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ABSTRACT

Cultivation theory states that television engenders negative emotions in heavy viewers. Noting that cultivation methodology contains an apparent response bias, a study examined relationships between television exposure and positive restatements of cultivation concepts and tested a more instrumental media uses and effects model. Cultivation was thought to be linked to greater viewing selection, intention, attention, and perceived realism. Subjects, 392 adults (ages 17 to 88, 50.5% male, 49.5% female) completed a questionnaire. Correlation analysis showed television exposure to be unrelated to the positively worded cultivation measures; program selectivity was related to all cultivation measures except interpersonal connectedness. Regression analyses added that individual demographic differences and program selectivity accounted for most of the variance in cultivation perceptions. Findings suggested that methodology may explain cultivation effects that have been attributed to television exposure levels, and that, by using positive concepts, the notion that TV can have only negative influences on personal perceptions is underscored as a fallacy. Findings also suggested that television may not be the dominant influence on many interpersonal perceptions. The instrumental media uses and effects model tested with some success. (Five tables of data and notes are appended.) (Author/NKA)

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A METHODOLOGICAL INVESTIGATION OF CULTIVATION

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Abstract

Two issues in cultivation research were considered. First, because cultivation methodology contains an apparent response bias, relationships were examined between television exposure and positive restatements of cultivation concepts: faith in others, life satisfaction, political efficacy, interpersonal connectedness, and safety. Second, a more instrumental media uses and effects model was tested. Cultivation was thought to be linked to greater viewing selection, intention, attention, and perceived realism. Questionnaires were administered to 392 adults. Correlation analysis showed television exposure to be unrelated to the positively worded cultivation measures; program selectivity was related to all cultivation measures except interpersonal connectedness. Regression analyses added that individual demographic differences and program selectivity accounted for most of the variance in cultivation perceptions. Methodological and conceptual implications were discussed.

A METHODOLOGICAL INVESTIGATION OF CULTIVATION

Cultivation research focuses on television as a socializing agent. According to the perspective, television is a storyteller presenting "a continuous stream" of reality. It is the principal architect of symbolic images and contributes to the formation of beliefs about the "real world" (Gerbner & Gross, 1976; Gerbner, Gross, Morgan, & Signorielli, 1986). For over a decade, cultivation researchers have provided empirical evidence speaking to television's power to cultivate feelings such as fear, alienation, and interpersonal mistrust in heavy viewers (e.g., Gerbner et al., 1986). Critics, though, have questioned cultivation assumptions, methodology, and research findings (e.g., Hirsch, 1980; Hughes, 1980).

The present study examined two issues surrounding cultivation research. First, because cultivation methodology contains an apparent response bias (e.g., Hawkins & Pingree, 1981), we tested the relationship between television exposure and positive, rather than negative, societal perceptions. Specifically, we considered associations between television exposure and: faith in others, life satisfaction, political efficacy, interpersonal connectedness, and safety. Second, we extended previous research that found possible cultivation effects to be related more to a goal-directed use of television than to ritualistic exposure (Perse, 1986). Contrary to cultivation assumptions, we expected viewing selection, intention, and attention, as well as individual differences, to contribute to any potential effects.

Cultivation Research

Cultivation proponents argue that the more time people spend living in the world of television, the more likely they are to form perceptions of social reality that are similar to television depictions. These depictions differ from real-world data (Gerbner & Gross, 1976). Heavy and light television viewers, then, perceive the world differently.

Some cultivation studies have focused on findings of alienation, fear, interpersonal mistrust, and anomie among heavy viewers (Gerbner, Gross, Jackson-Beeck, Jeffries-Fox, & Signorielli, 1978; Gerbner, Gross, Signorielli, Morgan, & Jackson-Beeck, 1979). Researchers also have reported other effects. For example, heavy viewers were more likely than light viewers: to have lower self-esteem (Tan & Tan, 1979); to have more positive attitudes toward the medical profession and to perceive a higher incidence of racial problems (Volgy & Schwarz, 1980); to see the elderly as feeble and ineffectual (Gerbner, Gross, Signorielli, & Morgan, 1980b); to adopt stereotypical gender roles (Morgan, 1982); to have higher levels of anxiety (Bryant, Carveth, & Brown, 1981); to describe their lives as less satisfying (Morgan, 1984); and to abandon geographic regional variations (Morgan, 1986). Cultivation effects also have been observed in other cultures (Hawkins & Pingree, 1981) and in experimental settings (Bryant et al., 1981; Ogles & Hoffner, 1987; Tan, 1979).

Criticisms of Cultivation

Many criticisms have been aimed at cultivation research. Beyond the initial concern about the validity of cultivation message analysis (Blank,

1977), criticism has focused on three issues: (a) the relationship between television exposure and cultivation is spurious and explained by other intervening variables, (b) cultivation methodology is suspect and findings can be explained by response bias, and (c) the conceptual underpinnings of the perspective are inaccurate.

Intervening variables. Original and secondary analyses of cultivation data have observed that statistical controls for sociodemographic variables reduce or erase cultivation effects (Carveth & Alexander, 1985; Hawkins & Pingree, 1982; Hirsch, 1980; Hughes, 1980; Perse, 1986; Potter, 1986). Doob and Macdonald (1979), for example, showed that fear of crime was explained better by the crime rate of respondents' neighborhoods than by television exposure. Hirsch (1980) found that the simultaneous control of several sociodemographic variables not only reduced the magnitude of the cultivation effect, but changed the direction of the relationship so that nonviewers were the most cultivated. Demonstrations of the influence of sociodemographics on cultivation have led cultivation adherents to formulate concepts of mainstreaming and resonance to explain the influences of those variables (Gerbner, Gross, Morgan, & Signorielli, 1980a).

Others have suggested that personality traits affect cultivation. Locus of control and authoritarianism, for example, were found to be more strongly related than television viewing to beliefs about a mean world, anomie, and fear of victimization (Gunter & Wober, 1983; Wober & Gunter, 1982). Wober (1986) concluded that it was not "television viewing that constructs a fearful view of the world as much as an underlying personality disposition that produces this feeling" (p. 224).

Methodological concerns. Several writers have documented methodological difficulties of cultivation research. Findings suggest that response bias may foster cultivation effects because certain types of questionnaire items are more likely to yield cultivation effects than others (e.g., Hirsch, 1980; Hughes, 1980). Wober (1978) found that different versions of cultivation questionnaire items yielded different response ranges. Asking a British sample about interpersonal trust was not the same as asking about interpersonal mistrust. Hawkins and Pingree (1981; also see Pingree & Hawkins, 1981) found evidence of response bias in a sample of Australian children. For second graders, responses to negatively and positively worded cultivation questions correlated positively. Moreover, only responses to negatively worded items were related to television exposure. Earlier research noted that Srole's (1956) anomie scale, used in several cultivation studies (e.g., Gerbner et al., 1978; Gerbner et al., 1980a; Morgan, 1986), was highly susceptible to agreement response set (Lenski & Leggett, 1960).

In addition, cultivation effects may reflect the tendency of some people to overestimate various quantities. Those who overestimate their chances of victimization also may overestimate their television exposure (Wober & Gunter, 1986). Potter (1986) and Perse (1986) noted that both heavy and light viewers overestimated victimization rates, causes of death, and population occurrence of occupational groups.

Our first goal in this study was to consider the notion of response bias in cultivation results. Previous research concluded that cultivation was shown in positive associations between television exposure and negative

societal and interpersonal perceptions. Therefore, we reasoned that, if cultivation effects were not methodological artifacts, then television exposure would be related negatively to more positive societal and interpersonal perceptions. Therefore, assuming cultivation effects were not restricted to negatively worded societal perceptions, out first hypothesis was:

> H1: Level of television exposure will be related negatively to perceptions of (a) faith in others, (b) life satisfaction, (c) political efficacy, (d) interpersonal connectedness, and (e) safety.

Conceptual criticisms. Critics also have questioned basic cultivation assumptions. One assumption is that television is essentially uniform in its presentation of symbolic messages about society (Gerbner et al., 1979). It matters little what content is viewed; all content can cultivate. Hawkins and Pingree (1981), though, found that "cultivation relationships are attributable to some television content and not to others, and not to total television viewing per se" (p. 297).

Other researchers have observed that crime-oriented programming, especially programs that depict an "unjust" resolution to the action, are most likely to be associated with cultivation effects (Bryant et al., 1981; Tamborini, Zillmann, & Bryant, 1984; Weaver & Wakshlag, 1986). Moreover, exposure to certain types of programs are associated with content-specific cultivation effects. Soap opera exposure has been linked to beliefs about the similarities between soap opera and real worlds (Buerkel-Rothfuss with Mayes, 1981; Carveth & Alexander, 1985; Perse, 1986). Program selection, then, appears to be an antecedent to cultivation effects.

A second cultivation assumption is that television drama is realistic and appears to convey facts instead of fiction (Gerbner et al., 1979). Cultivation research, though, has been criticized for not demonstrating that viewers accept television's reality (Slater & Elliott, 1982). Investigators have shown that perceived realism is an important mediator of cultivation (Perse, 1986; Potter, 1986; Slater & Elliott, 1982). When viewers perceive television to represent reality accurately, they are more likely to be cultivated. Attitudes about television, then, have been linked to cultivation.

A third assumption is that cultivation is the result of unselective, ritualistic, and habitual television viewing (Gerbner & Gross, 1976). Several studies cast doubt on this premise. As mentioned earlier, program selectivity has been linked more strongly than heavy television viewing to cultivation effects. Moreover, Perse (1986) found that soap opera cultivation effects were part of a more instrumental use of daytime serials. In contrast to ritualistic use, an instrumental orientation is more goal-directed, selective use of specific program content, and not indiscriminant use of the television medium (Rubin, 1986; Windahl, 1981).

Further, there is growing evidence that cultivation evolves from active interpretation of televised messages. Weaver and Wakshlag (1986), for example, concluded that people relate television messages to their own personal experiences when using television as a basis for social reality

beliefs. Hawkins and Pingree (1982) suggested that cultivation is a learning process, and as such, depends on attention to and comprehension of programming, and the ability to draw inferences from television portrayals.

The evidence of cultivation as a process growing out of program selectivity, television attitudes, and mental activity supports recent reconceptualization of the media effects process (Levy & Windahl, 1984; Rubin & Perse, 1987). According to these writers, audience activity is a catalyst, rather than a deterrent to the effects process. Rubin and Perse (1987) proposed a model of an instrumental uses and effects process in which media effects flow from instrumental media use that includes: (a) attitudes about television and its content, (b) intentional planning to watch a program, (c) selective exposure to certain content, (d) and attention to the content when viewing. The second goal of this study, then, was to assess the contributions of elements of this model to explain cultivation effects. Assuming cultivation effects might stem from more instrumental television use, our second hypothesis was:

> H2: Viewing intention, viewing attention, and perceived realism will be related positively to perceptions of (a) faith in others, (b) life satisfaction, (c) political efficacy, (d) interpersonal connectedness, and (e) safety.

We anticipated additional evidence of linkages among instrumental viewing cultivation effects. First, we expected more significant correlations among certain program preferences and cultivation variables than between cultivation and television exposure. Second, we expected cultivation variables to be predicted better from individual differences and viewing selection, intention, attention, and perceived realism than from level of television exposure. In short, we expected cultivation to be a more instrumental than ritualistic effect, linked to individual differences, viewing attitudes, intention, selection, and attention.

Method

Forty trained research assistants drawn from two upper-division undergraduate communication and telecommunication research classes were given age and gender quotas for questionnaire administration. The instrument was self-administered to a broad demographic sample in late November and early December 1986; the assistants returned 392 completed questionnaires. Respondents ranged in age from 17 to 88 (M = 41.61, SD = 18.46); 50.5% were males and 49.5% were females.

Television Variables

Television exposure. The level of television exposure was measured by averaging responses to two questions asking respondents to indicate: (a) how many hours of television they watched yesterday (a weekday), and (b) how many of hours of television they usually watched each weekday. This procedure has been used reliably in past research (e.g., Rubin, 1981, 1983; Rubin, Perse, & Powell, 1985). Weekday television exposure ranged from 0.0 to 11.5 hours. Respondents watched an average 3.38 hours of television each weekday (SD = 2.20). The index had a .76 Cronbach alpha.

Program selection. Following a procedure used in earlier research (e.g., A. Rubin & R. Rubin, 1982; R. Rubin & A. Rubin, 1982), respondents were asked to indicate how often they watched (1 = never, 5 = usually) several types of television programs. Three program categories used in a recent cultivation study (Signorielli, 1986) were examined: Action/Adventure Programs (M = 2.73, SD = 1.12); Evening Dramas (M = 2.66, SD = 1.28); and Situation Comedies (M = 3.60, SD = 1.18). Two other relevant program types also were considered: Daytime Soap Operas (M = 2.24, SD = 1.45) and News Programs (M = 3.55, SD = 1.22). For each program category, respondents were presented with examples of recognizable and representative shows that provided a range of network and daily presentation (e.g., Situation Comedies such as the Cosby Show, Golden Girls, Newhart, and Who's the Boss; Action & Adventure Programs such as the A-Team, MacGyver, Magnum P.I., or Miami Vice).

Viewing behavior and attitude. Twenty 5-point Likert-type statements asked for respondents' degree of concordance (1 = strongly disagree, 5 = strongly agree). For each of four viewing behavior or attitude variables, five statements were adapted from prior research and intended to represent the variable: intention or planning to watch television (Levy & Windahl, 1984; Rubin & Perse, 1987); attention to a program when watching (Cegala, 1981); television emersion (Smith, 1986); and perceived realism of television content (Rubin, 1981, 1983). Any negatively worded items were reversed for data coding.

Responses to these 20 statements were subjected to principal components analysis with oblique rotation. The factor solution explained 62.4% of the total variance. Applying retention rules of eigenvalues above 1.0 and at least two primary loadings of .50 or better without any secondary loadings at or above .30, four factors were retained initially. The fourth factor, emersion (alpha = .49), was discarded because of low homogeneity. To form viewing behavior and attitude indexes, the primary item scores were averaged on the first three factors: Factor 1, Viewing Intention (M = 2.64, SD = .86, eigenvalue = 5.79, alpha = .87); Factor 2, Viewing Attention (M = 3.19, SD = .65, eigenvalue = 2.72, alpha = .77); and Factor 3, Perceived Realism (M = 2.14, SD = .69, eigenvalue = 1.72, alpha = .81).[1] The items and primary factor loadings are summarized in Table 1.

Cultivation Measures

The intent was to examine mostly positive, rather than negative, indicators of cultivation. Therefore, several measures were created to contrast typical cultivation indexes. Two indexes were created to contrast "alienation": interpersonal connectedness on the personal level (e.g., Campbell, 1973; A. Rubin & R. Rubin, 1982; R. Rubin & A. Rubin, 1982; Wrightsman, 1964) and political efficacy on the societal level (e.g., Campbell, Converse, Miller, & Stokes, 1964; Gerbner et al., 1978; Rubin, 1978; Srole, 1956). A life satisfaction index (A. Rubin & R. Rubin, 1982; R. Rubin & A. Rubin, 1982) was used lieu of cultivation's sense of a "lousy world." To contrast "mistrust," an interpersonal trust index was formulated (e.g., Christie, 1973; Rotter, 1967; Wrightsman, 1964). In contrast to cultivation's "mean world" concept, an altruism index was created (e.g., Campbell, 1973; Gerbner et al., 1977; Rosenberg, 1957; Wrightsman, 1964). A locus of control index was adapted from past studies (e.g., Rotter, 1966; Wober & Gunter, 1982) to contrast cultivation's sense of external control of one's life. A safety

index was developed to contrast fearfulness or cultivation's notion of "chances of involvement in violence" (Gerbner et al., 1979) and "perceptions of danger" (Gerbner et al., 1980a).

Thirty five Likert-type statements (five for each of the seven indexes) were presented to respondents who indicated their level of agreement (1 = strongly disagree, 5 = strongly agree) with each statement. In most cases, statements were written in a positive vein. However, to prevent response bias and to maintain the integrity of original instruments, several negatively worded statements were included; these were recoded for data analysis. Responses to the 35 statements were subjected to principal components analysis with oblique rotation. The factor solution explained 62.5% of the total variance.

Using retention rules specified earlier, five factors were retained with adequate Cronbach reliability coefficients: Factor 1, Faith in Others (trust/altruism, M = 3.23, SD = .62, eigenvalue = 8.50, alpha = .91); Factor 2, Life Satisfaction (M = 3.40, SD = .63, eigenvalue = 2.95, alpha = .76);[2] Factor 3, Political Efficacy (M = 2.90, SD = .67, eigenvalue = 2.20, alpha = .80); Factor 4, Interpersonal Connectedness (M = 3.84, SD = .60, eigenvalue = 2.10, alpha = .77); and Factor 5, Safety (M = 3.36, SD = .71, eigenvalue = 1.56, alpha = .64). The primary item scores were averaged to construct the cultivation indexes.[3] The items and primary factor loadings are summarized in Table 2.

Demographic Variables

Consistent with the need to consider individual differences and to provide demographic controls for cultivation analysis, five demographic variables were measured. In addition to age (17 to 88 years) and gender (0 = male, 1 = female), respondents indicated their highest level of completed, formal education (1 = grade school, 6 = graduate school), the occupation of their family's principal wage earner as a measure of socioeconomic status, and the zip code of their home residence. The mean, median, and modal education levels all approximated 4.00 ("Some College").

Occupation was coded to reflect socioeconomic status (0 = lowest status, 100 = highest status) using the Duncan scale (Reiss with Duncan, Hatt, & North, 1961). Two independent coders achieved 93.7% agreement on a 20% sample of the coded occupations. The mean Duncan index was 46.80.

Zip code was coded to reflect population density as one factor affecting the volume and type of crime. Each respondent's home community was determined from his or her zip code, according to the post office listed in the national zip code directory (U.S. Postal Service, 1986, pp. 2186-2232). The U.S. Department of Justice (1986) crime reports and the U.S. Bureau of the Census (1980) population data were used to assign one of seven population density classifications (1 = under 2,500, 7 = over 250,000) to each zip code. The mean, median, and modal population density classifications all approximated 4.00 ("25,000-49,999").

Statistical Analysis

After the factor and reliability analyses to construct the study's indexes, three procedures were executed. First, Pearson and partial correlations were computed among the television exposure, program selection, and demographic variables. Second, similar to Gerbner et al. (1980a), Pearson and partial correlations were computed between the five cultivation variables and the demographic, television exposure, program selection, and viewing behavior and attitude variables. Third, each of the five cultivation variables was regressed on the demographic, television exposure, program selection, and viewing attitude and behavior variables. Hierarchical regression analysis was used because the variables were entered according to the conceptual scheme: first, demographic control variables; second, cultivation's level of television exposure; third, the instrumental orientation's concepts of program selection; and fourth, viewing intention, attention, and perceived realism.[4]

Results

Television Exposure and Program Selection Correlates

Prior to considering the two initial hypotheses of the investigation, the relationships among television exposure, program selection, and demographic variables are summarized in Table 3. These data include television exposure and program selection Pearson and partial (controlling for demographics) correlations.

Two patterns are apparent from these data. The first pattern is the relationship among television exposure and program selection. Level of exposure was related positively and significantly to all program types except news. The most sizable partial correlation, though, was .33. In other words, television exposure accounted for less than 11% of the program selection variance. Preferences for some program types were related positively: evening drama and action/adventure, daytime serial, and situation comedy; and daytime serial and situation comedy. The largest partial correlation, though, was .36. Perhaps even more interesting, several program preferences were unrelated: action/adventure and daytime serial, news, and situation comedy; and news and both evening drama and situation comedy. News and daytime serial were significantly, but negatively, related. Clearly, all program viewing is not the same.

The second pattern is the significant relationship between demographics and several viewing variables. Age was related positively to television exposure, news, and evening drama preferences, and negatively to daytime serial selection. Gender was related positively (female) to daytime serial, evening drama, and situation comedy selection, and negatively to action/adventure and news preferences. Education was related negatively to television exposure and daytime serial selection. Socioeconomic status was related negatively to television exposure and action/adventure selection. Only population density was not related significantly to television exposure or program selection. Overall, though, the correlations indicated the need to account for demographics in subsequent analyses.

Television Exposure and Cultivation

Assuming support for the cultivation perspective, the first hypothesis predicted television exposure level to be related negatively to perceptions of faith in others, life satisfaction, political efficacy, interpersonal connectedness, and safety. In addition to summarizing demographic correlates of the cultivation measures, Table 4 includes the Pearson and partial (controlling for demographics) television exposure and program selection correlates of the five cultivation measures.

The data indicate no support for this hypothesis. Although a small significant zero-order correlation existed between level of exposure and life satisfaction, after controls for demographic variables, no significant relationships were found between television exposure and any of the five cultivation measures. Two of the insignificant correlations, in fact, were in a positive direction.

Instrumental Viewing and Cultivation

As the data in Table 4 indicate, there were significant negative correlations among the cultivation measures and program selection: faith in others with daytime serial and evening drama; life satisfaction with action/adventure and daytime serial; political efficacy with evening drama; and safety with action/adventure. Political efficacy and news selection correlated positively. In other words, although cultivation relationships were not apparent with level of television exposure, there were modest relationships between cultivation measures and selected programs.

In addition to program selection, components of more instrumental television viewing include viewing intention, viewing attention, and perceived realism. The second hypothesis predicted positive relationships between these three variables and perceptions of faith in others, life satisfaction, political efficacy, interpersonal connectedness, and safety. Among the data in Table 4 are these viewing behavior and attitude correlates of the five cultivation measures.

The hypothesis received limited support. There were only a few significant, but modest, partial correlates. Viewing intention correlated positively with faith in others. Perceived realism correlated positively with both faith in others and political efficacy. Our measure of viewing attention failed to correlate significantly with any of the cultivation measures. Perceptions of life satisfaction, interpersonal connectedness, and safety did not correlate significantly with any of the three viewing behavior and attitude measures.

Predicting Cultivation Measures

The final research inquiry considered whether possible cultivation effects could be predicted from the television and demographic measures. Specifically, we expected that individual differences and the more instrumental viewing variables of program selection, intention, attention, and perceived realism would be better predictors of cultivation effects than would television exposure. Based on prior conceptualization, we entered the variables in conceptual blocks. Because demographics often are treated as

control variables in cultivation research, we entered them into the equation before television exposure. Specific program choices were entered on the third step after television exposure. Lastly, the remaining viewing intention, attention, and perceived realism variables were entered.

The results of the hierarchical regression analyses are summarized in Table 5. Four of the equations were significant: faith in others, life satisfaction, political efficacy, and safety. The interpersonal connectedness regression was not significant. Only when predicting safety was television exposure a significant component of the regression equation. And, in that instance, exposure was a positive predictor of safety. For the four significant equations, demographics and the more instrumental viewing variables—with the exception of attention—were sequential and differential predictors of cultivation effects.

Faith in others. On Step 1 the five demographic variables explained 10.6% of the faith in others variance (F change = 8.21, $p < .001$). Age and socioeconomic status were significant positive predictors. On Step 2 television exposure explained little additional variance (F change = .01, $p = .91$). The five programs accounted for 4.2% further faith in others variance (F change = 3.38, $p < .01$) on the third step. The daytime serial was a significant negative predictor. On Step 4 the viewing behavior and attitude variables explained 4.7% more variance (F change = 6.58, $p < .001$). Intention and perceived realism were significant positive predictors. Gender also became a significant predictor.

In the final analysis, then, significant predictors of faith in others were: age, socioeconomic status, viewing intention, perceived realism, and gender (women), in a positive direction; and soap opera program selection, in a negative direction. The measures explained 19.5% of the faith in others variance.

Life satisfaction. The demographics explained 12.0% of the life satisfaction variance on Step 1 (F change = 9.42, $p < .001$). Education, age, and socioeconomic status were significant positive predictors. On the second step television exposure explained less than 1% additional variance (F change = 1.66, $p = .20$). The five programs accounted for only 2.4% more life satisfaction variance (F change = 1.95, $p = .09$) on the third step. Action/adventure was a significant negative predictor. On Step 4 the viewing behavior and attitude variables explained less than 1% further variance (F change = 1.13, $p = .34$).

Significant final predictors of life satisfaction, then, were: age, education, and socioeconomic status, in a positive direction; and action/adventure program selection, in a negative direction. The measures explained 15.7% of the life satisfaction variance.

Political efficacy. On Step 1 the demographic variables explained 3.7% of the political efficacy variance (F change = 2.67, $p < .03$). Socioeconomic status was a significant positive predictor. Television exposure explained less than 1% additional variance on the second step (F change = 1.13, $p = .29$). Program selection accounted for 3.3% further political efficacy variance (F change = 2.41, $p < .04$) on step 3. The evening drama was a significant negative predictor. On Step 4 the viewing behaviors and attitudes

explained 6.5% more variance (F change = 8.43, p < .001). Perceived realism was a significant positive predictor.

At the conclusion of the analysis, then, significant predictors of political efficacy were: perceived realism and socioeconomic status, in a positive direction; and evening drama program selection, in a negative direction. The measures explained 13.7% of the political efficacy variance.

Interpersonal connectedness. The demographic variables explained 4.2% of the interpersonal connectedness variance on step one (F change = 3.07, p < .01). Socioeconomic status and gender were significant positive predictors. Television exposure explained less than 1% further variance on the second step (F change = 1.41, p = .24). On Step 3 program selection also accounted for under 1% additional interpersonal connectedness variance (F change = .56, p = .73). Gender was no longer significant. On the fourth step the viewing behaviors and attitudes explained little additional variance (F change = .13, p < .94).

In sum, although socioeconomic status remained a significant positive predictor of interpersonal connectedness, the regression equation was not significant. Only 5.5% of the interpersonal connectedness variance was explained by the measures.

Safety. On the first step the demographics explained 10.2% of the safety variance (F change = 7.84, p < .001). Education and socioeconomic status were significant positive predictors; population density was a significant negative predictor. Television exposure explained less than 1% additional variance on step 2 (F change = 1.10, p = .30). On Step 3 program selection accounted for 3.2% more safety variance (F change = 2.55, p < .03). Action/adventure program selection was a significant negative predictor. Television exposure emerged as a significant positive predictor at this stage, and socioeconomic status was no longer significant. On the last step the viewing behavior and attitude variables explained only 1.4% additional variance (F change = 1.87, p = .13). Perceived realism was a significant negative predictor.

In the final analysis, then, significant predictors of safety were: age and television exposure, in a positive direction; and population density, action/adventure program selection, and perceived television realism, in a negative direction. The measures explained 15.1% of the safety variance.

Discussion

The study's results suggest several conclusions. First, methodology may explain cultivation effects that have been attributed to television exposure levels. Similar to some previous studies, positively phrased measures were unrelated to generalized television exposure (Hawkins & Pingree, 1981; Pingree & Hawkins, 1981; Wober, 1978). Cultivation research findings, then, may be contaminated by acquiescence response bias where responses are influenced by questionnaire form and question content (Schuman & Presser, 1981). Future cultivation research should attempt to minimize such response bias.

Second, by using positive concepts, the notion that television can have only negative influences on personal perceptions is underscored as a fallacy. Cultivation proponents have argued convincingly that television's portrayal of

a mean and violent world should lead heavy viewers to be more alienated and distrustful (e.g., Gerbner et al., 1978). The means and correlations of the cultivation measures in this study indicate that respondents typically felt safe, trusted others, and felt interpersonally connected, regardless of television exposure levels. Other researchers have observed that television content and viewing context provide opportunities for people to form and to enhance interpersonal relationships (e.g., Lull, 1980; Rubin, 1985). And, parasocial relationships may foster heightened interpersonal trust and connectedness (Horton & Wohl, 1956).

Third, television may not be the dominant influence on many interpersonal perceptions. Other antecedent and intervening variables accounted for more of the variance in the cultivation indices than did exposure levels. For example, age, gender, socioeconomic status, viewing intention, and perceived realism were better predictors of faith in others than was television exposure. As Weaver and Wakshlag (1986) summarized, television's influence on social reality is overshadowed by direct personal and interpersonal experience. It is not surprising, then, that viewing variables could not significantly explain interpersonal connectedness in this study.

We also attempted, with some success, to test an instrumental media uses and effects model (Rubin & Perse, 1987). With average television viewing hovering around 4 hours each day, the typical cultivation definition of heavy viewing is called into question. Differences in personal perceptions would seem to be more a function of individual differences and instrumental viewing variables (i.e., program selection, television attitudes, and viewer activity) than television exposure levels. Despite the use of alternative cultivation measures, the results reinforced earlier findings that perceptions of social reality are linked differentially to selective exposure to television program genres (Hawkins & Pingree, 1981; Weaver & Wakshlag, 1986).

Contrary to cultivation assumptions, ritualistic, heavy television exposure was not linked to cultivation effects. Correlation analyses showed that cultivation effects were content specific (Hawkins & Pingree, 1981). Interpersonal beliefs about altruism and trust were linked negatively to daytime and evening dramas, which focus on interpersonal problems and relationships. Feelings of political efficacy were associated positively with watching news, which provides political information, but negatively with evening dramas, which often center on the manipulation and control of persons and events by powerful characters. And, safety concerns were linked negatively to action/adventure, a genre that highlights crime. The importance of program selectivity was shown especially in the regression analyses. Concerns about personal safety were predicted from less television exposure, but more action/adventure program viewing.

Signorielli (1986) argued that primetime programs are similar in content. Her analyses, though, showed that genre is the factor that most consistently differentiates programs. Not only does the content of program genres differ objectively, but audience selectivity is suggested by the modest correlations among program types and between television and program exposure. Television exposure explained only a small portion of the program choice variance. And, cultivation perceptions were linked to selectivity in program choice. Future research should consider the influence of program selectivity on cultivation

perceptions, especially in light of the increasing availability of communication alternatives.

In addition, the results provide some limited evidence that people actively evaluate television content before integrating it into social perceptions. Consistent with previous research (Slater & Elliott, 1982), perceptions of realism, in particular, were important antecedents to personal safety concerns. Faith in others and political efficacy, though, were linked to less perceived realism. This differential impact of realism on cultivation perceptions is similar to Potter's (1986) findings. Although it is possible that less faith in others and political efficacy may signal a generalized distrust of institutions (including media) that is reflected in beliefs about the veracity of television content, future research might examine perceived realism as a multidimensional perception mediating television effects (Potter, 1986).

There were, of course, limitations to our study. First, the viewing attention scale was unrelated to the cultivation measures. This might be the result of an inadequate measure that reflected perceptions of focus on the screen and program, but not the actual processing of program content. In addition, other variables such as program selection or perceived realism may override the felt attention paid to the content in structuring perceptions. A preference for action/adventure shows and a belief that the story is primarily fictitious may guide perceptions of mistrust or faith in others regardless of how closely a viewer follows the action.

Second, although links among individual demographics, selective exposure, perceived realism, and social perceptions were uncovered, the direction of the associations was not established. Although cultivation writers have suggested that television exposure affects perceptions of social reality (e.g., Gerbner & Gross, 1976), other researchers have argued that beliefs about society influence exposure levels and program selection (e.g., Zillmann & Wakshlag, 1985). In our study, for example, the politically disenfranchised may choose to watch more evening dramas because such programs reinforce societal alienation, rather than watching evening drama causes people to feel less efficacious politically. Or, those with less faith in others may watch more soap operas to substitute for ineffective social interaction.

Third, consistent with past cultivation research, the variables leave much of the cultivation process unexplained. Clearly, the demographic, program exposure, and audience activity measures provide only a small explanation of cultivation. Other variables, such as personality traits (Wober, 1986), personal experience variables (Weaver & Wakshlag, 1986), and even regional diversity (Morgan, 1986) would add further explanation about personal perceptions.

Also, measures of individualism need to tap underlying predispositions and sociostructural relations as they affect audience viewing attitudes and behaviors. Measures of individual differences emphasized in past studies often are limited to demographic or psychological factors, rather than to sociostructural relations. As is evident in a few studies (e.g., Doob & MacDonald, 1979; Hirsch, 1980), individualism has micro-level (personal attributes) and macro-level (societal attributes) components that should be considered in future cultivation investigations.

Our findings, then, could support potential cultivation effects, not from inordinate exposure levels, but from content selection as tempered by individual differences and audience attitudes and activities. In other words, other antecedent and intervening variables are instrumental in affecting personal perceptions. Cultivation effects are related to several factors that have been omitted in the conceptualization and methodology of cultivation research. Future investigations must be more inclusive of potentially influential variables in the media effects process.

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Notes

[1] As more instrumental components of television use, the viewing behavior and attitude factors were interrelated: intention and attention (r = .22, p < .001); intention and realism (r = .46, p < .001); and attention and realism (r = .10, p < .05).

[2] Because the scale's reliability increased from a .69 to a .76 alpha, an item with a .49 loading was retained for the Life Satisfaction Factor (see Table 2).

[3] The cultivation factors were interrelated (all p < .001). Faith in others and: life satisfaction (r = .31), efficacy (r = .42), interpersonal connection (r = .41), and safety (r = .39). Life satisfaction and: efficacy (r = .22), interpersonal connection (r = .33), and safety (r = .29). Efficacy and: interpersonal connection (r = .32) and safety (r = .31). Interpersonal connection and safety (r = .32).

[4] The typical cultivation analysis of computing cultivation differentials was not used in this study for two reasons. First, our measures did not include dichotomous responses representing "television" and "real world" answers for comparison (see e.g., Gerbner & Gross, 1976). Second, the Likert scales employed in this study allowed the application of higher-level statistical procedures such as regression analysis.

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Table 1
Viewing Behavior and Attitude: Primary Factor Loadings

Behavior and Attitude Statements:	Viewing Intention	Viewing Attention	Perceived Realism
FACTOR 1: VIEWING INTENTION			
1. I plan my time so I do not miss a favorite television program	.87	.03	.07
2. I often make arrangements so I don't miss a favorite television program	.87	.03	.03
3. I often check the time so I will not miss a favorite television program	.78	.01	.11
4. I cancel other plans to watch television	.65	-.01	.15
5. I look forward to watching a favorite television program	.63	.01	-.03
FACTOR 2: VIEWING ATTENTION			
1. I'm often thinking about something else when I'm watching television*	.11	.80	-.04
2. I often miss what is happening on the program when I watch television*	-.07	.76	-.09
3. My mind often wanders when I watch television*	-.08	.74	-.09
4. I pay close attention to the program when I watch television	.13	.64	.18
5. I listen carefully when I watch television	.06	.60	.17
FACTOR 3: PERCEIVED REALISM			
1. Television shows life as it really is	.09	-.06	.84
2. Television presents things as they really are in life	.10	.01	.81
3. If I see something on television, I can be sure it really is that way	.03	.00	.74
4. Television lets me see what happens in other places as if I'm really there	-.05	-.04	.58
5. Television lets me see how other people live	.09	.05	.57
Eigenvalue	5.79	2.72	1.72
Percent of Total Variance	29.0	13.6	8.6
Cronbach Alpha	.87	.77	.81

Note. * Items reversed for data analysis. Fourth and fifth factors had eigenvalues of 1.20 and 1.05, but failed to meet retention standards. The oblique-rotated PC solution explained 62.4% of the total variance.

Table 2
Cultivation Measures: Primary Factor Loadings

Attitude Statements:	Faith in Others	Life Satisfaction	Political Efficacy	Interpersonal Connectedness	Safety
FACTOR 1: FAITH IN OTHERS					
1. Most people are charitable if the situation calls for it	.78	.04	.00	.03	.06
2. Most people can be depended upon to come through in a pinch	.78	-.03	-.11	.08	.09
3. Most people can be trusted	.77	.07	.16	.00	.11
4. Most people will go out of their way to help someone	.73	.01	.01	.10	-.14
5. Most people are basically honest	.71	.06	.09	-.01	.23
6. Most people will keep a promise	.70	.05	.08	-.10	.14
7. Most people are concerned about the welfare of others	.69	.04	.23	.10	-.01
8. Most people will lend a helping hand if given the chance	.69	-.04	-.03	-.07	-.16
9. Most people try to be fair	.67	.01	.07	.07	.12
FACTOR 2: LIFE SATISFACTION					
1. My life could be happier that it is now*	.05	.82	-.08	-.13	.02
2. I am very content and satisfied with my life	.12	.75	-.11	.16	-.04
3. Compared to other people, I get down in the dumps too often*	-.04	.62	.15	.06	.04
4. I've been successful in achieving my aims or goals in life	.01	.50	.21	.00	.04
5. I find a great deal of happiness in life	.04	.49	.09	.29	.00
FACTOR 3: POLITICAL EFFICACY					
1. The people in government have the interests of people like me at heart	.10	-.04	.83	.01	-.08
2. What I say or do can make a difference with what my government does	.02	.10	.79	.06	-.03
3. People in the government care about what people like me think	.15	-.09	.78	.01	.05

Table 2 (Cont.)

Attitude Statements:	Faith in Others	Life Satisfaction	Political Efficacy	Interpersonal Connectedness	Safety
FACTOR 3 (Cont.)					
4. I can make my opinions known to my government representatives if I make the effort	-.01	-.09	.52	.06	.23
FACTOR 4: INTERPERSONAL CONNECTEDNESS					
1. It is important for me to visit with friends, relatives or neighbors	-.02	-.01	-.04	.80	.01
2. I feel like I am part of a circle of friends	-.07	.06	.01	.70	.11
3. I am interested in what happens to people I know	.12	-.04	-.04	.69	.02
4. It's important for me to participate in activities with other people	.03	.01	.20	.65	.01
5. Being able to help others is part of the joy of living	.16	.03	.08	.57	-.17
FACTOR 5: SAFETY					
1. I would feel safe if I leave the doors to my home unlocked	.12	-.04	.05	-.06	.74
2. My neighborhood is a safe place to live	.19	.00	-.07	.01	.69
3. I often walk outside around my neighborhood at night	-.06	.05	.02	.09	.60
4. I feel secure in my home	-.02	.08	.02	.23	.52
Eigenvalue	8.50	2.95	2.20	2.10	1.56
Percent of Total Variance	24.3	8.4	6.3	6.0	4.4
Cronbach Alpha	.91	.76	.80	.77	.64

Note. * Items reversed for data analysis. Sixth through ninth factors had eigenvalues of 1.30, 1.19, 1.10, and 1.01, but failed to meet retention standards. The oblique-rotated PC solution explained 62.5% of the total variance.

Table 3
Correlates of Television Exposure and Program Selection

	Television Exposure	Action/ Adventure	Daytime Serial	Evening Drama	News	Situation Comedy
Television Exposure	----					
Action/Adventure	.19*** .15**	----				
Daytime Serial	.37*** .33***	.06 .08	----			
Evening Drama	.29*** .20***	.18*** .21***	.41*** .36***	----		
News	-.02 -.05	-.02 -.03	-.23*** -.16**	-.04 -.07	----	
Situation Comedy	.24*** .24***	.04 .08	.32*** .25***	.27*** .24***	-.03 .01	----
Age	.26*** .20***	.02 .01	-.05 -.12*	.24*** .22***	.26*** .28***	-.03 -.05
Gender	.08 .04	-.15** -.16**	.39*** .38***	.26*** .25***	-.13** -.13*	.23*** .22***
Education	-.38*** -.25***	-.14** -.05	-.27*** -.20***	-.19*** -.07	.06 .08	-.08 -.06
Socioeconomic Status	-.25*** -.11*	-.23*** -.18***	-.16** -.07	-.11* -.08	.06 .02	-.01 .01
Population Density	-.05 -.03	-.04 -.01	-.08 -.06	.01 .01	.05 .03	-.02 -.01

Note. Zero-order Pearson correlations are listed across top rows, and fifth-order (fourth-order for demographics) partial correlations controlling for demographics are listed across bottom rows for each variable.
* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 4
Pearson and Partial Correlates of Cultivation Measures

Correlates:	Faith in Others	Life Satisfaction	Political Efficacy	Interpersonal Connectedness	Safety
Age	.24***	.10*	.05	.04	-.07
	.24***	.14**	.06	.02	-.02
Gender	.04	.03	.04	.11*	-.08
	.03	.05	.04	.10	-.06
Education	.05	.22***	.09	.01	.24***
	.03	.16**	.04	-.04	.16**
Socioeconomic Status	.18***	.25***	.17***	.15**	.18***
	.15**	.15**	.13*	.15**	.10*
Population Density	.02	.10	.05	.03	-.13*
	-.01	.06	.03	.01	-.16**
Television Exposure	.03	-.12*	-.09	-.06	-.07
	.02	-.05	-.07	-.05	.03
Action/Adventure	-.14**	-.19***	-.04	-.12*	-.15**
	-.10	-.13*	.01	-.07	-.12*
Daytime Serial	-.20***	-.16***	-.11*	-.05	-.15**
	-.19***	-.11*	-.10	-.09	-.09
Evening Drama	-.11*	-.09	-.14**	-.04	-.15**
	-.17***	-.09	-.16**	-.06	-.09
News	.10	.10	.13*	-.03	.06
	.03	.05	.11*	-.04	.05
Situation Comedy	-.06	-.05	-.05	.02	-.04
	-.06	-.04	-.05	.00	-.01
Viewing Intention	.17***	-.11*	.09	.05	-.06
	.15**	-.10	.10	.04	-.03
Viewing Attention	.04	-.01	.07	.03	-.01
	.04	-.01	.07	.02	-.01
Perceived Realism	.21***	-.03	.21***	.03	-.07
	.19***	.00	.24***	.03	-.03

Note. Zero-order Pearson correlations are listed across top rows, and fifth-order (fourth-order for demographics) partial correlations controlling for demographics are listed across bottom rows for each variable.
* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 5

Hierarchical Regression: Predicting Cultivation Measures

	Faith in Others		Life Satisfaction		Political Efficacy		Interpersonal Connectedness		Safety	
	b when entered	final b	b when entered	final b	b when entered	final b	b when entered	final b	b when entered	final b
STEP 1: DEMOGRAPHICS										
Age	.27***	.21***	.18***	.16**	.05	.00	.03	.04	-.01	-.04
Gender	.04	.13*	.04	.05	.00	.10	.12*	.11	-.09	-.10
Education	.05	.04	.20***	.15*	.02	.02	-.02	-.05	.20**	.17**
Socioeconomic Status	.16**	.12*	.16**	.14*	.17**	.14*	.17**	.15*	.12*	.11
Population Density	.00	.00	.06	.05	.02	.04	.01	.01	-.15**	-.17***
STEP 2: TV EXPOSURE	-.01	.02	-.07	.01	-.06	-.07	-.07	-.06	.06	.16*
STEP 3: PROGRAM SELECTION										
Action/Adventure	-.09	-.07	-.13*	-.14*	-.01	.02	-.07	-.07	-.15**	-.16**
Daytime Serial	-.16*	-.19**	-.09	-.09	-.07	-.10	-.06	-.06	-.10	-.09
Evening Drama	-.07	-.10	-.02	.00	-.13*	-.13*	.00	.00	-.02	-.01
News	.04	.03	.02	.02	.10	.07	-.03	-.04	.05	.06
Situation Comedy	-.02	-.05	.00	.02	.02	.00	.05	.05	.00	.01
STEP 4: VIEWING BEHAVIOR AND ATTITUDE										
Viewing Intention	.15*	.15*	-.11	-.11	.04	.04	.01	.01	-.02	-.02
Viewing Attention	-.04	-.04	.00	.00	.05	.05	.03	.03	.00	.00
Perceived Realism	.14*	.14*	.04	.04	.25***	.25***	.01	.01	-.12*	-.12*

Note. Betas are standardized beta weights at time of entry and at the conclusion of Step 4.

Faith: $R = .44$, $R^2 = .19$, $F(14, 338) = 5.85$, $p < .001$

Satisfaction: $R = .40$, $R^2 = .16$, $F(14, 338) = 4.48$, $p < .001$

Efficacy: $R = .37$, $R^2 = .14$, $F(14, 338) = 3.85$, $p < .001$

Connectedness: $R = .23$, $R^2 = .06$, $F(14, 338) = 1.41$, $p = .15$

Safety: $R = .39$, $R^2 = .15$, $F(14, 336) = 4.28$, $p < .001$