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On Not Learning from One's Own Mistakes: A Reanalysis of Gerbner et al.'s Findings on Cultivation Analysis Part II

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This article critically examines the statistical evidence and conceptual arguments presented by Gerbner et al. to support their assertion that television-viewing "cultivates" distorted perceptions of the "real world." In Part II, I examine three reformulations or "refinements" of the original hypothesis of across-the-board, linear effects shown in Part I to lack empirical support. Reformulation 1 requires that heavy viewers in subgroups "portrayed" on television as most victimized perceive the world as "more mean" or "scarier" than light viewers in the same subgroups. They do not. Reformulations 2 and 3, proposed by the Annenberg group and called "mainstreaming" and "resonance," are then critically examined in terms of their logical adequacy and claims of empirical support. These are shown to fail on both counts, as neither has been stated in a form offering predictions which can be supported or rejected. More generally, we conclude Gerbner et al.'s formulation(s) and assertions about cultivation effects are so inclusive that any response to survey items can be argued to support one or another version of the hypothesis. This makes the assertion both irrefutable and untestable, which argues for its rejection as a scientific proposition. Three alternative explanations of responses in the NORC dataset are outlined, each providing a more statistically adequate and theoretically sensible interpretation than those offered by the Annenberg team.

ON NOT LEARNING FROM ONE'S OWN MISTAKES A Reanalysis of Gerbner et al.'s Findings on Cultivation Analysis Part II

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A model that accommodates almost every conceivable state of the world is an important constraint on testing it. . . . Unless researchers attempt to produce states that can refute

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the model . . . support will emerge by chance because of its inclusive formulation. The support may be illusory, however, for the only means of testing the model is . . . where refutation is [acknowledged as] possible.

The purpose of this examination is not to attack the authors who have worked so hard to refine theories of needs and the effects on job attitudes and behavior. Rather, it is to question the validity and value of their fundamental conceptions of needs and jobs. Second, an alternative perspective . . . is proposed.

—Salancik and Pfeffer (1977: 428, 446)

INTRODUCTION

Salancik and Pfeffer's assessment of Maslow's theory of need satisfaction is remarkably apt for reviewing the body of Violence Profiles and cultivation analyses published by Dr. George Gerbner and his associates at the University of Pennsylvania's Annenberg School of Communications. Since 1976, Gerbner et al. have reported findings which they claim show that television watching "cultivates" changes in viewers' attitudes about society and life in general. In subsequent reports, this basic contention has been markedly qualified and reformulated along three crucial lines: (1) an admission that the anticipated effects do not appear throughout the population (1980); (2) the contention that they do appear among unspecified population subgroups (1980); and (3) the apparent belief that employing different statistical strategies to analyze the same data from year to year raises no questions about the consistency and accuracy of the accompanying texts and tables (1979b). Each

sciences and humanities in the field of mass communication. It was initiated at the suggestion of Horace Newcomb (1978), an English professor who insisted that findings presented in support of the cultivation hypothesis by the Annenberg group were logically suspect and warranted reanalysis by the social science community. The NORC and Michigan datasets are publicly available, and the issues raised, given the prominence of the Annenberg projects, need to be formalized for discussion. For critical discussion and first-rate research assistance, I am especially indebted to Tom Panelas, and gratefully acknowledge the contributions of Sally Kilgore and Stuart Michaels.

reformulation has been announced as a “refinement” of the basic argument, rather than as a qualification or admission of earlier error and overstatement.

Two central themes throughout Parts I and II of this article are:

- (1) The Annenberg group’s formulation(s) is (are) so inclusive that no matter what respondents answer on survey items, it can be argued to support one or another variant of the cultivation hypothesis. This treatment makes the assertion both irrefutable and untestable, almost by definition.
- (2) The detailed reanalysis presented here shows that, notwithstanding their reformulated theory’s growing ambiguity and lack of precision, the data analysis reported by the Annenberg team frequently overlooks standard statistical procedures. This makes it difficult for readers to infer which version(s) of their theory (if any) is (are) supported empirically.

A basic and consistent finding in this reanalysis of the National Opinion Research Center General Social Survey data from which Gerbner et al. claim support¹ is the striking *absence* of significant or meaningful relationships between the content-analysis portion of the Violence Profiles and viewers’ attitudes. The model at issue here proposes that (a) television presents a consistent set of images and messages, divined by the content analysts at the Annenberg School, and (b) these messages are salient, plausible, and clear to the viewer, such that those most exposed to them (heavy viewers) will adopt as their own attitudes and perceptions the same interpretations of television content as proffered by Gerbner et al.

Since the attitudes of heavy viewers generally show no relation to the content analysis in the Violence Profiles, four possible inferences are: (1) the categories chosen in the content analysis have no bearing on viewers’ interpretation of television fare, but the anticipated effects might show up if the researchers’ interpretations were brought more closely into line with those of the viewers; (2) despite the

evidence from survey data that the messages adduced in the Violence Profiles are not salient, plausible, or clear to the viewing population, the content analysis they provide is a valuable tool in its own right; (3) even though the Annenberg group chose structured survey items as the arena for testing the cultivation hypothesis, alternative methods—like participant observation, community studies, depth interviews, and ethnographies—might yield more support in the direction(s) of their predictions.

A fourth possible inference is to take the evidence that shows no relation between attitudes and heavy viewing as support for the null hypothesis that attitudes and viewing are unrelated. The overall absence of this association was shown most clearly in Part I when we found no linear or monotonic relation between the amount of television viewed and respondents' answers to items tapping fear, anomia, alienation, attitude toward physical violence and suicide, and perception of the "real world" as "mean" or "scary." Over 18 relevant items, nonviewers were consistently more fearful, alienated, and favorable to suicide than light viewers; extreme viewers were less perturbed than heavy viewers. The only viewing category where respondents least often provided the "TV answer," most consistently giving the "non-television" response, was that of light viewers: There was no clear-cut pattern beyond that for respondents coded as nonviewers, medium, heavy, or extreme.² Where bivariate relationships of any significance did appear in the analysis by Gerbner et al., they were virtually eliminated upon the application of (almost any two) simultaneous controls in the reanalysis (see Hughes, 1980, for a report of this same finding).

The cumulative failure to locate relationships between heavy viewing and what the Annenberg group calls the "television answer" to attitude items strongly suggests that *if* viewers are affected by television program content, as they may very well be, they simply do not see as meaningful to their interpretations the categories employed by Gerbner et

al. for coding characters' demographics and action sequences.

But even if these relationships do not hold across the population, might they not show up for heavy viewers within some groups, particularly those subgroups found in the Violence Profiles to be victimized most often in the world portrayed on television? Gerbner et al. have formulated three hypotheses in support of this contention:

- (1) Heavy viewers from subgroups *victimized* on television should perceive the world as *more* "mean" and "scary" than light viewers from the same subgroups. Conversely, heavy viewers from subgroups *least victimized* on television should perceive the world as *less* "mean" and "scary" than light viewers from the same subgroups. This proposition follows from the text of Violence Profiles 7 through 10 (1976-1979), from which examples are provided in the next section.
- (2) Heavy viewers from *unusual* subgroups (possibly including those victimized on television) may perceive the world as *less* "mean" and "scary" than light viewers from the same subgroups; they also will show less variation around these attitudes. This competing proposition is advanced as a "refinement" of the cultivation hypothesis in the most recent Violence Profile (No. 11, 1980).
- (3) Heavy viewers from *unusual* subgroups (possibly including those victimized on television) may perceive the world as *more* "mean" and "scary" than light viewers from the same subgroups. (Also in Violence Profile No. 11, 1980; this is the opposite of formulation 2.)

Because Gerbner et al. fail in formulations 2 and 3 to predict or specify which subgroups' attitudes should move in either of these directions, their three versions of the "same" theory are able to account for virtually all observed difference between the percentage of heavy and light viewers. Even where there is *no* difference between the percentage of heavy and light viewers giving a "television answer," the "theory" allows one to argue that formulations 2 and 3

occurred simultaneously. In that event, the explanation offered for the absence of a relationship might be that the claimed "effects" were indeed present, but the combined upward and downward influence of television on how respondents scored on an attitude item canceled each other and, hence, cannot be shown or demonstrated. "Cultivation analysis," presented in this form, thereby precludes finding and interpreting the same results as support for the more (or equally) plausible alternative hypotheses that (1) there is *no* direct statistical relationship between number of hours viewed and attitudes, or (2) if any are found, the relationships are spurious.

In section 1 of this reanalysis, we examine evidence for the first formulation and show that heavy viewers in victimized groups do *not* perceive the world as more "mean" or "scary" than their lighter-viewing counterparts; nor do heavy viewers among the least-victimized groups perceive the world as less "mean" or "scary" than their lighter-viewing counterparts: Formulation 1 is unsupported by the data. Following that, we will consider Gerbner et al.'s concepts of "mainstreaming" (formulation 2) and "resonance" (formulation 3). Particular attention will be accorded the evidence presented as supporting these hypotheses, just as the tables and data from their earlier profiles were closely described and examined in Part I of this article. After showing why formulations 2 and 3, as presented in Violence Profile No. 11, are not stated in a testable form permitting either support or refutation, I will outline three alternative explanations, each providing a more statistically adequate and theoretically sensible interpretation of the data reported by the Annenberg group.

ABSENCE OF CULTIVATION DIFFERENTIALS AMONG VIEWERS FROM VICTIMIZED GROUPS

Measuring the ratio of risk of each group's chances for involvement also relates to the cultivation of real-life concepts.

We may watch all kinds of characters to assess the general risk of involvement, but when we apply that general risk personally, we may be especially receptive to seeing how characters *like ourselves* (male or female, young or old, black or white, etc.) fare in the world of television. Regardless of how often they do get involved in violence, if they are usually hurt or killed, the lesson learned may well be one of high risk.

—Gerbner et al. (1978: 186; emphasis in original)

If television viewers draw inferences about the real world from the dramatic, comic, and other fictional entertainments presented on television, there are innumerable possibilities and permutations for how this process might unfold. For research purposes, the theory and assumptions underlying whatever methods are chosen to test for relationships are critical and logically prior to the actual analysis.

Questions about television's ability to shape perceptions of the world are naturally linked to collateral issues about viewers' personal identification with television characters. From a universe of potential coding categories and potential bases for viewers' cognitive and affective processing of narratives, sequences, and characterizations, the Annenberg group has focused on and made central: sequences of violence and victimization coded in terms of demographic (age, sex, and so on) attributes of characters on television. Instances of kindness or altruism are not coded, for example, and we have no idea of their distribution and ratio to acts of violence; verbal abuse is not seen as violent; individual programs are not treated as units or narrative wholes. Viewer identification is assumed to operate one to one on the basis of only those gross demographic characteristics which are shared with television characters. For example, white male viewers should identify with all white male television characters equally, across all types of plots, sequences, and characterizations. Since individual programs are not treated as relevant, the model equates Archie Bunker with his (dramatic foil) son-in-law on *All in the Family*, as both are

"white males"; Mary Tyler Moore with Lucille Ball, on the programs carrying their own names (both are "white women"); and the serious roles of Ben Vereen (in "Roots" and other dramas) with those of Redd Foxx (buffoon in *Sanford and Son*), as both are coded as "black men."

While the coding strategies employed in content analysis and assumptions about bases for viewer identification are clearly the prerogative of the investigator, it must be emphasized that those selected by the Annenberg team are far from the only ones available.³ Their model imposes especially abstract sociological and demographic categories onto the interpretative mind of the viewer in a manner we will show is not supported by the NORC dataset, nor by other research in the fields of culture and communication.

The cultivation hypothesis asserts that the same "facts of life" shown on television will appear disproportionately in the attitudes and perceptions of heavy viewers, as this group is "more likely to understand social reality" (Gerbner et al., 1978: 194) in terms of the "messages" conveyed by the medium. The most salient of these "facts" and "messages," and the only aspects of behavior reported annually in the Violence Profiles, concern the ratios and rank orders in which members of various demographic groups turn up as either killers or killed, and as "violents" or victims on prime-time television.

If viewers extrapolate estimates of their own life chances from those befalling their demographic counterparts on television, as Gerbner et al. propose, heavy viewers from subgroups whose members are most often victimized or killed should appear more afraid and suspicious than light and medium viewers from the same groups. Conversely, viewers from the subgroups whose members are least often victimized or killed should reflect television's representation of their relative invulnerability; i.e., their levels of fear and suspicion should decline with increased viewing.

These hypotheses are easily tested, since the Violence Profiles code television characters' attributes in terms of the same standard demographic variables into which survey

research sorts respondents. They follow directly from the Annenberg group's assumptions that (1) the content categories adapted in the Violence Profiles are isomorphic with the viewer's interpretation of what he/she has watched, and (2) television "cultivates" opinions about social reality which heavy viewers will "learn" from being disproportionately exposed to them: "Victims, like criminals, must learn their proper roles, and televised violence may perform the teaching function all too well" (Gerbner and Gross, 1976b: 45).

Following the content analyses reported by Gerbner et al. (1978), we examined the attitudes of three population subgroups reported to exhibit the highest frequency or probability of seeing their demographic counterparts victimized or killed on television. These are:

- (1) *Women* ("Although men are more likely to enter the arena of violent contest, women carry greater risks of victimization." 1978: 187.)
- (2) *Women 55 years of age and over* ("Old women are at the very bottom of the heap of both the battered and the killed." 1978: 192.)
- (3) *Black women* ("Nonwhite . . . women are next in line of general victimization." 1978: 192.)

For comparison purposes, we also examined the attitudes of:

- (4) *Black men* ("To be other than clearly white is similarly risky." 1978: 189);⁴ and
- (5) *White men*, who emerge from the Violence Profiles as dominant, insofar as they get to do more of the killing than members of most other groups and are less often victimized in television portrayals. ("The pecking order of both general mayhem and killing is dominated by men—American, white, middle class, and in the prime of life." 1978: 191.)

Table 1 shows the bivariate percentage (without controls) of viewers in each of these groups afraid to walk alone at

night within a mile of their homes. If heavy viewing "cultivates" increased fear, this should be most apparent for elderly and black women, and for all women. It should be least apparent for white males. None of the expected "cultivation" effects obtains in any of these groups. Among black women, consistently the most fearful of all groups across viewing categories, it is the *light* viewers who are the most fearful. Their "cultivation differential" between light and heavy viewers is 15%, but in the wrong direction. The medium viewers' mean response of 63% further suggests that amount of television-viewing is unrelated to fear level, for it allows for no "trend" in either direction. (See Doob and MacDonald, 1979, who argue the proper "causal" variable here is simply whether one's neighborhood is actually safe or unsafe. In this connection, light viewers among black women could be more fearful simply because they spend more time outside their houses at night.)

In Table 1, we also see the elderly women's fear levels remain basically unchanged, as do all women's, irrespective of amount of viewing. We see consistently, in the last column, that each of the "victimized" subgroups shows a *smaller* cultivation differential between light and heavy viewers than do those groups for which the hypothesis predicts lower or negative differentials, i.e., groups whose members encounter a lower level of risk when portrayed on television. The greater ratios of victimization reported for women, blacks, and white and black women in the Violence Profiles should yield *larger* differentials, and are in sharp contrast to the wider respective cultivation differentials shown for *male* respondents in each corresponding category in Table 1. A rise in fear level of black males who view more also is apparent, while the level for white males (the least fearful of all groups in each viewing category) remains stable but does not decline.

Fear of crime is more logically related to the content analysis in the Violence Profiles than most of the other attitude items in the NORC dataset analyzed by Gerbner et al.

TABLE 1
Percent Afraid of Walking Alone at Night in Own Neighborhood by Television Viewing, Race, and Sex

		<u>Television Viewing</u>			<u>Cultivation * Differential</u>
		<u>Light (0-2 hrs.)</u>	<u>Medium (3 hrs.)</u>	<u>Heavy (4 or more hrs.)</u>	
All Men	(N = 677)	22	21	28	6
All Women	(N = 825)	65	61	62	-3
All Whites	(N = 1328)	41	44	46	5
All Blacks	(N = 174)	65	49	68	3
White Men	(N = 608)	21	20	24	3
White Women	(N = 720)	63	61	59	-4
Black Men	(N = 69)	36	31	55	19
Black Women	(N = 105)	88	63	73	-15
Women 55 and Over	(N = 268)	67	68	69	2

SOURCE: NORC General Social Survey, 1977.

*Computed by subtracting the percentage of light viewers giving the "television answer" (fear of walking alone at night) from the percentage of heavy viewers. Support for the cultivation hypothesis would be indicated by large positive differentials among those groups most "victimized" on television (blacks and elderly women, white women, all women) relative to less-victimized groups (white men, all men, black men).

and/or further discussed in Part I of this article. Nevertheless, because the Annenberg team has constructed a "TV answer" for many of these additional items, we examined the answers of respondents from the same subgroups by viewing category to 18 attitude items tapping anomia, alienation, attitude toward physical violence and suicide, and perception of the "real" world as "mean" or "scary."⁵ Taken as a group, the same basic finding appears across all of these variables: *Television content portraying members of these subgroups as more likely to be killed or victimized does not "cultivate" increased fears or anxieties on the part of heavy viewers from the same subgroups. The percentage differences in the responses of heavy and light viewers do not form a pattern to support claims of any relationship at all.*

Tables 2 and 3 elaborate this general finding. Here we can compare the size of the cultivation differentials shown in the last column for each subgroup, in answer to the questions:

"Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?" (Table 2)

and

"Do you think that most people would try to take advantage of you if they got a chance, or would they try to be fair?" (Table 3)

For each of these bivariate tables, the cultivation hypothesis predicts that the magnitude of television's "effect," or size of the cultivation differential, should have a positive sign *and* be larger for victimized subgroups than for those who encounter a lower level of risk when their groups are portrayed on television. Instead, we see here that the percentage difference between light and heavy female viewers providing the "television answer" (13 and 10, respectively)

is no greater than the cultivation differential for male viewers (13 and 11). For black viewers, whose differential should be larger since they are portrayed less favorably on television than are white characters, it is 13% *less* in Table 2 and about the same in Table 3. White women present a differential either the same size as white men (within 1% in Table 2) or lower (Table 3).

Black women show a smaller differential than black men in Table 2, and a larger one in Table 3. This is important to note here, for while we interpret this as evidence for no pattern, Gerbner et al.'s contradictory formulations 2 and 3 ("mainstreaming" and "resonance") assemble and interpret very similar statistics as *support* for the cultivation hypothesis, i.e., regardless of whether the cultivation differentials are larger *or* smaller. This will be discussed further in the following section.

A larger proportion of elderly female heavy viewers also provides the "television answer" to the "trust" item in Table 2, but not for the "fair" item in the following table. If one emphasizes or reports *only* those items in which victimized subgroups' differentials are in either the direction predicted by the hypothesis, or counter to it, an apparently strong, but also deceptive and false, case could be made for either interpretation. Indeed, as I showed in Part I of this article, once multiple statistical controls are applied to these items simultaneously, the cultivation differentials shrink dramatically: The amount of television viewing by members of any group is found to add nothing whatever to the small amount of variance already explained by stronger predictors like education and work status.

Summing across all of the 18 relevant attitude items,⁶ Table 4 reports the number of items (out of 18) for which the cultivation differentials of victimized subgroups, compared to those of groups portrayed on television as dominant, are larger, positive, and linear, as the cultivation hypothesis proposes. This summarizes the bivariate relationships for 18 tables, including the 3 just presented and discussed. The

TABLE 2
 Percent Saying that "You Can't Be Too Careful in Dealing with People" by Television Viewing, Race, and Sex

		<u>Television Viewing</u>			<u>Cultivation * Differential</u>
		<u>Light (0-2 hrs.)</u>	<u>Medium (3 hrs.)</u>	<u>Heavy (4 or more hrs.)</u>	
All Men	(N = 1256)	49	57	62	13
All Women	(N = 1603)	57	67	70	13
All Whites	(N = 2542)	50	60	64	14
All Blacks	(N = 307)	82	90	83	1
White Men	(N = 1113)	46	54	58	12
White Women	(N = 1429)	54	65	67	13
Black Men	(N = 133)	76	89	80	4
Black Women	(N = 174)	88	90	84	-4
Women 55 and Over	(N = 508)	59	70	73	14

SOURCE: NORC General Social Survey, 1975 and 1978.

*See note in Table 1.

TABLE 3
 Percent Saying that "Most People Would Try to Take Advantage of You if They Got a Chance"
 by Television Viewing, Race, and Sex

	<u>Television Viewing</u>				<u>Cultivation * Differential</u>
	<u>Light (0-2 hrs.)</u>	<u>Medium (3 hrs.)</u>	<u>Heavy (4 or more hrs.)</u>		
All Men (N = 1209)	34	40	45	11	
All Women (N = 1573)	26	30	36	10	
All Whites (N = 2492)	24	33	34	10	
All Blacks (N = 290)	64	55	66	2	
White Men (N = 1083)	25	39	41	16	
White Women (N = 1409)	23	28	31	8	
Black Men (N = 126)	73	58	66	-7	
Black Women (N = 164)	55	54	66	11	
Women 55 and Over (N = 495)	24	27	25	1	

SOURCE: NORC General Social Survey, 1975 and 1978.

*See note in Table 1.

number in each cell of the table is stated as a proportion: An entry of .33 means that out of the 18 items examined, six (i.e., one-third, or .33) fell into the category described in the column heading under which that cell appears.

In looking at Table 4 we should bear in mind, once again, that multiple controls, which substantially disperse what patterns there are here, have not been added. Yet even without these controls, no consistent pattern emerges for any of the victimized subgroups which would support the cultivation hypothesis' first reformulation. To find support would require that the groups which are most victimized on television show more instances of positive "cultivation" than do less-victimized groups. For example, since women are more victimized than men on television, the proportion of items on which increased viewing is associated with their provision of "television answers" should be higher for women than for men. Instead, we find that the proportion is identical (.44). Heavy viewers from victimized groups are shown to provide "television answers" no more frequently than do heavy viewers in groups shown on television as less-often victimized. Black women, black men, and elderly women provide the "television answer" even *less* often than heavy viewers from groups portrayed as more dominant on television. Heavy viewers in such victimized subgroups are no more likely than their counterparts in other groups to interpret television content in a manner consistent with the categories in the Violence Profiles. In sum, the general finding of no relationship is reaffirmed.

PROBLEMS WITH "MAINSTREAMING" AND "RESONANCE": AMBIGUOUS, UNTESTABLE, AND IRREFUTABLE

The definition of a need as ambiguous is, therefore, an advantage, because it permits use of the concept as an almost universal explanation for behavior. . . . The evolution of thinking about job attitudes and needs has followed a

TABLE 4
Proportional Distribution of Cultivation Patterns Among Subgroups Across 18 Items

Groups	Patterns			Cultivation Differential Stable (No Trend) ⁴
	Linear Trend and Positive Cultivation Differential ¹	Negative Cultivation Differential ²	Nonlinear Trend and Positive Cultivation Differential ³	
All Women	.44	.33	.17	.06
All Men	.44	.28	.28	.00
White Women	.44	.28	.17	.11
White Men	.44	.28	.22	.06
Black Women	.00	.50	.11	.38
Black Men	.17	.39	.22	.22
Women 55 and Over	.22	.06	.22	.50

1. The proportions in this column, according to the cultivation hypothesis, should be largest for the most victimized groups (each female group) and smaller for each of the corresponding male groups whose proportions appear in this table.
2. The proportions in this column, according to the cultivation hypothesis, should be largest for the least victimized groups (each male group, especially white males) and smaller for each of the corresponding female groups whose proportions appear in this table. In this column, linear and nonlinear differentials are collapsed since neither supports the cultivation hypothesis.
3. Where the cultivation differential between light and heavy viewers is positive, but the percentage of "medium" viewers providing the "television answer" is greater than those for heavy viewers or less than those for light viewers, the resulting "pattern" is nonlinear. There is no trend, and the cultivation differential becomes an uninterpretable (i.e., useless) statistic. This problem is addressed in Part 1 of this article.
4. If the difference between heavy and light viewers is zero or negligible, there is no trend in either direction.

course from assumptions about the universality of humans to adopt positions that permit more and more contingencies and individual differences. The flexibility in the need-satisfaction model has been bought, however, at the cost of theoretical elegance and precision. . . . Modifications made to fit the need-satisfaction model with empirically described reality have weakened its one great strength, the intuitive appeal of its simplicity.

—Salancik and Pfeffer (1977: 437, 443)

But the lack of an overall relationship does not mean that the relationship does not hold for any specific group of respondents [sic].

—Gerbner, Gross, Morgan, and Signorelli (1980: 19)

Like models of need-satisfaction, the cultivation hypothesis continues to be presented by its proponents in several guises. The original formulation predicted across-the-board consequences of television-viewing for all viewers. After the survey data cited as supporting this version of the hypothesis were reanalyzed by Hirsch (1980a) and Hughes (1980), the Annenberg group noted (1980: 19), "They all found that the overall association disappears when several demographic variables are controlled all at once." Gerbner et al. apparently see these findings as no reason to withdraw the original version of the hypothesis, even though propositions which contradict it appear in their own reformulations 2 and 3. In the most recent Violence Profile (1980: 14-15), they assert that the original hypothesis "still holds and provides some of the most compelling [sic] evidence for the existence of television's contributions to conceptions of social reality."

A first reformulated version of the relationship originally asserted suggests contingencies and differences to search for among subgroups where they should be most likely to appear. *Given* the absence of the claimed relationship across the population, the most logical inferences from the Annenberg team's own content analysis are that (a) heavy

viewers among those subgroups portrayed as the most victimized would reflect television's "cultivation effect" by appearing more alienated, anomic, or "scared" than light viewers in the same subgroups; and (b) heavy viewers among those subgroups portrayed as more dominant and less often victimized would also reflect television's "cultivation effect" by becoming *less* alienated, fearful, or "scared"—or else showing no attitude change—when compared to light viewers in their own subgroups. Note that this formulation, derived from the texts of Violence Reports 7-10 (1976-1979), specifies *in advance of the data analysis* both a theory and predictions about (1) *which* groups will be affected differentially, (2) *why* one should expect these patterns to emerge, and (3) *in which direction* the attitudes of heavy viewers in particular subgroups are expected to "move."

This version of the cultivation hypothesis is the one tested in the preceding section of this article. Across 18 items, including those analyzed by Gerbner et al. in the same dataset, we found no empirical support for these contingent propositions derived from the Violence Profiles. None of the "victimized" or "dominant" subgroups exhibited any consistency in appearing more or less "cultivated" in the directions which follow from cultivation theory in its original version.

Undaunted in their commitment to "demonstrate" at least some cultivation effects, the Annenberg team (1980) has come forth with two new "refinements" and reformulations (still maintaining there is "compelling" evidence for the original version). As in the first reformulation, the search for relationships is confined to subgroups, with neither claiming to find support across the general population: "Further examination of previously analyzed and new data reveals there are substantially different patterns of associations for different social groups between amount of viewing and certain conceptions of social reality. . . . Therefore, a fuller understanding of television's contribution may

be achieved by paying particular attention to differences *across different subgroups*" (Gerbner et al., 1980: 15; italics added).

Unlike the first reformulation (which we derived from the Violence Profiles), the Annenberg team's most recent refinements fail to specify in advance of the data analysis *which* subgroups will be affected differentially or *in what direction* the attitudes of heavy viewers in any given subgroup are expected to "move." Perhaps anticipating or acknowledging the results shown in the preceding section—that the cultivation differentials between heavy and light viewers in subgroups portrayed as victimized or dominant do not form patterns in the respective directions predicted by the hypothesis—the newest reformulations for the first time drop the comparison of heavy and light viewers *within* the same subgroups. Cultivation differentials, when displayed, are now presented in terms of *between* (across) subgroup comparisons of heavy and light viewers. The earlier focus on comparing cultivation differentials across single rows for individual groups (which we have shown fails to support the hypothesis) is simply abandoned without explanation in Violence Profile No. 11 (1980), which instead substitutes an entirely new method of measurement and statistical procedure.

The new method for locating cultivation effects is to (1) calculate the percentage difference between heavy viewers in any two (or more) subgroups on any single item and then (2) compare it with the percentage difference between light viewers from the same subgroups. If the size of the percentage difference between these subgroups' heavy viewers is smaller than the corresponding difference for light viewers in the same subgroups, then the relatively greater "homogeneity" in outlook among the heavy viewers is attributed to television's having cultivated "the sharing of that commonality" among them (1980: 15). This "process" is called "mainstreaming." It deflects attention away from the row-by-row (light versus heavy viewers) comparison of the cultivation differentials within subgroups utilized in pre-

vious reports, which reanalyses by others have shown fail to support the hypothesis. Instead, the "new" column-by-column (light-light versus heavy-heavy viewers) comparison of percentage differences *between* subgroups is now proposed as the methodological "refinement" by which television's "effects" on (unspecified) subgroups are really (finally?) to be found.

The "refinement" proposed here does not merely announce a switch in the method employed to seek support for the hypothesis. *It also cuts loose the search for television's effects from the content analyses in the Violence Profiles which must form the basis for any advanced predictions about which subgroups should be more likely to provide "television answers" to each of the attitude items examined.* Only by separating these two components of the project in this way can the investigator(s) claim to find an "effect" regardless of *in which direction* the attitudes of heavy viewers in different groups converge.

Gerbner et al. make this claim explicitly in Violence Profile No. 11 (1980), and provide several illustrations drawn from a battery of items tapping respondents' fears about personal safety and attitudes about crime and the likelihood of victimization. In the first illustration, they report: (1) The percentage difference between heavy and light female viewers agreeing "fear of crime is a serious personal problem" is greater than the percentage difference between heavy and light male viewers agreeing with this response. Also, the percentage difference between heavy and light viewers in cities is greater than the corresponding difference between heavy- and light-viewing suburbanites. For the same item, they also report: (2) The percentage difference between heavy and light nonwhite viewers is *smaller* than the difference between heavy and light white viewers, and, similarly, that the percentage difference between heavy- and light-viewing respondents with low incomes is *smaller* than the corresponding difference between heavy and light viewers with medium and high incomes.

For this item, the first set of bivariate comparisons conforms to what one would predict from the content analyses in the Violence Profiles: Females and (presumably) city residents⁷ are depicted on television as more prone to be killed or victimized than males or subordinates; if heavy viewers in each of these categories are found to agree more than light viewers that "fear of crime is a serious problem," then Gerbner et al. could claim that the responses to this item suggest television portrayals "cultivated" greater fear among the heavier viewers in these subgroups.⁸ (Of course, there is ample reason to expect that these [bivariate] "effects" would disappear upon the application of multiple controls. See Part I, and the discussion to follow shortly, for elaboration and substantiation of this observation.)

The second set of comparisons, however, runs directly *counter* to what follows from the content analyses in the Violence Profiles. As we showed in the last section, in testing reformulation 1, these report low-income and nonwhite members of society are killed and/or victimized far more often in television portrayals than their white and middle-income counterparts. The prediction from this should be to specify that low-income and nonwhite respondents are the subgroups *most* likely to provide the "television answer" by exhibiting fear levels higher than those of middle-income and white viewers. The Annenberg group avoids this embarrassment only by reformulating the criterion for "finding" a cultivation effect, such that *the directionality of any percentage change where it occurs becomes immaterial*. Support is now claimed if *any* percentage difference among heavy viewers, relative to light viewers, converges "into a 'mainstream' . . . regardless of the starting points" (1980: 25, italics added) *and irrespective of whether or not whatever endpoint they converge on could be predicted from the content analyses in the Violence Profiles*.

"MAINSTREAMING" AND "RESONANCE"

Gerbner et al. offer two post hoc propositions to explain why the cultivation hypothesis is "supported" when heavy viewers, in subgroups whose portrayal on television yields high risk and victimization ratios, fail to provide "television answers" to attitude items tapping the anticipated "mean" and "scary" orientation to the "real world." The most peculiar of these converts the statistical artifacts of ceiling effects and regressions toward the mean (compare Campbell and Cook, 1979, and other standard texts on regression fallacies)⁹ into a statement of support for findings counter to predictions from the Violence Profiles' content analyses.

"Mainstreaming" is defined (1980: 15) as "the sharing of that commonality among heavy viewers in those demographic groups whose light viewers hold divergent views." It is a "convergence" of attitudes among heavy viewers *in any two or more subgroups, at any point along any item's distribution* where the percentage divergence between the corresponding subgroups' light viewers is relatively larger. The point of convergence here varies with each item and subgroup. That is, it is not defined independently of either, with the result that there is no baseline point for any variable or for any set of subgroups which could be called (like the grand mean of a distribution) "the" mainstream. Only *after* one determines if they conform to the statistical criteria, which *are* its sole definition, is it possible to locate the "mainstream" in any subgroup comparisons. Its operational definition for a given item is simply whichever point in the distribution heavy viewers in any two or more subgroups happen to converge on. Gerbner et al. (1980) impute meaning to this joint statistical occurrence by asserting it reveals where heavy viewers in those groups selected for comparison, and so converging, share "a relative commonality of

outlooks that *television* tends to cultivate" (1980: 15, italics added).

A critical feature of the mainstreaming concept is its treatment of the *direction* of this convergence as immaterial. Where heavy-viewing outliers at the high end of an item's distribution meet the criteria for "mainstreaming" and converge downward, the Annenberg team infers that their disproportionate absorption of television's messages and common symbolic universe "coaxes" them toward an apparently more benign and "relatively homogeneous" outlook: an attitude shared by all heavy viewers and closer to more "general and widespread images and norms of reality" (1980: 15, 23).

In their first illustration of this concept, described earlier, the percentage difference between heavy and light non-white viewers' responses to a "fear" item was smaller than the corresponding difference between heavy and light white viewers; and, similarly, the corresponding differences among low-income viewers was smaller than among those with higher incomes. Both findings run *counter* to the predictions about the relation of the fear levels of members of victimized groups and amount of viewing made by the original cultivation hypothesis and its first reformulation, for both of the latter anticipate a *positive* relationship. With reformulation 2—"mainstreaming"—the Annenberg team has both (a) embraced these and other findings of a *negative* association, and (b) presented them as evidence in *support* of the cultivation hypothesis in (yet) another of its guises. Our finding in Table 1 that the fear levels of black women were negatively related to television viewing and that white women's also declined slightly with increased viewing is not taken as "negative evidence" by this formulation. Rather, the absence of an association between the Violence Profiles depiction of both as victimized and their respective viewing habits is recast and transformed by the "mainstreaming" hypothesis. Even though both subgroups failed to yield support for two earlier versions of the cultivation

hypothesis, they are recaptured by reformulation 2 with its unabashed reoperationalizations of the cultivation concept ("coaxing" back rather than "scaring") and substitution of a different and more forthcoming method for setting up subgroup comparisons.

Gerbner et al., as noted earlier, have nevertheless not renounced the alleged power of the hypothesis's original formulation to generate "compelling" evidence. Indeed, reformulation 3 extends it in the same illustration by attributing to television the capacity to *increase* fear levels for subgroups whose heavy viewers' responses do not vary inversely with amount of viewing. Where across-subgroup comparisons find heavy viewers in victimized groups providing "television answers" in relatively *greater* proportions than light viewers in the same groups, the authors here propose that this percentage difference increased (rather than narrowed, as in mainstreaming), because the topic of the particular item employed must have been "particularly salient" to them. Such high salience is further suggested to make television's "violent imagery" so congruent with these respondents' "real-life perceptions" that the issue becomes "amplified"; from the two (television and "real life") together, they are dealt a "double dose."

Reformulation 3, called "resonance," is said to apply, in the first illustration of Violence Profile No. 11, to the disproportionate agreement in attitudes expressed by women and urban residents that "fear of crime is a serious personal problem." As described earlier, the percentage differences between heavy and light viewers in these categories exceeded those between heavy and light viewers who are men and residents of smaller cities, respectively. In contrast to the "mainstreaming" illustration, in which television viewing is said to have "coaxed" *down* fear levels of low-income and nonwhite heavy viewers, formulation 3 attributes the increased fear levels of heavy viewers in these two comparison subgroups to "high salience" which members of these groups place on the issue in this item.

For women, urban residents, nonwhites, and low-income earners, these post hoc explications of their scores on a single fear item raise several fascinating issues about theory-building. First, we see that whichever direction the percentage differences move in, the outcome is treated as consistent with the notion that the attitudes of respondents in all of these categories were "cultivated" by television.

There is no provision in these reformulations for theory-testing, nor is a means provided by which the cultivation hypothesis could possibly be disconfirmed. Second, if the fear levels were exactly the reverse for all four subgroups, these concepts could just as easily provide the same post hoc speculations to "explain" the opposite results, with equal seriousness. Had nonwhites and low-income heavy viewers "mainstreamed," for example, one could easily marshal reasons from them to hold "extreme" attitudes at the starting point and then be "coaxed" downward by television content. *Since no predictions concerning (a) which groups will mainstream or resonate, or (b) what it means if they are offered in advance, one can easily adduce greater or less issue salience after the fact to "account" for any outcome.* Table 5, adapted from Gerbner et al.'s discussion of mainstreaming and resonance among low-income urban dwellers and nonwhites illustrates the combined difficulties posed for a theory of television's effects when predictions, directionality, and the possibility of disconfirmation are excluded from the discussion.

Third, while the term "mainstream" implies some knowledge of a fixed point, it is used here simply as a descriptor of the distributions of heavy and light viewers in arbitrarily selected subgroups for arbitrarily selected items. There is no search for across-item, or between-subgroup consistency, or where the mainstream appears, nor is it defined here independently of television viewing. A more theoretically sound alternative would be to take the mean of each demographic (sub)group examined, define *it* as the "mainstream," and define respondents \pm one standard deviation

TABLE 5
All-Purpose Explanations for Fear of Crime by Nonwhites
in High Crime Areas (Hypothetical Example)

All-Purpose Explanations for Fear of Crime by Non-Whites in High Crime Areas (Hypothetical Example)	
Heavy Viewers' Fear Levels Compared to Light Viewers'	
Higher	"Resonance." Issue has "special salience." Television's violent imagery yielded a "coherent and powerful double dose."
Lower	"Mainstreaming." Television "coaxed" fear level downward, to better correspond to more "general and widespread images of social reality."
Stable	Both resonance and mainstreaming may have occurred together. Or neither might have occurred at all. If they interacted, then the effects of each remain unfound (but might have occurred); each would have cancelled the other, and give only the <u>appearance</u> of no cultivation effect.

away as "outliers." Cross-tabulations of these "outliers" and "mainstreamers" with their television-viewing behavior would provide a more objective and comprehensible test for any relation between the distribution of television-viewing and the distribution of responses to a given item.¹⁰

Absenting guidance from these reformulations of cultivation theory concerning the appropriate items for selection and what to anticipate in advance of the data analysis, we sought to find out what could be learned from a random number table. The closest approximation available in the NORC dataset is the coding of each respondent into his or her zodiac sign, according to birthday. Interestingly, in Table

TABLE 6
Fear of Walking Alone at Night in Own Neighborhood by Television Viewing and Respondent's Zodiac Sign (in percentages)

	<u>Television Viewing</u>			<u>Cultivation Differential</u>
	<u>Light (0-2 hrs)</u> (N 756)	<u>Medium (3 hrs)</u> (N 308)	<u>Heavy (4+ hrs)</u> (N 444)	
<u>Astrological Sign</u>				
Aries (N 123)	53	48	41	-12
Taurus (N 114)	37	62	45	8
Gemini (N 130)	35	33	55	20
Cancer (N 121)	46	42	48	2
Leo (N 134)	38	35	51	8
Virgo (N 123)	43	35	51	13
Libra (N 153)	48	39	56	8
Scorpio (N 125)	43	35	55	12
Sagittarius (N 113)	46	55	47	1
Capricorn (N 112)	39	42	49	10
Aquarius (N 120)	41	36	48	7
Pisces (N 140)	47	56	47	0
Mean:	43	44	49	

SOURCE: NORC General Social Survey (1977).
 Range among Light Viewers: 18%.
 Range among Heavy Viewers: 15%.

6, we find parallels with the response patterns of other subgroups already discussed in relation to "fear" items. While the *overall* relation is weak between fear of walking alone at night and zodiac sign for light, medium, or heavy viewers, these data reveal a convergence in outlook among heavy viewers when compared with light viewers. Whereas light viewers exhibit a range of 18% across all astrological

categories, the disparity narrows to 15% for heavy viewers. This convergence in the fear level of heavy viewers suggests that television serves to homogenize fear levels by moderating those of respondents under the more distant, outlying signs. Television's ability to mainstream respondents with extreme views is most impressively illustrated for viewers born under the signs of Aries and Gemini. Viewers in these subgroups are coaxed back to the mainstream as their television viewing increases. Among light viewers, Aries are considerably above the mean on fear and Geminis considerably below, but both show a convergence among heavy viewers. In a separate analysis (not shown), resonance is most clearly evidenced by respondents born under the signs of Libra and Scorpio, in their response to our item about trust in others. Their cultivation differentials, of 15% and 8%, respectively, show that for these groups, television's violent imagery clearly boosted a "mean world" view for people who already experienced the difficulty of dealing with others as a salient problem. Zodiac sign, while not consistently strong in showing the power of television to influence viewers' attitudes, remains an important indicator. It is very significantly associated ($\chi^2 < .01$) with the number of hours viewed by the respondents in the NORC sample.¹¹

CONCLUSION

Part I of this article presented a reanalysis of data cited by Gerbner et al. as evidence for the "cultivation hypothesis" that television viewing has positive and linear effects on individuals' feelings of fear, suspicion and alienation. We found that the relationship asserted disappears with the introduction of appropriate statistical controls. Part II reported further on the reanalysis and presented a critique of the logical adequacy of two new versions of the cultivation hypothesis proposed recently by the Annenberg

researchers. We again found no consistent patterns to support the cultivation hypothesis in any of its various guises and formulations. Such negative findings call the Annenberg team's basic approach into question and invite alternative theoretical explanations for the failure to find support for the cultivation hypothesis. Although the paradigm of Gerbner et al. has dominated discussions of television content and effects for some time, it is but one among several competing frameworks which warrant the interest and attention of researchers. Rather than signaling a retreat from research into television's cultural role, disconfirmation of Gerbner et al.'s hypothesis should underscore the need to examine new approaches, including those in the humanities (see, for example, Hirsch and Carey, 1978). While a thorough treatment of the relevant theoretical and conceptual issues is beyond the scope of this article, we conclude by briefly outlining three plausible explanations for the absence of cultivation effects.

(1) No effects: patterns are random. In many respects, this is the most plausible and parsimonious explanation for the data presented, especially in view of our reanalysis. We have examined data presented by the Annenberg researchers as well as 18 of the most "relevant" survey items in the NORC dataset and have found no consistent patterns which would support the cultivation hypothesis in any of its various guises to hold up across a majority of them. We find no reason, therefore, to reject the null hypothesis of no observable effects.

(2) Differential availability. Television's heaviest viewers are disproportionately housewives, sick people, unemployed, and with low income. They are among the most alienated members of our society to begin with and are *available* to watch large amounts of television because they are confined to the home much of the time. Research indicates that alienation and isolation tend to stimulate heavy

media consumption rather than vice versa (for a summary of some of this research, see Katz and Foulkes, 1962: 379-381). (Along that line, we have also found, for example, that the number of hours one spends *listening to the radio* is positively and significantly associated with the "television answer" to several of the items which Gerbner et al. correlated with television viewing.)¹² Thus any relationship between television viewing and fear, suspicion, or alienation which emerges prior to the introduction of multiple controls may be considered an artifact of covariation with television viewing, but not an effect which television causes or "cultivates." Furthermore, the absence of high levels of personal stress among television's *heaviest* viewers—an anomaly for the cultivation hypothesis—can be explained as resulting from the arguably functional role played by television in the lives of persons who are isolated and who use it for companionship.

(3) *Status inconsistency.* Research on what sociologists and social psychologists have called "status inconsistency" suggests that individuals who occupy different social statuses considered mutually incongruous by others experience role strain, status ambivalence, and high anxiety (see Jackson, 1962). High-status, high-income, and high-education individuals who view television heavily can be considered status inconsistent, as can low-status, low-income, or low-education individuals who do not watch television or who watch very little. Our examination of the NORC data suggests that much of the "effects" found at both ends of the viewing spectrum are found among individuals in status-inconsistent categories.¹³ This frame of reference runs contrary to that which argues for universal across-the-board effects in that it places emphasis on the mediation of television's impact by social experiences which have been found to be relevant to levels of personal stress. It likewise predicts that patterns for specific subgroups should not emerge on the basis of simple demogra-

phic identification, but again, according to these same experiences whose nature and influence are more complex.

NOTES

1. The General Social Survey of the National Opinion Research Center is a battery of survey questions on attitudes administered annually to a national probability sample of approximately 1500 respondents, aged 18 and over. The entire dataset contains nearly 500 questions, many of which are asked each year. An item on the number of hours per day respondents regularly watch television was included in the survey for the years 1975, 1977, and 1978. Combining the samples for these years yields a total of 4536 respondents, who constitute the basis of much of Gerbner et al.'s analysis as well as our reanalysis. The dataset is described in greater detail in Part I of this report (Hirsch, 1980).

2. The question asked of respondents was: "On the average day, about how many hours do you personally watch television?" Gerbner et al. use the following coding scheme: light viewers, 0-2 hours; medium viewers, 3 hours; heavy viewers, 4 or more hours. In Part I of this report (Hirsch, 1980), we used the following coding scheme to analyze responses of nonviewers and extremely heavy viewers: nonviewers, 0 hours; light viewers, 1-2 hours; medium viewers, 3 hours; heavy viewers, 4-7 hours; extremely heavy viewers, 8 hours or more. In this second part of the report, we confine ourselves to the coding using by Gerbner et al.

3. A variety of other grounds upon which such personal identifications might be based include the following possibilities. Television characters are exposed to a myriad of travails, and many viewers may identify with those who appear to face adversities similar to their own. These television characters need not necessarily be of the same age, race, or sex as the viewer for such personal identification to take place (where it occurs at all). The actual dramatic setting may not be germane, so long as the television characters face conflicts, dilemmas, and challenges which are in some way analogous to those of the viewer. Alternatively, where programs utilize extensive character development, many viewers may simply feel a bond to characters whose personalities are most like their own. The importance of the cultural and historical setting may also be highly variable. Some viewers may find little to identify with in dramas which are set in cultures or historical periods other than their own. In a western or pirate movie, then, the fact that most of the violence befalls white males may be irrelevant to the white males in the audience who could scarcely imagine themselves on a pirate ship in the Caribbean or in a barroom brawl at the Last Chance Saloon. On the other hand, it is arguable that many of television's historical or exotic characters actually exhibit sensibilities, personality traits, and behavior designed to make them intelligible, if not clearly similar to, modern, middle-class Americans (e.g., *Mork and Mindy*). Accordingly, many viewers may find it quite easy to identify with characters whose daily lives bear little superficial resemblance to their own. Gerbner et al. sum across all such differences in order to construct a census of all television characters, outside the context of the programs in which they appear. This strategy carries

an assumption that viewers watch television in a similar manner. This may or may not be warranted, for very little is known which would allow us to say anything authoritative about how and if viewers actually *do* develop identifications with television characters (Hirsch, 1980b).

4. It is impossible to break out the demographic counterparts of "good" and "bad" men and women so far as real-life respondents to the NORC (or any other) surveys are concerned. Black men are included in this section for comparison purposes even though, despite Gerbner et al.'s findings that they are at greater than average risk, they do not appear in either the top or bottom ten rankings of the Violence Profiles' "killer-killed" or "violent-victim" ratios. While "old men" rank higher than black men for both the commission of violence *and* likelihood of being killed, we cannot see how these contrary portrayals enable predicting an expected direction for the "cultivation effect." The former could reduce fear, while the latter would increase it; hence, "old men" are excluded here as one of the victimized subgroups.

5. A total of 18 items makes up this list. Each question's wording is discussed and detailed in Part I of this article.

6. See the description of these items, both earlier in this part and in Part I of this article.

7. Gerbner et al. (1980) suggest that television's violent imagery provides urban residents with a "double dose" of fear, and that crime is more "salient" for city dwellers than suburbanites. Whether television portrayals of those killed or victimized actually result in higher risk rates for urban residents, however, is not reported in their Violence Profiles. Most programs and their victims, by our estimate, are situated in urban areas. Hence, our suggestion that the higher fear levels of city residents conform to what television portrays is based on what we assume and infer would appear in the content analysis, if this variable had been coded and reported.

8. As we shall see, this explanation does appear and is subsumed under their reformulation 3, called "resonance," when television content is said to reinforce these subgroups' own predispositions, if not experience. When the direction of heavy viewers' answers is incompatible with what television portrayals of their subgroups would predict, i.e., the percentage differences *depart* from predictions based on Gerbner et al.'s content analysis, the concept of "mainstreaming" (reformulation 2) is brought forth to claim this outcome *also* supports the cultivation hypothesis.

9. Light viewers holding extreme positive views are analogous to a roll of 1 or 2 on a die. By requiring that light viewers in a subgroup start out with extreme (i.e., "divergent") attitudes in order to be selected as candidates for a "mainstreaming" table, Gerbner et al. put forth a hypothesis with an unusually high probability of being confirmed by chance. The probability that on the next throw the number will be higher is strong (.66). Conversely, light viewers holding extreme negative attitudes are analogous to a roll of 5 or 6 on a die, with a correspondingly high probability that the number will be less on the next roll.

10. For subgroups whose attitude(s) differ significantly from those of the general population, one could then formulate a testable hypothesis to learn if the attitudes of heavy viewers in that category are closer to the general population's than are those of light viewers. If so, they would be "mainstreamed" and possible

explanations for why this should be so and what it says could be adduced. Preliminary tests of such a design on the NORC dataset yield no such relationships.

11. Respondents under the signs of Cancer, Leo, and Virgo are significantly more likely to fall into the category of heavy viewers.

12. The item in the NORC dataset on respondents' daily radio listening was coded in the following way: light listeners (0-1 hour), medium listeners (2-5 hours), and heavy listeners (6 hours or more). Single controls for age, sex, and education were applied respectively in the same way Gerbner et al. did in *Violence Profile No. 9* (1978). The strongest results were found between radio listening and percentage feeling that "officials running the country don't care" and percentage feeling that "most people would take advantage of you if they got a chance." The relationship was also strong for the "mean world" index, of which the latter item is a component. For these questions, nearly all "cultivation differentials" were positive and more than half the gammas are statistically significant. These results, in fact, when presented in tabular form, bear a striking resemblance to many of the tables which Gerbner et al. have reported in support of the cultivation hypothesis, the only difference being that the independent variable is radio listening rather than television viewing. Of course, we do not wish to argue on the basis of these data that radio listening "cultivates" feelings of anomia or suspicion. We report them, rather, because they illustrate very powerfully the perils of making causal inferences from the kind of correlational analysis which Gerbner et al. have done. Moreover, these findings undercut the strong assertions made by Gerbner and Gross (1976a: 174-177) as to the manifestly "unique" power of television in comparison with other mass media.

13. For example, controlling for respondents' health frequently generates interesting patterns. Although we have not examined all possible combinations, we have found that, with some regularity, affluent respondents who report their health as either "fair" or "poor" show "cultivation effects" much greater than those of other groups. Following the status-inconsistency hypothesis, one could argue that for these respondents, inability to reconcile one's dominant status (affluence and social power) with that of ill health and incapacitation produces a response of high anxiety and alienation. These responses, while associated with heavy viewing, are induced by the (prior) states of ill health and affluence. In terms of any causal model, the correlation between heavy viewing and these respondents' provision of "television answers" is spurious and cannot be interpreted as support for the hypothesis.

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