Selective Exposure To Television: Predicting Inheritance Effects From VCR and Cable Penetration

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For more and more people, deciding what to watch on television is becoming a more selective process because of the advent of new media technologies such as premium cable channels, remote control channel changers and the videocassette recorder (VCR). The implications are significant. Many of them are practical concerns for mass media practitioners.

It is rare to find a discussion of the plight of over-the-air broadcasting that does not identify VCRs and cable TV as agents of change in prime time television (e.g. Giltenan, 1988). The decline of the present television network system has been an area of scholarly attention (Atkin & Litman, 1986). There is a related interest in remote control "flipping" (Ainslie, 1988; Walker & Bellamy, 1989) and VCR zipping/zapping of commercials (Heeter & Greenberg, 1985; Metzger, 1986; Yorke & Kitchen, 1985).

There also have been theoretical concerns. Zillmann and Bryant (1985) complained that research on selective exposure has been "scarce, sporadic, and eclectic". Perhaps the reasons for little success in uncovering selective processes in the viewing of television is that the average viewer as recent as 1985 had fewer choices and fewer ways to make those choices.

One way of approaching the problem of viewer selectivity involves the measurement of viewer inertia between television programs, known as inheritance effects (Goodhardt, Ehrenberg, & Collins, 1975; Wakshlag & Greenberg, 1979). Inheritance effects are defined as the degree to which the audience watches two or more consecutive programs on the same television channel (Boemer, 1987; Rust and Eechambadi, 1989, Tiedge & Ksobiech, 1986; Webster, 1985).

Most researchers agree that viewer inertia is a sign of audience passivity (e.g., Goodhardt et al., 1975). If that assumption can be made, then the converse may also be true: the selectivity of television audiences can be measured by "active" decreases in viewer inertia, or inheritance effects. Rather than show that the audience is "active" or "selective" per se, this study used measures of passivity (inheritance effects) to see if changes in choice-facilitating variables (e.g., VCR and cable penetration) pointed to increased viewer selectivity.

The major assumption of this study was that strong inheritance effects between pairs of television programs represent: (1) low selectivity, (2) a passive audience, and (3) high viewer inertia. The hypothesis of this study was that the new media environment (Webster, 1986) enhances selective exposure to television.

Using multiple regression, this study attempted to determine which variables predict inheritance effects, what strength each predictor exerts, and the direction of the prediction. The direction is the most important result because it supports or rejects the expected impact of new media environment variables on viewer selectivity as reflected by inheritance effects. Negative beta weights on the predictor variables were expected to show support for the main hypothesis that *media diversity leads to mere selectivity.* This study analyzed both main effects and interaction effects.

Method

The dependent variable was the inheritance effects of four types of programs. Kirsch and Banks (1962) found an inheritance effect among six program types distinguished by a particular network. Tiedge and Ksobiech (1986) found eleven generic program types, but this study collapsed several categories into four: situation comedy, drama, news/information/talk, and quiz/game.

The independent variables for each market included: VCR penetration, cable penetration, and the number of independent (non-network) television stations. Remote control penetration information was not included because of its unavailability on a market -by- market basis. However, regional data from A.C Nielsen suggest that such penetration is linked to VCR penetration (Staff, 1989) and lacks variability.

The unit of analysis was the television market as designated by

Arbitron (N=212), referred to as an area of dominant influence (ADI) representing clusters of the national TV population. Measurement takes place four times each year: February, May, July, and November. To control for audience availability (Gensch & Shaman, 1980; Webster & Wakshlag, 1983), the four rating periods were averaged in this study (representing percentage of all sets) to hold seasonal differences to lower limits.

Measurement of the four types of programs used the four most popular shows of their genre: The Cosby Show, Murder She Wrote, 60 Minutes, and the syndicated Wheel of Fortune. Popularity was measured by inspecting the top-ten list of television programs (network and syndicated) in Broadcasting magazine for the weeks measured in the four rating period. Data were gathered for the most recent one year period at the time of data collection. This encompassed four rating periods: May 1988, July, 1988, November 1988, and February 1989.

The inheritance effect of program-pairs has been previously operationalized as the correlation between a program's lead-in share and the share of the program itself (Tiedge & Ksobiech, 1986; Walker, 1988; Davis & Walker, 1990). Although previous studies were able to use statistical correlation because of attention to average inheritance effect using several program-pairs as a unit of analysis, this study sought to make within-unit comparisons where correlations are impossible (N=1). An alternative method measuring program strength as a ratio of the second show to the first show was used.

Each television show was analyzed along with the show that followed it on the station's schedule. An inheritance score was calculated for each pair of programs by dividing the share of the second show in the pair by the first show and multiplying times 100. For example, if The Cosby Show received a 50 share and A Different World posted a 40 share, the resulting inheritance score was 80 (or 40/50 x 100). The lowest possible score was zero. When the second show "inherited" more viewers than it was delivered by the program being studied, the inheritance score was frozen at 100. Program ratios more than 1.0 were disallowed because the preceding show could not deliver more than 100% of its audience share: growth in program shares comes from factors other than the inheritance effect. This strength ratio (called an inheritance score) is a compromise between

previous methods and the problematic use of different scores. This study regressed the inheritance scores on the three independent variables.

Results

One problem with multiple regression is multicollinearity, where the predictor variables have intercorrelations that are too high (Pedhazur, 1982). Table 1 shows that this was not a serious problem among the variables.

Table 2 shows the standardized beta weights for the three-variable regression model for the average and individual rating periods. Except for Wheel of Fortune, the direction of the significant beta weights was in the hypothesized negative direction. Murder She Wrote showed the strongest anticipated effect of new media variables on inheritance scores, with The Cosby Show a close second. 60 Minutes was particularly susceptible to the influence of VCRs, while cable penetration influenced The Cosby Show.

There were some distinct differences related to the time of year in which the measurement took place. In the November and February rating periods, when prime time programs receive their first showing, the effects were more pronounced. In May and July, however, weaker effects were present. Again, the main exception was Wheel of Fortune, whose inheritance scores were positively influenced by the presence of the VCRs.

The single most important independent variable in the regressions was VCR penetration. It was the most resilient to the time of year and most consistent in its directions, depending on the program. However, the number of independent stations was a major influence on Murder She Wrote, possibly due to the impact of two strong programs on the Fox network which relies on many independent stations for delivery of its programs. The same cannot be said for 60 Minutes which leads into Murder She Wrote also on CBS on Sunday night.

Table 3 show the standardized beta weights for the interactions among pairs of the three independent variables. Although there are only 11 significant interactions out of a possible 75, some of them were quite revealing. For example, there were no main effects of 60 Minutes by the number of independents, until combined with VCR

Table 1
Descriptive Statistics
4 Rating Period Average

	Mean	S.D.	Kurtosis	Skewness		Range	N
Cable Penetration	57.52	10.42	-0.38	0.3	36	87	212
VCR Penetration	60.17	6.29	0.13	0.22	46	79	212
Number of Independent Stations	5.81	3.27	0.44	0.77	0	17	212
60 Minutes Inheritance	83.56	6.91	-0.13	-0.27	63	98	184
Cosby Show Inheritance	85.62	5.15	0.35	-0.3	67	99	187
Murder She Wrote Inheritance	77.77	7.08	0.32	0.09	58	98	184
Wheel of Fortune Inheritance	81.78	15.99	-0.5	-0.83	44	100	198

Intercorrelations:

	% CABLE	INDEPENDENTS
% VCR	-0.025	-0.266
% CABLE		0.363

Table 2
Standardized Beta Coefficients for Primetime Television Programs

Dependent Variable: Inheritance Score

Independent Variables: (a) VCR Penetration
(b) Cable Penetration
(c) Number of Independents

	60 Minutes	Cosby Show	Murder She Wrote	Wheel of Fortune
May-88	**(a)-.19**	-0.09	0.05	**0.24**
	(b) -.01	**-0.25**	0.02	0.09
	(c) -.01	-0.11	-0.05	0.12
	2.3	**4.47**	0.29	**6.04**
Jul-88	**-0.23**	0.19	0.07	**0.24**
	0.09	0	-0.06	0.08
	0.07	0.15	**-0.23**	0.13
	3.07	1.52	**4.21**	**6.93**
Nov-88	-0.16	-0.15	**-0.21**	0.11
	0.05	-0.13	-0.02	0.07
	-0.01	-0.07	**-0.21**	0.14
	1.85	3.09	**7.82**	2.82
Feb-89	-0.16	**-0.19**	-0.17	0.16
	0.05	-0.15	-0.12	0.04
	0	0.02	**-0.34**	0.14
	1.79	**3.7**	**13.4**	**4.09**
Average	**-0.25**	-0.11	-0.13	**0.21**
	0.07	**-0.2**	-0.07	0.05
	0.03	-0.03	**-0.34**	0.16
	4.13	3.35	**11.46**	**6.7**

See May 1988 (60 Minutes) in upper left corner of table for legend.
$p < .05$
$p < .01$

Table 3
Standardized Beta Coefficients for Interactions

Dependent Variable: Inheritance Score

Independent Variables: (a) VCR Penetration X Cable Penetration
(b) VCR Penetration X Numbers of Independents
(c) Cable Penetration X Number of Independents

	60 Minutes	Cosby Show	Murder She Wrote	Wheel of Fortune
May-88	(a) -1.01	0.02	0.96	0.32
	(b) -1.74	-0.1	-0.22	-1.15
	(c) .24	-0.56	-0.38	0.85
Jul-88	-0.74	-1.03	-0.55	0.28
	-0.108	-0.09	0.61	-0.66
	-0.56	-0.43	-0.73	0.67
Nov-88	-0.12	-0.02	-1.49	1.02
	0.7	-0.25	-0.01	-1.65
	0.24	0.07	**-1.09**	0.76
Feb-89	-0.21	-0.88	-0.69	1.38
	-1.62	-0.13	0.17	-0.5
	0.08	-0.61	-0.56	0.79
Average	-0.95	-0.58	-1.15	0.8
	-1.7	-0.54	0.19	-1.41
	-0.07	-0.44	**-0.98**	**1.15**

See May 1988 (60 Minutes) in upper left corner of table for legend.

$p < .05$
$p < .01$

penetration. The negative beta weight for the average 60 Minutes increased its magnitude from .25 for VCR penetration alone to 1.70 for the interaction of VCR penetration and number of independents. Moreover, two weak and insignificant variables (VCR penetration and number of independents) showed a strong -1.65 interaction for Wheel of Fortune in November 1988.

The interaction for the average Murder She Wrote showed a substantial increase due to cable penetration (which had tiny insignificant beta weights) and number of independents (previously one-third of the interaction beta weight). The same interaction for the same program was even more pronounced in November 1988.

Discussion

This study sought to find support for the idea that television viewers, when given the means to actively avoid sequential prime time programs, are more selective in the programs they choose. Since the unit of analysis was the television market, it can only be assumed that the findings given in the last section reflect what people in individual households were doing. The hypothesis — that the new media environment enhances selective exposure to television — was supported. The direction was frequently negative, suggesting an inverse relationship between the new media variables and inheritance effects. Although the direction occasionally strayed, its relative consistency is noticeable nevertheless.

The suspicion that such effects vary with the time of the year in which the rating period occurs was also confirmed. This finding partially validates the research of Gensch and Shaman (1980). It also coincides with popular views of audience flow among media practitioners (Miletic, 1988).

Significant interaction effects for cable penetration and number of independents show that either variable is not best understood by itself. This conclusion is problematic, however, because the two conditions which exhibited the interactions may have been atypical. Murder She Wrote had been scheduled opposite two highly-rated shows being broadcast by independent stations. Also, the significant interactions for Wheel of Fortune are in the unhypothesized direction (positive beta weights). On the other hand, the interactions for VCR penetration and number of independents were often quite strong. This

is especially true for Wheel of Fortune, whose main effects were notably weak or in the unhypothesized direction.

Nevertheless, the implications of this research are clear. If audiences are becoming more selective, the small ripples detected by this study can be expected to grow as new technologies continue to diffuse. Armed with their VCRs, cable channels and other non-network options can weild their remote controls to avoid all varieties of news, public affairs, children's programs, and other programming.

Previous researchers (e.g., Webster & Wakshlag, 1983; Henry & Rinne, 1984; Tiedge & Ksobiech, 1986) have suggested that program type is an important consideration for inheritance effects. This study showed that the news category was influenced by VCR penetration more than the other three categories, for example. Specifically, top-rated news magazine programs like 60 Minutes showed significant effects from VCR penetration. Klopfenstein (1989) found a .16 correlation ($p < .001$) between VCR ownership and the self-reported frequency of recording news magazine programs. This study tends to validate his research in suggesting a relationship between the presence of VCRs and the watching of news magazines like 60 Minutes.

The networks continue to make program decisions based on inheritance effects and audience flow. An example from the 1989-90 season was the cancellation of the weekly show Chicken Soup which followed Roseanne on Tuesday nights on ABC. The latter program had been in the top three network programs since early 1989, so the network had high expectations for Chicken Soup. But in its final week on the air, it contributed to Roseanne an inheritance score of only 68.6, while all but one of the other program pairs involving the lead-in of a top thirty show resulted in inheritance scores in the 85 to 100 range. The network apparently felt that the strong lead-in was being wasted on a marginal program. As a result, the top-rated new show of the 1989-90 season, consistently in the top twenty, was cancelled for having an inadequate audience.

The success or failure of new network programs is determined by a national sample of Nielsen homes, not an aggregate of individual markets with varying amounts of new technologies such as cable television and home video. The results of this study have suggested

how VCR and cable penetration have a negative effect on inheritance scores. Perhaps the networks should consider the impact of such new media influences on the reliability of the inheritance effect. Apparently, a program's lead-in is also subject to increasing viewer selectivity in the presence of cable and VCRs. The growth during the 1980s in the number of independent stations has also contributed toward less certain audience flow from program to program.

How much difference will the new media environment make as cable and VCR penetration continue to grow? Time will tell, but this study suggests that the inheritance effects should decline further as new technologies diffuse.

There is a need for further investigation of the different types of shows. Tiedge and Ksobiech (1986) used eleven types, but this study only explored four. There may be stronger (or weaker) beta coefficients for other types of programs. One could question whether news programs are subject to the strongest impact of new media variables on inheritance scores or whether such shows are only the most notable of the four studied here.

Furthermore, there needs to be research on the content of programs, since it may well account for a good deal of the variance in inheritance effects left unexplained by this study. Such research needs to go beyond the relative convenience of secondary analysis in order to gather the qualitative data necessary for testing the possible hypothesis that content is the strongest predictor of inheritance effects.

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