., pp. 637–686). Palo Alto, CA: Consulting Psychologists Press.
- Calder, B. J., Phillips, L. W., & Tybout, A. M. (1981). Designing research for application. *Journal of Consumer Research*, *8*, 197–207.
- Calder, B. J., Phillips, L. W., & Tybout, A. M. (1982). The concept of external validity. *Journal of Consumer Research*, *9*, 240–244.
- Chaiken, S. (1987). The heuristic model of persuasion. In M. P. Zanna, J. M. Olson, & C. P. Herman (Eds.), *Social influence: The Ontario symposium* (Vol. 3, pp. 143–177). Hillsdale, NJ: Erlbaum.
- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Cook, T. D., Kendzierski, D. A., & Thomas, S. V. (1983). The implicit assumptions of television research: An analysis of the 1982 NIMH report on television and behavior. *Public Opinion Quarterly*, *47*, 161–201.
- Doob, A., & Macdonald, G. (1979). Television viewing and fear of victimization: Is the relationship causal? *Journal of Personality and Social Psychology*, *37*, 170–179.
- Fazio, R. H. (1986). How do attitudes guide behavior? In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (pp. 204–243). New York: Guilford Press.
- Gerbner, G., & Gross, L. (1976). Living with television: The violence profile. *Journal of Communication*, *26*(Spring), 173–199.

- Gerbner, G., Gross, L., Jackson-Beeck, M., Jeffries-Fox, S., & Signorielli, N. (1978). Violence profile no. 9. *Journal of Communication*, 28(Summer), 176–207.
- Gerbner, G., Gross, L., Morgan, M., & Signorielli, N. (1980). The 'mainstreaming' of America: Violence profile no. 11. *Journal of Communication*, 30(Summer), 10–29.
- Gerbner, G., Gross, L., Morgan, M., & Signorielli, N. (1981a). A curious journey into the scary world of Paul Hirsch. *Communication Research*, 8, 39–72.
- Gerbner, G., Gross, L., Morgan, M., & Signorielli, N. (1981b). Final reply to Hirsch. *Communication Research*, 8, 259–280.
- Gerbner, G., Gross, L., Morgan, M., & Signorielli, N. (1982). Charting the mainstream: Television's contributions to political orientations. *Journal of Communication*, 32(Spring), 100–127.
- Gerbner, G., Gross, L., Morgan, M., & Signorielli, N. (1984). Political correlates of television viewing. *Public Opinion Quarterly*, 48, 283–300.
- Gerbner, G., Gross, L., Morgan, M., & Signorielli, N. (1994). Growing up with television: The cultivation perspective. In J. Bryant & D. Zillmann (Eds.), *Media effects: Advances in theory and research* (pp. 17–41). Hillsdale, NJ: Erlbaum.
- Gerbner, G., Gross, L., Signorielli, N., Morgan, M., & Jackson-Beeck, M. (1979). The demonstration of power: Violence profile no. 10. *Journal of Communication*, 29(Summer), 177–196.
- Gocka, E. (1974). Coding for correlation and regression analysis. *Educational and Psychological Measurement*, 34, 771–783.
- Gunter, B. (1994). The question of media violence. In J. Bryant & D. Zillmann (Eds.), *Media effects: Advances in theory and research* (pp. 163–211). Hillsdale, NJ: Erlbaum.
- Hawkins, R. P., & Pingree, S. (1980). Some processes in the cultivation effect. *Communication Research*, 7, 193–226.
- Hawkins, R. P., & Pingree, S. (1981). Uniform messages and habitual viewing: Unnecessary assumptions in social reality effects. *Human Communication Research*, 7, 291–301.
- Hawkins, R. P., & Pingree, S. (1982). Television's influence on constructions of social reality. In D. Pearl, L. Bouthilet, & J. Lazar (Eds.), *Television and behavior: Ten years of scientific progress and implications for the eighties* (Vol. 2, pp. 224–247). Washington, DC: U.S. Government Printing Office.
- Higgins, E. T. (1996). Knowledge activation: Accessibility, applicability, and salience. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 133–168). New York: Guilford Press.
- Higgins, E. T., & Brendl, C. M. (1995). Accessibility and applicability: Some "activation rules" influencing judgment. *Journal of Experimental Social Psychology*, 31, 218–243.
- Higgins, E. T., & King, G. (1981). Accessibility of social constructs: Information processing consequences of individual and contextual variability. In N. Cantor & J. F. Kihlstrom (Eds.), *Personality, cognition and social interaction* (pp. 69–121). Hillsdale, NJ: Erlbaum.
- Higgins, E. T., Rholes, W. S., & Jones, C. R. (1977). Category accessibility and impression formation. *Journal of Experimental Social Psychology*, 13, 141–154.
- Hirsch, P. M. (1980). The "scary world" of the nonviewer and other anomalies: A reanalysis of Gerbner et al.'s findings on cultivation analysis: Part I. *Communication Research*, 7, 403–456.
- Hirsch, P. M. (1981a). Distinguishing good speculation from bad theory: Rejoinder to Gerbner et al. *Communication Research*, 8, 73–95.
- Hirsch, P. M. (1981b). On not learning from one's own mistakes: A reanalysis of Gerbner et al.'s findings on cultivation analysis. Part II. *Communication Research*, 8, 3–37.
- Hughes, M. (1980). The fruits of cultivation analysis: A reexamination of some effects of television watching. *Public Opinion Quarterly*, 44, 287–302.
- Johnson, M. K., Hashtroudi, S., & Lindsay, D. S. (1993). Source monitoring. *Psychological Bulletin*, 114, 3–38.

- Kahneman, D., & Tversky, A. (1972). Subjective probability: A judgment of representativeness. *Cognitive Psychology*, 3, 430–454.
- Kahneman, D., & Tversky, A. (1982). The simulation heuristic. In D. Kahneman, P. Slovic, & A. Tversky (Eds.), *Judgment under uncertainty: Heuristics and biases* (pp. 201–208). New York: Cambridge University Press.
- Lichter, R. S., Lichter, L. S., & Rothman, S. (1994). *Prime time: How TV portrays American culture*. Washington, DC: Regnery Publishing.
- McGuire, W. J. (1986). The myth of massive media impact: Savagings and salvagings. In G. Comstock (Ed.), *Public communication and behavior* (Vol. 1, pp. 173–257). New York: Academic Press.
- Moog, D. G. (1983). In defense of external invalidity. *American Psychologist*, 38, 379–387.
- Morgan, M. (1986). Television and the erosion of regional diversity. *Journal of Broadcasting & Electronic Media*, 30, 123–139.
- Morgan, M., & Shanahan, J. (1996). Two decades of cultivation research: An appraisal and meta-analysis. In B. R. Bureson (Ed.), *Communication yearbook 20* (pp. 1–45). Newbury Park, CA: Sage.
- Ogles, R. M. (1987). Cultivation analysis: Theory, methodology and current research on television-influenced constructions of social reality. *Mass Communication Review*, 14, 43–53.
- Petty, R. E., & Cacioppo, J. T. (1986). *Communication and persuasion: Central and peripheral routes to attitude change*. New York: Springer-Verlag.
- Potter, W. J. (1993). Cultivation theory and research: A conceptual critique. *Human Communication Research*, 19, 564–601.
- Price, V., & Roberts, D. (1987). Public opinion processes. In C. R. Berger & S. H. Chaffee (Eds.), *Handbook of communication science* (pp. 781–816). Newbury Park, CA: Sage.
- Rubin, A. M. (1981). An examination of television viewing motives. *Communication Research*, 8, 141–165.
- Rubin, A. M., Perse, E. M., & Powell, R. A. (1985). Loneliness, parasocial interaction, and local television news viewing. *Human Communication Research*, 12, 155–180.
- Rubin, A. M., Perse, E. M., & Taylor, D. S. (1988). A methodological examination of cultivation. *Communication Research*, 15, 107–134.
- Shapiro, M. A. (1991). Memory and decision processes in the construction of social reality. *Communication Research*, 18, 3–24.
- Shrum, L. J. (1995). Assessing the social influence of television: A social cognition perspective on cultivation effects. *Communication Research*, 22, 402–429.
- Shrum, L. J. (1996). Psychological processes underlying cultivation effects: Further tests of construct accessibility. *Human Communication Research*, 22, 482–509.
- Shrum, L. J. (1999). Television and persuasion: Effects of the programs between the ads. *Psychology & Marketing*, 16, 119–140.
- Shrum, L. J. (2001). Processing strategy moderates the cultivation effect. *Human Communication Research*, 27, 94–120.
- Shrum, L. J., & O'Guinn, T. C. (1993). Processes and effects in the construction of social reality: Construct accessibility as an explanatory variable. *Communication Research*, 20, 436–471.
- Shrum, L. J., Wyer, R. S., & O'Guinn, T. C. (1998). The effects of television consumption on social perceptions: The use of priming procedures to investigate psychological processes. *Journal of Consumer Research*, 24, 447–458.
- Snyder, M. (1974). Self-monitoring of expressive behavior. *Journal of Personality and Social Psychology*, 30, 526–537.
- Sparks, G. G., & Ogles, R. M. (1990). The difference between fear of victimization and the probability of being victimized: Implications for cultivation. *Journal of Broadcasting & Electronic Media*, 34, 351–358.

- Srull, T. K., & Wyer, R. S. (1979). The role of category accessibility in the interpretation of information about persons: Some determinants and implications. *Journal of Personality and Social Psychology, 37*, 1660-1672.
- Srull, T. K., & Wyer, R. S. (1980). Category accessibility and social perception: Some implications for the study of person memory and interpersonal judgment. *Journal of Personality and Social Psychology, 38*, 841-856.
- Tversky, A., & Kahneman, D. (1973). Availability: A heuristic for judging frequency and probability. *Cognitive Psychology, 5*, 207-232.
- Tyler, T. R. (1980). Impact of directly and indirectly experienced events: The origin of crime related judgments and behaviors. *Journal of Personality and Social Psychology, 39*, 13-28.
- Tyler, T. R. (1984). Assessing the risk of crime victimization: The integration of personal victimization experience and socially transmitted information. *Journal of Social Issues, 40*, 27-38.
- Tyler, T. R., & Cook, F. L. (1984). The mass media and judgments of risk: Distinguishing impact on personal and societal level judgments. *Journal of Personality and Social Psychology, 47*, 693-708.
- Wicker, A. W. (1969). Attitude versus actions: The relationship of verbal and overt behavioral responses to attitude objects. *Journal of Social Issues, 25*(4), 41-78.
- Wilson, B., Kunkel, D., Linz, D., Potter, J., Donnerstein, E., Smith, S., Blumenthal, E., & Gray, T. (1996). Violence in television programming overall: University of California, Santa Barbara study. In *National Television Violence Study, Volume 1*. Newbury Park, CA: Sage.
- Wyer, R. S., & Srull, T. K. (1989). *Memory and cognition in its social context*. Hillsdale, NJ: Erlbaum.