Program Impact:
The Key Measure
of Audience Response

by Donna L. Hoffman

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The quantitative ratings and accompanying descriptions of audience composition available today are used in a number of ways by executives in the television and advertising industries to make programming and commercial decisions. A situation analysis of the status of audience assessment (Hoffman, 1984) reveals that these traditional ratings are woefully inadequate for the task they have been put to.

The ratings deliver a house count, by age and sex, of who (actually, how many households) is watching. Nothing more. They provide no information as to whether audiences pay attention to what they view, like what they view, or engage in other behaviors besides viewing during television watching.

There is a growing body of research that suggests that the television audience is not the passive, fully attentive and engaged set of viewers the industry thinks it is. The purpose of this paper is to demonstrate that television ratings alone do not convey the full variability in audience response to programs.

The very hypothesis that audiences react to the programs they see on television assumes the existence of an evaluative component in the response. Therefore, it would be desirable that any index purporting to measure "program popularity" contain such a component. The traditional,

quantitative ratings measure levels of channel viewing cross-tabulated by age and sex categories. While this information is unquestionably useful, it does not provide an assessment of audience attitudes toward programs, nor can it be accepted as a substitute for the fine-grained knowledge of how viewers actually behave during the viewing of programs.

This research injects the notion of a subjective, evaluative component into audience reaction to television programs. This notion is translated into an assessment of program ratings that considers attitudes and behaviors in addition to the quantitative ratings. Conventional wisdom has it that if viewers "watch it, they like it." This wisdom is challenged with the suggestion that watching and liking of television programs are actually related in a much less direct and far more complex fashion. Three key research questions are explored in this paper:

1. What are the qualitative dimensions of audience response to programs and how do television programs differ on these dimensions?

2. How do the important dimensions of audience response relate to the traditional, quantitative program ratings?

3. Finally, how do these dimensions relate to (self-reported) overt viewing behaviors?

The assumption that programs with high ratings deliver high levels of appreciation to their audiences is questioned in this paper. It is suggested that quantitative ratings may

not convey enough information about audience likes and viewing habits and that qualitative information may be needed to provide a more complete picture.

The examination of actual behaviors engaged in during television viewing is an important step in this process. Today's television viewers have many demands on their time and household activity levels may easily interfere with viewing. The traditional ratings systems count these viewers, assuming that to watch is to like. Yet, are these viewers really watching (and liking), or is the television simply a "trixing lamp," as Elizabeth Roberts (1982) has suggested?

Methodology

The data from an audience analysis study conducted by Television Audience Assessment, Inc. (TAA) in June of 1981 were employed in this investigation. During the ten-day period spanning Sunday, June 21 through Monday, June 29, 1981, TAA conducted a ten-minute telephone coincidental survey of 1,585 viewers in the Springfield, Illinois Area of Dominant Influence (ADI)[1]. The interviews were conducted over seven days, from Sunday, June 21 through Thursday, June 25 and then again on Sunday, June 28 and Monday, June 29.

Respondents were asked about their opinions and behaviors during a prime-time television program they had been

or were currently viewing. Over fifty variables were measured by TAA in their survey questionnaire. These included viewers' reactions to the programs they saw, behaviors they engaged in during viewing, and a number of demographic characteristics.

Each respondent called was asked about a television program telecast during the second half-hour of the preceeding hour. For example, an individual called at 8:35 was asked about the program watched between 7:30 and 8:00 p.m. that evening. The procedure was repeated during each successive prime-time hour. If an individual had not watched a television program in the appropriate time period, then he or she was not included in the sample (see Roberts and Lemieux, 1981 for a complete discussion of the sampling methodology).

The entire data base of 1,585 viewers was split into two samples so that the major findings of the investigation could be replicated. All results reported in this paper use the "analysis" sample. See Hoffman (1984) for a complete report of the analyses involving the "holdout" sample.

The analysis sample contains 661 individuals who collectively viewed 31 television programs. The distribution is displayed in Table 1.

Insert Table 1 about here

The thirty-one television programs along with their respective
sample sizes are listed in Table 2.

Insert Table 2 about here

The Dimensions of Audience Response to Programs

Construction_of_Three_Composites

Eight variables that measure viewer response to the
programming seen on the evening of the survey are included in
this study. These variables record the variety of reactions
and attitudes viewers had toward the particular program they
viewed.

Variable Name   Acronym

Anticipate   ANTICPTN
Enjoyment   ENJOY
Feeling   FEELING

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Get More              ELSE
Grade                 GRADE
Learn                 LEARN
Plan Ahead            PLAN
Upset if Missed       TOMORROW
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"Anticipate" measures whether the program was looked forward to or not and uses a two-point yes/no scale. "Enjoy" uses three points to record the degree of enjoyment the respondent experienced from the program, ranging from not much to very much. "Feeling," a yes/no item, taps whether the program touched the respondent's feelings. "Get More" is a binary item measuring whether the respondent watched the program as a "way to pass the time" or to "get something more" from it. Respondents assigned a "grade," "like they give in school," to the program they had viewed, thus judging their level of appreciation or satisfaction with the program. "Learn" records whether the respondent learned anything from the program and is a yes/no item. "Plan" indicates how the program viewed was selected: did the viewer choose to watch the program after he or she learned it was on or did the viewer plan ahead to see it? "Upset if missed" allowed the respondent to indicate whether he or she would be upset if, given that the program was on tomorrow, it was missed. The search for qualitative dimensions of audience response to programs began with the definition of three constructs hypothesized to represent audience response to programs. These constructs are Program Intent, Program Impact, and Program Appreciation. The variables comprising each construct are:

Intent	Impact	Appreciation
Anticipate	Feeling	Enjoy
Plan Ahead	Learn	Grade
	Get More	
	Upset if Missed	

Program Intent measures the behavioral intention to view the television program. This construct captures how much the person was "motivated" to see the program. Strength of intention is operationalized in terms of whether the show was anticipated or not ("Anticipate") and whether the viewer planned ahead to watch it ("Plan Ahead"). Inclusion of Anticipate as a variable in this construct is reasonable because a program cannot be anticipated unless the viewer knows that it is on. Therefore, a high level of anticipation, along with a prior plan to see the program implies a strong degree of behavioral intention to see the show.

The next construct of interest is Program Impact. What effect does a particular program have on a viewer? Does it grab viewers or leave them flat? Here, Impact is hypothesized to tap the emotional and intellectual aspects of viewing. A program's impact depends on whether it touches the viewer's feelings ("Feeling"), whether the viewer learns from it ("Learn"), whether the viewer watched it as a way to pass the time or to get more from it ("Get More"), and whether the viewer would be upset if it were missed ("Upset if Missed"). Based on this definition, Impact measures both affective and cognitive components of viewing.

Finally, Program Appreciation represents the

favorable-unfavorable component of audience response to programs. The enjoyment an individual derives from a program ("Enjoy") and the "Grade" he or she gives it conceptualize Program Appreciation. This construct captures how much appeal the program has. It can be thought of as an overall measure of liking for the program. It is similar to an attitude (Fishbein & Ajzen 1975) in that it specifies the direction of the evaluation of the program. However, it must be pointed out that this is strictly an empirical definition of program attitude.

These three constructs form the primary measures of audience response to programs. The construction of composite variables based on these constructs is described in the next three sections. The method of discriminant analysis was used.

Program Appreciation

A discriminant analysis of the 31 television programs using the two audience reaction variables Enjoy and Grade was performed with the SAS procedure CANDISC (SAS Institute, Inc., 1982). Table 3 contains the results of this analysis.

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Insert Table 3 about here

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The canonical correlation between ENJOY and GRADE and the first discriminant function is 0.34. This function is statistically significant (Wilk's lambda = 0.8449, $F(60,1258)$ = 1.8429, p = 0.0001. This F-statistic for Wilk's lambda is exact.). The within canonical structure values are the within-class correlations between the canonical variable of Program Appreciation and each original variable. These correlations show that GRADE is the primary contributor to discrimination among these 31 programs. The standardized canonical coefficients, when applied to the original standardized variables, yield a canonical variable with unit within-class variance. The raw canonical coefficients yield a canonical variable with unit within-class variance when applied to the original unstandardized variables. The raw coefficients were used to obtain the composite variable of Program Appreciation from the original variables ENJOY and GRADE.

The standardized canonical coefficients offer further support for the interpretation that Program Appreciation is defined primarily by GRADE and that ENJOY contributes essentially nothing to this composite. (Nevertheless, ENJOY is included in the linear combination.) The composite for Program Appreciation, in terms of the standardized weights is:

Appreciation = 1.09*GRADE - 0.09*ENJOY.

The television program group centroids (class means) on the composite of Program Appreciation are informative, though flawed, measures of appreciation and cannot be taken directly as values on a scale of Program Appreciation. This is because the group centroids reflect neither the variability within each program group nor the sample size on which the score is based. To remedy this situation, t-scores were calculated for each program group by dividing each group centroid by its standard error:

$$t\text{-score} = \frac{m}{s/[n]^{.5}} ,$$

where m = program group centroid,
s = standard deviation of group centroid, and
n = program sample size.

These t-scores are displayed in order of increasing magnitude in Table 4.

Insert Table 4 about here

The t-scores have a number of important advantages over the group centroids as Appreciation scale values for each program. First, these scores have been adjusted for both the

sample size of each program and the variability within each group of viewers. More important, the t-scores give us information the centroids cannot; viz. the degree to which the programs actually differ from the mean of the Appreciation scale. In essence, the t-scores are an approximate statistical test of the null hypothesis that the program appreciation score is zero. T-scores greater than 2.00 in absolute value are significant at approximately the 0.05 level. Only 9 of the 31 programs on the Program Appreciation scale have values that are statistically different from zero.

The Last Convertible, Napolean & Samantha, the first hour of Dummy, 60 Minutes, The White Shadow and ABC Close Up have significantly high Program Appreciation scores, while the second hour of Mahogany, Tim Conway and House Calls have significantly low Program Appreciation scores.

Program Impact

A similar discriminant analysis was performed for the four variables comprising Program Impact. Recall that Program Impact is hypothesized to be a function of FEELING, LEARN, ELSE, and TOMORROW. The results are displayed in Table 5.

Insert Table 5 about here

The first canonical correlation (r=0.50) is significantly different from zero (Wilk's lambda = 0.6248, F(approx)(120,2495.1) = 2.6115, p = 0.0000). Inspection of the within canonical structure reveals that learning something from a show (LEARN) and watching it as a way to get more from it (ELSE) contribute most to discrimination among these programs.

From the standardized canonical weights, one can see that FEELING has relatively little weight in construction of the composite, and that LEARN, ELSE, and TOMORROW are all weighted about equally. The composite of Program Impact, in terms of these standardized weights is:

$$Impact = 0.24*FEELING + 0.59*LEARN +$$
$$0.50*ELSE + 0.55*TOMORROW.$$

The Program Impact composite was constructed using the raw canonical coefficients.

The program t-scores are displayed in Table 6.

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Insert Table 6 about here

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Fifteen programs have scores that are significantly different from zero on the scale of Program Impact. The Waltons, the second hour of Dummy, Little House, the first hour of Dummy, the second and first hours of Roots, ABC Close Up and 60 Minutes are significantly high in Program Impact. Conversely, Bosom Buddies, Facts of Life, Hart to Hart, House Calls, Charlie's Angels, Tim Conway and Magnum are significantly low on the Program Impact scale.

Program Intent

The discriminant analysis of the 31 programs using ANTICPTN and PLAN is summarized in Table 7.

Insert Table 7 about here

The first discriminant function is significant with a corresponding canonical correlation of 0.34 (Wilk's lambda = 0.8521, $F(60,1258) = 1.7470$, $p = 0.0005$. This F-statistic is exact.). The within-cell correlations of the variables with the composite of Program Intent suggest that looking forward to the program (ANTICPTN) is the greater contributor to discrimination, though planning ahead (PLAN) also contributes

heavily. The standardized weights give the same picture. The composite for Program Intent was constructed from the raw canonical coefficients. In terms of standardized values, Program Intent is:

Intent = 0.69*ANTICPTN + 0.52*PLAN.

The program t-score values on the composite of Program Intent are listed in Table 8.

Insert Table 8 about here

Only six programs have scores differing from zero on the new composite variable of Program Intent. Two shows are significantly high on the scale: 60 Minutes and Little House. ABC Close Up, God's Children, Charlie's Angels and Tim Conway are significantly low on the scale of Intent. As is evident from this composite, most viewers do not plan ahead, nor look forward to the shows they watch on television.

Correlations Among Audience Response Measures

The bivariate correlations among the three composites of audience response, using the program as the unit of analysis (i.e. n=31), are:

	Intent	Impact	Appreciation
Intent	1.00		
Impact	.40 (0.02)	1.00	
Appreciation	.30 (0.10)	.76 (0.0001)	1.00

If a program is judged high in impact by its audience, then it also tends to be highly appreciated. Conversely, programs that are low in impact are also not well appreciated. This relationship is depicted graphically in Figure 1.

Insert Figure 1 about here

The relationship between Program Appreciation and Program Intent is less neat. Programs which viewers intended to view are reasonably well appreciated, though shows which viewers did not intend to view (the most notable being ABC Close Up) are also appreciated. Inspection of the bivariate

scatter plot of Intent versus Appreciation (see Hoffman, 1984) suggested that the program ABC Close Up is an outlier. For purposes of exposition, it was deleted from the analysis; the correlation between Appreciation and Intent rises to 0.53 (p=0.003) after this adjustment. This finding suggests that shows which audiences intend to view are more appreciated than shows which audiences just "happen" upon. Naturally, this may only imply the discovery of a consistency bias: if viewers say they intended to watch a program, then why would they say they did not appreciate it. Of course, it may be that viewers anticipate only those shows they appreciate, though it is entirely possible that an audience will appreciate a show it had no intention of viewing (ABC Close Up being a case in point).

The moderately positive relationship between Program Impact and Program Intent reveals that programs high on Intent, exhibit, for the most part, high Impact. Again, ABC Close Up, due to its extreme Intent score, may be considered an outlier in this relationship. Magnum may also be considered an outlier: it is above average on Intent, yet extremely low on Impact. If these two shows are deleted from the analysis, then the correlation between Intent and Impact rises to 0.64 (p=0.0002) — a considerable improvement.

No claims are made as to causal connections, except to note that an intention to view necessarily preceeds actual viewing, though intentions may be affected by experience with the program on prior occasions. Audiences intend to watch shows they appreciate and are affected by, and shows that have

a high impact on them are highly appreciated. Though knowing individuals' intentions to view a program may not enable precise prediction of whether they will find it satisfying, knowing that the program had on impact on them allows reasonable confidence in the claim that they appreciated it, too.

A Discriminant Space of Television Programs

In this section, the differences among programs on the three composites of audience response are examined graphically. This was done by performing a discriminant analysis of the eight original variables of audience response and then fitting the three composites along with the original variables into the discriminant space. This analysis provides not only a means of discovering which, if any, of these audience response measures discriminates well among programs, but also a "check" on the validity of the three individual discriminant analyses described above.

The results of the discriminant analysis of the eight original variables appear in Table 9.

Insert Table 9 about here

There are clearly two dimensions in the space of these
eight variables. This is an interesting result because the
original hypothesis held that there were three conceptually
distinct, though not necessarily independent, dimensions of
audience response to programs. Had the discriminant analysis
been performed only on all variables combined, the conclusion
may have formed that only two legitimate dimensions of
audience response existed. As will be evident graphically in
a moment, the discriminant analysis of all eight variables
combined produces two orthogonal dimensions (in the metric of
the within-cell error matrix) that are interpretable
considering the three dimensions of audience response
previously conceptualized. Performing a discriminant analysis
on each set of variables separately allows the construction of
the best possible composites in terms of those variables. In
this fashion, there is no requirement that the new variables
be uncorrelated. Indeed, there is no expectation that they be
uncorrelated. In this sense, the discriminant analysis serves
as an interpretive aid.

The first discriminant function is significant at p =
0.0000 (F approx(240, 4844.7) .= 1.9739, Wilk's lambda =
0.4853), with a corresponding canonical correlation of 0.51.
The within-cell correlations among the original variables and
the new functions show that the primary contributors to
discrimination on the first function are LEARN and ELSE, with

FEELING, TOMORROW and GRADE contributing somewhat less, in that order. ENJOY contributes in the negative direction. The standardized canonical weights assist in interpreting this function:

$$\text{First Function} = 0.56*\text{LEARN} + 0.52*\text{ELSE} -$$
$$0.30*\text{ENJOY} + 0.26*\text{FEELING} +$$
$$0.20*\text{GRADE} + 0.15*\text{TOMORROW} -$$
$$0.06*\text{ANTICPTN} + 0.01*\text{PLAN}.$$

Notice that this looks very much like the composite of Program Impact. Interestingly enough, the composite of Program Appreciation also appears within this function, though "impact" makes the strongest contribution to discrimination[2].

The second canonical function is statistically significant at the p = 0.0018 level of significance (Wilk's lambda = 0.6595, F approx(203,4269.9) = 1.323). The canonical correlation corresponding to this function is equal to 0.36. The primary contributors to discrimination on this function are PLAN and ANTICPTN in the positive direction, and FEELING in the negative direction. In terms of the standardized canonical coefficients, the second discriminant function can be written as:

$$\text{Second Function} = 0.50*\text{PLAN} + 0.46*\text{ANTICPTN} -$$
$$0.75*\text{FEELING} + 0.40*\text{LEARN} +$$
$$0.21*\text{ELSE} - 0.15*\text{TOMORROW} -$$
$$0.15*\text{ENJOY} - 0.27*\text{GRADE}.$$

This function closely resembles Program Intent with some hints of negative Impact and negative Appreciation[3].

The program group centroids on each discriminant function are displayed in Table 10.

Insert Table 10 about here

ABC Close Up, the first and second hours of Roots, the second hour of Dummy, Little House and 60 Minutes have large positive means on the first function. Magnum, Hart to Hart, Tim Conway, House Calls, God's Children and Charlie's Angels have moderately large negative means. Notice how similar the distribution of program means is on this function and the Program Impact composite.

On the second function, 60 Minutes and Lou Grant have reasonably large means in the positive direction, while ABC Close Up, God's Children, the second hour of Dummy, the first hour of Flamingo Road, Knot's Landing and ABC Movie are oriented in the opposite direction. This corresponds closely with the distribution of program means on the Intent composite.

This analysis produced two uncorrelated variates, while the analyses in the previous section do not. A particularly

interesting result emerges from this discriminant analysis:
Appreciation, or some variant of it, is not a primary
contributor to discrimination among these television programs
in either dimension. It seems clear from this analysis that
the impact a program has on the viewing audience, and not its
entertainment value, per se, determines the major direction of
discrimination among these television programs.

The discriminant space of television programs is
displayed in Figure 2.

Insert Figure 2 about here

So that a better interpretation of the space may be offered,
the eight original variables and the composites constructed
from these variables were fit into this space using the
within-cell correlations among them and the two discriminant
functions. These correlations are the cosines of the angles
between each variable and each function. Each variable is
represented by a vector in the discriminant space; the vector
length is proportional to the squared multiple correlation of
each variable with the two-dimensional discriminant space.
Table 11 lists these values.

Insert Table 11 about here

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In addition, the within-cell correlations among the _variables_ in the discriminant space are given by the cosines of the angles between them. Therefore, variables that form smaller angles with each other are more highly correlated than variables that form wider angles.

The Program Impact composite virtually coincides with the first discriminant function. Programs on the right side of the space are judged high in impact, while programs to the left are perceived by their audience to be low in impact. When the discriminant analysis of the four variables comprising Impact was performed, it was observed that FEELING had the least to do with that composite and LEARN the most. Now it can be graphically observed that Impact may actually possess two _differentiable_ components: _cognitive impact_ - measured primarily by LEARN and _affective impact_ - measured primarily by FEELING. Notice that programs that touch the audiences' feelings are not necessarily the same as programs they learn something from or watch as a way to get more from.

Though Appreciation is most closely aligned with the first dimension of discrimination, and negatively related to the second, it is not nearly as important a contributor to discrimination as Impact is. The variable GRADE is coincident with the composite of Program Appreciation, but the variable

ENJOY's contribution is essentially nil. It comes as no surprise that television programs that are high in impact are also highly appreciated, whether that impact is intellectual or emotional. The second dimension of the discriminant space can best be characterized by programs that viewers plan ahead to see, on the one hand, and by programs that touch their feelings, on the other.

The discriminant space of television programs can be divided into three more or less distinct regions and the following interpretation offered. Beginning on the lower right and moving counterclockwise, programs in this portion of the space, bounded by the vectors of FEELING and Impact are those:

- which touch viewer's feelings,
- which viewers appreciate, and
- which viewers judge to be high in impact.

These programs are high in _affective impact_.

Programs in the upper right portion of the space, bounded by the vectors of Appreciation and Intent are those which viewers:

- appreciate,
- judge to be high in impact, and
- plan ahead to view.

These are programs high in _cognitive impact_.

Shows in the left portion of the space, bounded by the second discriminant function, are those viewers:

- do not appreciate,

- judge to be low in impact, and

- do not plan ahead to view.

These are the low impact programs.

Programs in the two high impact regions of the space are what Barwise and Ehrenberg (1982) would call "demanding." Demanding programs are those that involve a greater effort on the part of the viewer in order to be watched. In their words:

> The theoretical interpretation is that the more demanding a program is, the more interesting and/or enjoyable it has to be (relative to more relaxing programs) before people will take the trouble to watch it. (p. 27)

They classified programs into two types based on content. Information programs included news programs, bulletins, and news magazines. Entertainment programs included everything else. Their findings suggest that information programs are more demanding that entertainment programs. Barwise and Ehrenberg also measured demandingness of programs by having each viewer indicate, for each program, either "It made me think" or "It helped me relax." Measured in this fashion, demanding programs included all the "hard" information programs like local and network news shows, election specials, and features and documentaries. On the average, 58 percent of the viewers of these programs said it made them think, while fourteen percent said it helped them

relax. Relaxing programs included all the entertainment shows like serials and movies, variety, game and quiz shows, the Winter Olympics, and the "soft" information shows like PM Magazine, World of Animals and Wild Kingdom. On the average, 55 percent of the viewers said it helped them relax and ten percent said it made them think. On the basis of these results they conclude that there is a "sharp discrimination between demanding and relaxing programs" and that this "ties in closely with [their] earlier classification by program title."

The distinction between demanding and relaxing programs, as they have defined it, is not quite as clear as they suggest. This is probably because their measure of demandingness — "It made me think/It helped me relax" — is not sensitive enough to truly differentiate among programs.

60 Minutes and ABC Close Up, being "information" shows, come closest to fitting into Barwise and Ehrenberg's categorization of demanding programs, yet the argument may be advanced that other, so-called "entertainment" type programs in the high impact region of the discriminant space also fit into this scheme. All the television programs in these regions require a commitment from the viewer. As Barwise and Ehrenberg have characterized it, they require more of the viewer, but they give back more in return:

> The greater the effort involved — e.g. for a very demanding program — the higher the gratification has to be to induce the viewer to bother to watch. Otherwise he will watch a less demanding alternative, even if it is also rather less rewarding. To overcome the attraction of the "least objectionable," a demanding program has to be

especially rewarding in order for the viewer to watch it." (p. 27)

This accounts for the location of the appreciation vector in this region of the space. The programs which have the highest impact are also found to be the most satisfying to the audience.

Though Barwise and Ehrenberg consider low demanding shows to be of the "entertainment" type, the current investigation suggests that other programs besides information types may be demanding; the graphical display makes this clear. Roots, Little House, Dummy, the Waltons — all require something of the viewer. These are not programs which an audience can casually view and say it has really watched. The programs in the low impact regions of the space fit in more with what Barwise and Ehrenberg would call "entertainment." These programs are not demanding, do not deliver on impact and consequently are not as highly appreciated as those that do. For the most part, these programs are situation comedies and action-adventure shows.

Inspection of the t-score means on the three composites of audience response, arrayed by levels of Program Impact, is highly illuminating. Fifteen programs had significant Program Impact scores, and sixteen could not be reliably determined. The means on each composite on plotted against the three program "types" of high impact, low impact and undetermined in Figure 3.

Insert Figure 3 about here

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High impact programs are more appreciated and looked forward to than low impact programs, by a wide margin. In fact, low impact programs are not appreciated nor anticipated in advance of viewing. High impact programs include movies, specials and family dramas for the most part. Situation comedies, action-adventure series, and some drama programs are primarily low impact.

This investigation has shown that "demandingness" and Program Impact can be considered one and the same. Program Impact is the measure of how much the viewer must give to the program in order to get something back. The "give" is most likely in the form of attention, the pay-off is in appreciation. Appreciation is the reward for the effort expended.

Classifying programs narrowly in terms of their so-called information/entertainment value misses the point. A program does not have to contain hard news to have an impact on the viewer. Further, two possibly distinct forms of impact have been identified: intellectual and emotional. , It may be possible that a program can deliver both.

The TV Movie Dummy concerned a young man, black, deaf and mute, accused of raping a white woman. This program,

particularly the second hour, touched viewers' feelings deeply[4]. Similarly, the episode of Knot's Landing shown during the survey week was particularly poignant or moving to the audience.

In contrast, Roots, 60 Minutes, Little House and the Waltons are shows viewers learn from and watch to get more from. This learning something from a program is more in the sense of a lesson learned about life, rather than a set of facts about some topic. It is easy to imagine viewers reporting learning from both Roots and 60 Minutes. In the case of Little House and the Waltons, these family dramas always carry a "message" and neatly solve a pressing dilemma at the close of the hour. Certainly, these shows can touch feelings, but viewers apparently consider "learning" as the more salient experience.

These findings suggest the concept of demandingness proposed by Barwise and Ehrenberg be broadened to include those programs which achieve a reasonably large value on the scale of Program Impact and not be defined a priori, or in terms of whether the programs make viewers "think."

Linking Audience Response to Program Ratings

In this section, the notion that "if viewers watch it, they like it," is examined. First, a composite measure of audience size based on quantitative ratings data is constructed and then this quantitative viewing data is linked

to Program Appreciation and Program Impact.

Measuring_Audience_Size

The Springfield, Illinois ADI program ratings for February, May, and July of 1981 were used to construct a composite measure of audience size for nineteen of the 31 television programs in the data set. Arbitron ratings were not available for the remaining twelve programs. National Nielsen ratings were not employed because it was believed that these numbers were not necessarily indicative of viewing behavior for the local Springfield audience.

In order to investigate the relationship between program ratings and the measures of audience response, a composite index of audience size was constructed using the method of principal components analysis. The components of this index are:

        February Sweeps
        May Sweeps
        July Sweeps

These measures of audience size are the Arbitron program ratings for the Springfield, Illinois ADI during each of three "SWEEPS" periods in 1981 (Arbitron Ratings Co., 1981). The Arbitron ratings for the Sweeps periods are not perfect measures of audience size for the programs in the sample. First, none of these ratings was obtained in the same

week that the programs were telecast. This is due to the fact that these ratings are obtained four times a year during "Sweeps" weeks," and the ten-day period during which the survey was conducted did not fall in a Sweep week[5]. Second, programming varies, often wildly, throughout the year, particularly during Sweeps weeks, so that program lead-ins and lead-outs are not consistently the same. This may have the effect of altering in unknown ways the viewing levels for the programs investigated. Finally, absolute levels of viewing differ by months of the year, with the summer months traditionally reflecting the lowest levels of viewing and the winter months the highest.

The ratings from the three Sweeps periods for nineteen television programs in the sample are displayed in Table 12.

Insert Table 12 about here

Ratings did not exist for six shows in the May Sweeps period. For these shows, a rating was estimated by taking the average of the February and July ratings and rounding to the nearest even integer. Study of this table indicates that it is no simple matter to obtain quantitative measures of audience size for television programs. Regularly scheduled programs may be

preempted and programs often change timeslots, particularly during Sweeps periods.

A direct measure of audience size is available for each program; this is the actual sample size associated with each program. These values reflect the number of viewers over the ten-day period who reported watching the television program and are displayed in the final column of Table 12. This measure of "rating" is not perfect, either. Shows were not included in the analysis unless their sample sizes were large enough (n >= 10) to make statistically reliable statements. This automatically excluded "unpopular" programs. Hence, the sample is biased in favor of well-watched shows from the start.

The correlations among the various measures of audience size are displayed in Table 13.

Insert Table 13 about here

All three ratings measures are highly correlated, with February and May the highest, followed by May and July and then February and July. It stands to reason that February and July would have the smallest correlation of the three since they have the largest spread of time between them. None of

the correlations among rating and program sample size are statistically significant and all three of the these correlations are of relatively low magnitude.

A Composite Measure of Program Ratings

A composite SWEEPS index was constructed from the three measures of rating for each program using principal components analysis. The means and standard deviations on the three ratings measures are displayed in Table 14, along with the results of the principal components analysis.

Insert Table 14 about here

The average rating for a program shown during the February Sweeps was 17.95, in May, 14.63, and in July, 12.05.

The first principal component of these data accounts for 92.6 percent of the variance in the correlation matrix. The composite SWEEPS score for each program is calculated as:

SWEEPS = 0.58*Feb + 0.58*May + 0.57*July.

In essence, a simple sum of these ratings was formed to arrive at the composite index.

The nineteen programs are arrayed in order of their magnitude on the SWEEPS index in Table 15.

Insert Table 15 about here

House Calls, 60 Minutes and Lou Grant have the highest values on this index, and Flamingo Road (first and second hours), Charlie's Angels and Napolean & Samantha have the lowest scores.

The SWEEPS Index and Program Sample Size

The correlation between program sample size and the SWEEPS index is 0.31 (p=0.20). CHIPs is most likely an outlier in this relationship. It has a program sample size of 44 — the highest in the sample — and a SWEEPS score of -0.88. Lou Grant may be an outlier in the opposite direction. It has the highest SWEEPS score (1.74), yet a small program sample size (19). If, for the moment, these two programs are ignored, then the relationship between program sample size and SWEEPS is much stronger. The correlation between program sample size and SWEEPS is 0.62 (p=0.008) with these two programs deleted. This result implies that sample size is actually a reasonably

good surrogate for program ratings and that the sample sizes
are not particularly biased. For the most part, programs with
low ratings tend to have small sample sizes and programs with
high ratings tend to have large sample sizes. One wonders why
CHIPs and Lou Grant do not fit the general pattern. Why did
CHIPs attract so many viewers in the sample and so few during
the Sweeps week? Why does Lou Grant have such a high
(composite) rating, yet have so few viewers during the survey
period?

It is only speculation, but perhaps on the survey
evenings in question, viewers in the sample watched CHIPs for
some anamolous reason; their "regular" show was not on; CHIPs
had a popular guest star; "nothing else" was on during that
timeslot. Assume that viewers who ordinarily would have
watched something else watched CHIPs because it was the least
objectionable alternative that evening. Then, it would follow
that CHIPs would receive a low Program Intent score.
Reviewing the score of CHIPs on this composite reveals that
its Program Intent score is not significantly different from
zero. Thus, there is no evidence that this is not the case.
A reasonable conclusion is that CHIPs' large program sample
size may not be a reliable estimate of its "true" audience
size. In the case of Lou Grant, suppose viewers who
ordinarily watch this program viewed something else instead.
Perhaps they were attracted by a special on another channel,
or a guest star in another series. Perhaps these viewers
decided not to watch television at all during that timeslot.
Then, the program sample size for Lou Grant may not be a

reliable indicator of its true audience size.

Barring the exceptions already noted, the ratings index constructed and the direct measure of audience size are highly associated; this suggests that both are reasonably accurate measures of the size of the viewing audience for a television program. If either program sample size or SWEEPS were biased, then they would not correlate so highly. Of course, they could both be biased in the same direction, but this is not likely considering that these ratings were not based on viewing levels during the actual survey period. Though the SWEEPS index does not apply directly to the particular program episodes in the sample, it is taken, along with program sample size, as a reliable measure of audience size for each program.

Program Appreciation and Audience Size

The correlation between Program Appreciation and program sample size is -0.45 (p=0.054). It is depicted graphically in Figure 4.

Insert Figure 4 about here

The program 60 Minutes is an outlier in this relationship because its Appreciation score (2.56) is much larger than one would predict from knowledge of its sample size (38), given the rest of the data. If 60 Minutes is deleted from analysis, then the correlation between Program Appreciation and sample size is -0.67 (p=0.024). Programs that have small audiences, as measured by their sample sizes, are more appreciated than programs that have large audiences, except for 60 Minutes. CHIPs, with the largest sample size (44), does not have the lowest Appreciation score (-0.88; the lowest is -2.92), though it is not necessarily an outlier. However, it has already been noted that CHIPs true audience size is believed to be somewhat smaller than 44. If this were the case, then it would fit more closely the negative relationship observed between Appreciation and sample size.

A similar relationship is observed between Program Appreciation and audience size when the correlation between Appreciation and the SWEEPS index is calculated. This correlation, as depicted in Figure 5, is -0.17 (p=0.48).

Insert Figure 5 about here

Both 60 Minutes and Lou Grant, with Appreciation scores larger than expected (2.56 and 1.89, respectively) given their SWEEPS scores (1.71 and 1.74, respectively), may be considered outliers in the relationship. If we delete these two programs, then the correlation increases in magnitude to -0.64 (p=0.006). Programs that have small audiences, as measured by the SWEEPS index, receive higher Appreciation scores than programs that have large audiences, except for 60 Minutes and Lou Grant.

If the SWEEPS index and program sample size are surrogates for audience size, suppose both are employed simultaneously to predict Program Appreciation. The squared multiple correlation is 0.203 for the regression of Appreciation on sample size and SWEEPS and the relationship is not statistically significant (p=0.16). The studentized residual for 60 Minutes is 2.75, suggesting that it is an outlier in this model.

Lou Grant and 60 Minutes appear consistently as outliers in the regression of Appreciation on the measures of audience size. Lou Grant is aberrant in the regression of program sample size on SWEEPS and Program Appreciation on SWEEPS. 60 Minutes is an outlier in the regressions of Program Appreciation on both SWEEPS and sample size. Ignoring these two problematic programs for the moment and performing the multiple regression again provides an interesting result: the squared multiple correlation is now 0.65 and statistically significant (F[2,14]=13.16, p=0.0006). Keep in mind that this

is the squared correlation and as such reports variance accounted for.

Program Appreciation can be predicted reasonably well from program ratings and program sample size separately, but when both are used together, Appreciation is predicted far better. Regardless of what direction the problem is approached from: Program Appreciation is negatively related to audience size. The larger the size of the audience, the lower is the average appreciation for the program.

Can an explanation be provided for these results? In the regression of Program Appreciation on the SWEEPS index, it was noted that both 60 Minutes and Lou Grant appeared to deviate from the generally observed negative relationship. According to the model, since both have high ratings, both should have low Appreciation scores. Yet, their Appreciation scores are among the highest in the sample. These programs are unique in some way, compared to the other seventeen in the analysis. Examining the demographics of audience response, differences are noted with respect to age and sex. 60 Minutes is primarily viewed by men and women in the 55+ age group and males in the 18-34 age group. In general, individuals in the 55+ category give high marks to the programs they view. It would appear that this reasonably homogeneous, large audience for 60 Minutes is a highly appreciative audience as well. Lou Grant attracts female and male viewers from 18-34 and some females in the 55+ category. Women are more appreciative than men, in general, and this relatively homogeneous audience is also a highly appreciative one[6]. It would appear that the

audiences for 60 Minutes and Lou Grant watch these programs because they appreciate them. But what about the remaining seventeen programs? Can it be that audiences watch them because they do _not_ appreciate them?

The Natural Monopoly of Popular Programs

McPhee's (1963) notions on natural exposure and popularity can be invoked to explain the curious relationship observed between Program Appreciation and program ratings. Though his theories of mass behavior were not developed in terms of the television viewing audience, they apply equally well to this situation. By definition, the most popular program is the one that has the most people in its audience. McPhee has shown that the most popular program is also the one with the greatest relative proportion of _least informed_ viewers - individuals "least reached" by other shows in the same category[7]. Therefore, a disproportionate share of the popular program's audience, a larger fraction of its already larger audience, consists of these "least informed" viewers.

McPhee suggests that the most popular programs within timeslots (alternatives within a class) possess a uniqueness beyond the quantitative advantage of popularity itself. This he terms a "monopoly," which the popular program has among the individuals _least informed_ about the class of alternatives and "thus least in a position to defend themselves against abuses of popularity." In other words, these individuals are more

subject to advertisements, promotions and word-of-mouth which encourage the viewer to watch the program.

But why do these popular programs have the advantage? McPhee rejects the idea that it is because "ignorant people prefer only the popular." Rather, it is because of two things:

1. The "weaker" program alternative has a smaller chance of being "learned" on a given exposure to this set of alternatives, and

2. The popular program alternatives have more advantage and this depends on promotion and publicity. "Chance events alone give the stronger alternative greater monopoly among people with less exposure to the topic."

Thus, the monopoly-like tendency

> that the weaker alternatives are at their weakest and the stronger alternatives at their strongest among people who know the least - is due to the unhappily reinforcing effects not only of a)heterogeneity of motivation to seek out unobvious alternatives, but also of b) chance events even within a population absolutely homogeneous in all such good intentions.

> For minimum exposure can arise either way, by motive or by chance, and minimum exposure of people leads to the same consequence in either case: a "natural" tendency toward monopoly of the popular over the uninformed. (p.132)

The popular programs have more of an opportunity to attract viewers, both informed and uninformed, so that there are more individuals in the audience, relative to the less

popular programs, who are under the influence of the "natural monopoly." A reasonable conclusion is that these "least informed" viewers are much less likely to appreciate what they are watching than the better informed viewers of the program. The uninformed viewers of the popular program _dilute_ the Appreciation score of the program and this gives rise to the observed negative correlation among Program Appreciation and audience size.

What these analyses have revealed is that if viewers "watch" it, they do not necessarily appreciate it. In fact, the most "popular" programs seem to attract the most heterogeneous audiences in terms of their appreciation for the program. Program ratings may truly measure nothing more than the size of the audience.

Audience Size and a Program's Impact

How do these findings relate to the observations previously made concerning Program Impact? Seven programs scored significantly low on Impact and eight programs scored significantly high. The mean sample size for the eight high impact programs is 18 (standard deviation=9.96). For the seven low impact programs the average sample size is 24.14 (standard deviation=7.64). The test of the null hypothesis of no mean difference yields a t-statistic of 1.32 (standard error of difference = 4.64). With 13 degrees of freedom, the

null hypothesis cannot be rejected (p greater than 0.10). However, 60 Minutes has previously been established as a "unique" program. Its sample size of 38 skews upward the high impact program type mean. If 60 Minutes is deleted, then the mean sample size for the high impact programs drops to 15.14 with a correspondingly smaller standard deviation of 6.28. The t-statistic for the test of no difference between these two program sample size means is now equal to 2.41 (standard error of difference = 3.74). This statistic is signficant (p=0.025), so the null hypothesis of no difference is rejected.

A SWEEPS score exists for all seven low impact programs, but only three of the high impact programs. This is because the high impact programs tend to be movies and specials for which Springfield ADI ratings were not available. However, a surrogate for ratings, program sample size, exists for all 31 programs in the sample. In Figure 6, Program Impact is plotted against program sample size for all 31 programs in the sample.

Insert Figure 6 about here

The correlation between Program Impact and program sample size is -0.35 (p = 0.051). If 60 Minutes is deleted from the

analysis, then the correlation is -0.56, significant at the p = 0.001 level.

A series of statistical exercises shown that programs with large audiences are less appreciated than programs with small audiences and that high impact programs are more appreciated, on the average, than low impact programs. Now it can be seen graphically that high impact programs tend to attract smaller audiences than low impact programs, as well.

Barwise and Ehrenberg found that the demanding programs (hard information shows) received higher liking scores compared with entertainment programs and attracted smaller audiences. The observations made here are consistent with this result and follow from the "investment of effort" model they propose to explain the results.

For the most part, the popular programs attract audiences who watch television primarily "as a way to pass the time." It is not that these viewers watch programs they do not appreciate, but rather watch programs they will not _have_ to appreciate. Television is not so much entertainment as it is filler. Unpopular programs attract audiences who watch television to "get more from it." They do get more; this is in the form of appreciation.

Program Impact and Viewing Behavior

An implicit assumption of the previous analyses has

been that consideration of a program's impact, in addition to
its quantitative rating, can aid decision-makers.   In this
section, two analyses are presented that offer another piece
of information. It is not enough to show that programs differ
on impact and that ratings do not necessarily imply
appreciation. What is needed is an analysis that can reveal
how Program Impact is associated with actual viewing
behavior. If behavior varies systematically with a program's
impact, then information emerges that can form the core of a
more complete base for decision making.

Five sets of variables specifying behaviors individuals
were likely to engage in during viewing were measured. The
variables can be classified according to the type of viewing
behavior they are intended to tap:

Activities   Talking Behavior   Room Leaving

Chores   Did Not Talk   Did Not Leave
Drinking   Talked About Program   Left During Ad
Eating   Talked About Things   Left During Program
Phone   Other Than Program   Left During Both
Reading
Recreation
Other

                      Distraction   Attention

                      Was Distracted   Low Attention
                      Was Not Distracted   High Attention

Respondents were permitted to choose up to five
activities they engaged in during viewing of the program from
a list of seven, including performing household chores,
drinking, eating, talking on the telephone, reading, engaging
in recreation and "other." They also reported whether or not

- 45 -

they talked during the program, and if they did, what the conversation was about: the program and things other than the program. Respondents were also asked to indicate whether they left the room at all during viewing of the television program and reported one of the following: left during the ad, left during the program itself, left during both the ad and the program, or did not leave at all. In addition, viewers reported the level of attention they paid to the television program and if engaging in activities distracted them while they were viewing.

Program Impact and Activities Engaged In

Each of the seven activity variables is logically two variables, since a respondent could indicate not performing the activity in question. A respondent actually had a choice of eight activities, since not engaging in any activities is itself an activity.

In order to assess the degree to which a program's impact affects the activities an individual is likely to engage in during viewing, the following procedure was performed. Respondents were assigned to one of three groups on the basis of what type of program they viewed. If they viewed a high impact program, then they were assigned to the high impact group. If they viewed a low impact program, then they were assigned to the low impact group. If the program they viewed was "average" in impact (actually, a program whose

impact could not reliably be determined as either high or low), then they were assigned to the average impact group. Within each group, the proportion of individuals who engaged in each activity was recorded and arrayed in a matrix. Altogether, there were eighteen activities: the eight activity variables x 2 and the distraction variable x 2. This program impact type-by-activity matrix is reproduced in Table 16.

_____

Insert Table 16 about here

_____

A correspondence analysis (Greenacre, 1984) was performed on this 3-by-18 matrix of program impact types and activities.[8] Talking on the telephone, eating, engaging in "other" and engaging in general were fitted into the space as "supplementary" points.

The two-dimensional correspondence analysis is displayed in Figure 7.

_____

Insert Figure 7 about here

_____

These two dimensions account for 100% of the variance in the data. Looking at the activity points (represented by "+" marks) reveals similarities and differences in activities among the program impact types. Notice that the left side of the space is characterized by distracting activities (PHONE, CHORES, RECREAT, DISTRACT), and a general engaging in activity (ENGAGE). As we move toward the right side of the space, there is a characterization of not partaking in activities and specifically, not distracting ones (NO DISTRACT, NO RECREAT, NO CHORES). When individuals do engage in activities, they are not distracting, e.g. drinking (DRINK). It is easy to see that, in terms of impact, there are three clear regions in this space, defined by the three program impact types. Each program impact type point in Figure 7 represents the profile of activities for that particular type of impact. High impact is on the right, average on the left, and low positive on the second dimension. Note that both low and high impact program types are associated with drinking behavior during viewing. However, only the low and average impact types are similar to each other in general terms of the types of activities engaged in.

The comparison between the activity variables and the program impact types are instructive. A particular impact type profile tends to a position which corresponds to the activity categories which are prominent in that impact type profile.

What emerges from this analysis is the finding that

viewers of high impact programs tend to behave in ways complementary with viewing, while viewers of low impact programs behave in ways competitive with viewing. Eating and drinking are not considered distracting activities, while reading, talking on the phone, and engaging in recreation are distracting.

Program Impact and Room Leaving Behavior

The association between room leaving behavior and Program Impact is examined in this section. The room leaving variable is admittedly a crude measure of room leaving behavior. It does not specify how often the individual left the room, or even when, exactly (during which ad? how many ads? during which portion of the show?). However, it does provide a rough measure of the behavior of interest.

Nearly half (42.25%) of all individuals reported no room leaving whatsoever during viewing. Twenty-five and a half percent indicated leaving the room during both the program and the ad. Almost twenty percent left the room during the commercial break, while only 12.31 percent reported leaving only during the program.

The attention and talking variables were included in this analysis to add clarity. The proportions of the different behaviors engaged in during viewing are arrayed by program impact type in Table 17.

Insert Table 17 about here

A correspondence analysis was performed on this 3-by-8 matrix of program impact types and behaviors. The categories of talking about the program and talking about things other than the program were fit in as supplementary points after the initial analysis. The two-dimensional display is shown in Figure 8.

Insert Figure 8 about here

All the behaviors on the left side of the space suggest a low interest in the program or perhaps just equally strong interests in things other than the program. Low attention to the program, leaving during the show, no talking about the program, talking about things other than the program, talking, and leaving during both the commercial and the program all imply a low degree of viewing effort on the part of the

viewer. On the other hand, the right side of the space contains the variables high attention, no room leaving, leaving only during the ad, no talking, talking about the program and not talking about other things. Again, as in the correspondence analysis of activities, three clear regions in the space emerge, all defined by program impact type. The high impact program type is drawn to the region of the space with behaviors signifying a high interest in the show and implying a great deal of effort on the part of the viewer. The low and average impact types are in the region of low effort and interest.

These analyses have shown that the activities individuals engage in during viewing and their viewing behaviors vary systematically with a program's impact. High impact programs encourage behavior complementary with viewing and this behavior is consistent with the theory that high impact programs require more effort. Viewing in this case is purposeful. Low impact programs encourage behavior competitive with viewing. Television is, in this situation, as Roberts (1982) has suggested: a "talking lamp."

Discussion

There are a number of findings from this investigation which are useful not only as guides to future research, but also as aids in media decision-making. The methodological and

theoretical limitations of the investigation are discussed thoroughly in Hoffman (1984) and will not be repeated here.

Program Impact is the key measure of audience response. Impact measures the degree of demandingness of a television program. It defines the effort an individual must put into a program in order to get something back. The input is measured in terms of attention and the output in terms of appreciation.

However, most people watch television as a way to pass the time; they shun demanding viewing. When this happens, programs are not judged as favorably, room leaving is more or less "random" with respect to the program, activities are competitive with viewing, distraction is high and attention is low. Yet, when viewers decide to watch to get more, viewing is planned in advance, the program is evaluated favorably, activities tend to complement the viewing experience, attention is high, distraction is low, and room leaving is consistent with viewing the program.

Though most viewers do not plan their viewing in advance, in some cases a program is "special" enough to warrant that extra effort. These are programs high in Program Impact. If a program is high in impact, then it is also highly appreciated. The results suggest, though by no means conclusively, that neither Program Intent nor Program Appreciation discriminates well among programs, relative to Program Impact.

Based on the results reported here, Program Appreciation, an evaluative measure of audience response, is

not a crucial measure. Its high positive correlation with Program Impact and its relative inability to discriminate well among programs suggest that it is the redundant variable. In the interests of economy and parsimony, if one can only collect one measure, it should be Program Impact.

Impact actually consists of two dimensions: an intellectual or cognitive component and an emotional or affective component. This is seen most clearly in the discriminant space of television programs. FEELING most closely measures the affective component and LEARN taps the intellectual component. The Program Impact scale discriminates well among television programs and provides a suitable and effective means for describing and explaining numerous aspects of the viewing experience. The results suggest that programs drawing smaller audiences tend to be judged higher in impact (actually cognitive impact) than programs drawing larger audiences. If Program Impact is the key measure of audience response, then this may be the key finding.

The somewhat curious result was observed that the size of a program's audience is inversely related to the appreciation viewers have for it. It must be kept in mind that there were a limited number of television programs in the sample. However, support for the reliability of the result comes from other sources. Barwise, Ehrenberg, and Goodhardt (1981) also observed a negative relationship between audience size and audience appreciation. They classified programs into two types, information and entertainment, and found that when

these programs are lumped together the correlation between audience appreciation and audience size is negative..

The measure of Program Appreciation is defined by the variable GRADE, "like they give in school." Recall that the canonical coefficient for ENJOY, an obvious surrogate for liking, was essentially zero. Program Appreciation appears not to measure program liking, per se, but rather, considering the high correlation between Appreciation and Impact, the grade the viewer gives to the program's impact, in terms of its execution.

This interpretation is reasonable, also, considering the negative correlation between ratings and appreciation. Individuals are assumed to watch what they like and like what they watch. If Appreciation measures evaluation rather than enjoyment, then we would expect that the high rated shows would be low on Appreciation. In a qualitative sense, most highly rated shows (there are notable exceptions as the outliers demonstrated) are not very good in terms of what they deliver to their audiences, and the variable GRADE measures that fact. Most of the programs with large audience sizes were situation comedies and action-adventure programs. Network audience share has been declining since the beginning of this decade and one reason often advanced is the derivative and bland nature of most network programming. The data suggest that audiences concur.

These findings have implications for advertising effectiveness. The research reported here provides evidence that different types of advertisements may be implied for each

type of impact. For example, in a low impact program, it may be necessary to grab the viewer's attention with the commercial message, while in a high impact program, the viewer is already attending and so a different ad execution style may be warranted. Perhaps ad effectiveness can be maximized by making the ad in the same "style" as the show. Anderson and Field's (1984) work on "attentional inertia" would support a similar conclusion. Future work will need to concentrate on the implications of two-dimensional Program Impact construct. While cognitive Impact is negatively related to audience size, affective Impact may be positively related[7]. In addition, for programs high in impact, different advertising executions may be implied, depending on whether the impact is affective or cognitive.

Because high ratings in general imply increasingly less attentive, less present viewers, and lower ratings imply increasingly more attentive, more "desirable" viewers, the ratings should be adjusted - say a number between zero and one - to reflect the proportion of viewers in the room who we can assume are viewing the ad. The research reported here suggests this number depends on program impact.

The traditional ratings systems in use today simply cannot and do not convey all the information needed to understand audience response to programs. The research reported here testifies to this fact. What this implies about the use of quantitative ratings for marketing and media decisions warrants serious consideration. Much more work on the behavioral assessment of the viewing audience must be done

before so-called "qualitative ratings", as promising as they may be, can be used as tools by decision-makers.

Those interested in the behavioral aspects of the viewing audience must concentrate on developing a sound, theoretical basis for a "qualitative" construct such as Program Impact and demonstrate the link between it and advertising effectiveness. What can follow from this linkage are the strategic guidelines that will demonstrate how qualitative ratings can serve as more than supplemental descriptors of viewing behavior.

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1. The Area of Dominant Influence is a geographical television market area. Arbitron uses this definition of market areas in its local market rating services. Nielsen uses a similar classification in its systems called the Designated Market Area (DMA).

2. The within-cell correlation between Program Appreciation and Program Impact is 0.46.

3. The within-cell correlation between Program Intent and Program Impact is 0.40 and the within-cell correlation between Intent and Appreciation is 0.30.

4. ABC Movie also registered emotionally with viewers. I was unable to learn what the content of the movie was, but venture a guess that it packed a punch.

5. For this reason, ratings do not exist at all for twelve of the 31 programs in the sample.

6. In contrast, House Calls, which fits the general pattern of having a large rating and a low Appreciation score, is watched by many different demographic groups: women in the 35-54 categories and 18-34 categories, men in the 18-34 category and women in the 55+ category. This audience is not homogeneous with respect to demographics not does it appear to be highly appreciative.

7. A "category" is defined here as the timeslot since one can argue that an individual's program choices are made from what is on at the time during which he or she "decides" to watch.

8. There are eighteen columns representing the activities instead of nine, because the data must be "doubled" to reflect the two logical alternatives of each item.

9. Knots Landing, Dallas, Dynasty and Falcon Crest, for example, would all probably score high in affective impact, but might score low in cognitive impact. These programs have high ratings and are high in impact, also.

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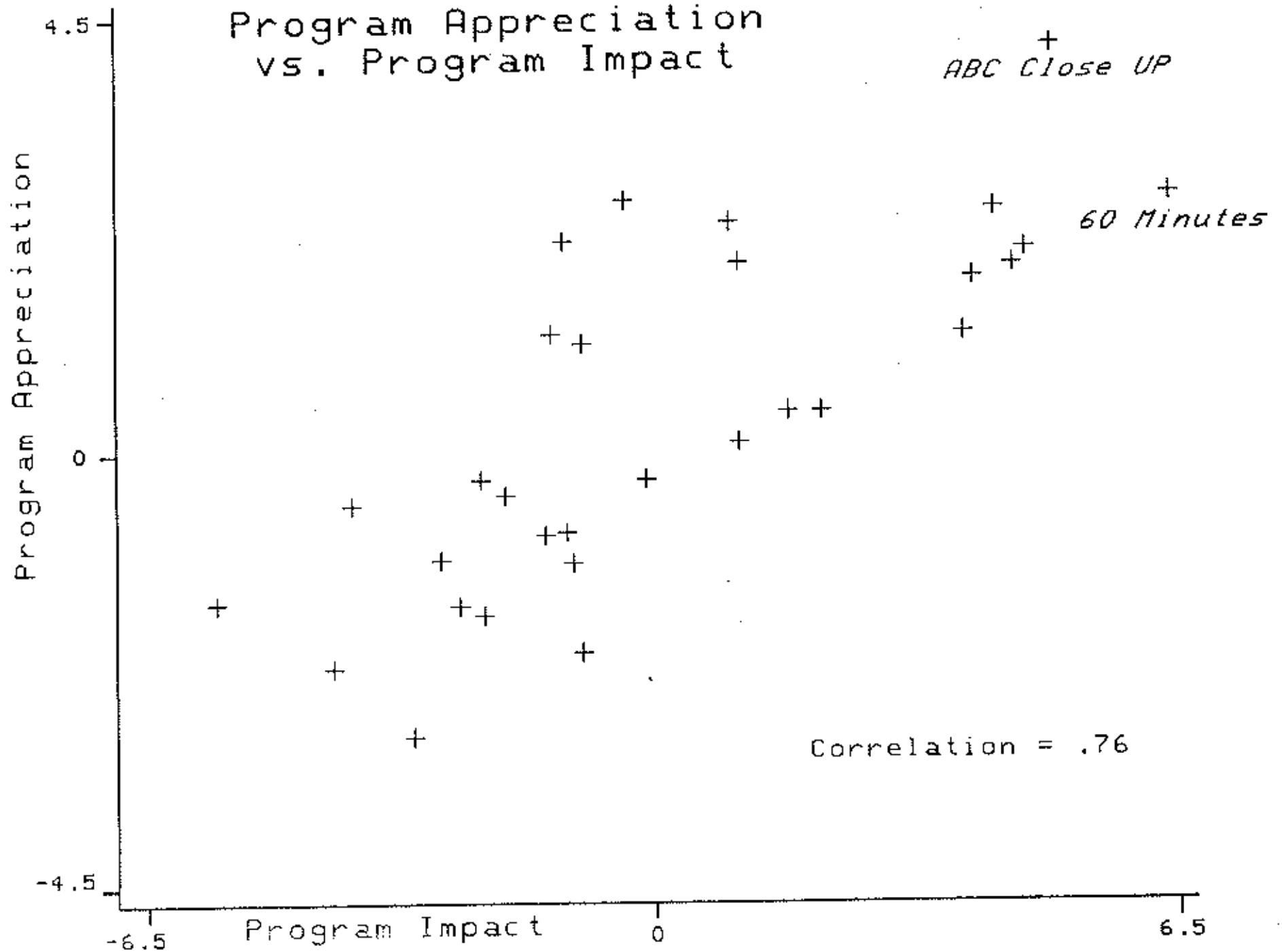
Discriminant Space of TV Programs

II

INTENT

60 Minutes
+

+ Lou Grant

American Gigolo
+

Magnum
+   +   +

Hart to Hart   +

Waltons
+   Else

Learn

Roots (2)
+

+ Little House

+
House Calls   +   +   +

IMPACT

I

Tomorrow   +

APPRECIATION

Roots (1)

+   +

Tim Conway   +

+
Dummy (1)

+

ABC Movie
+

Dummy (2)

Charlie's Angels   +

+
Knots Landing

Feeling

+

Flamingo Road (1)   +

+
God's Children

ABC Close Up
+
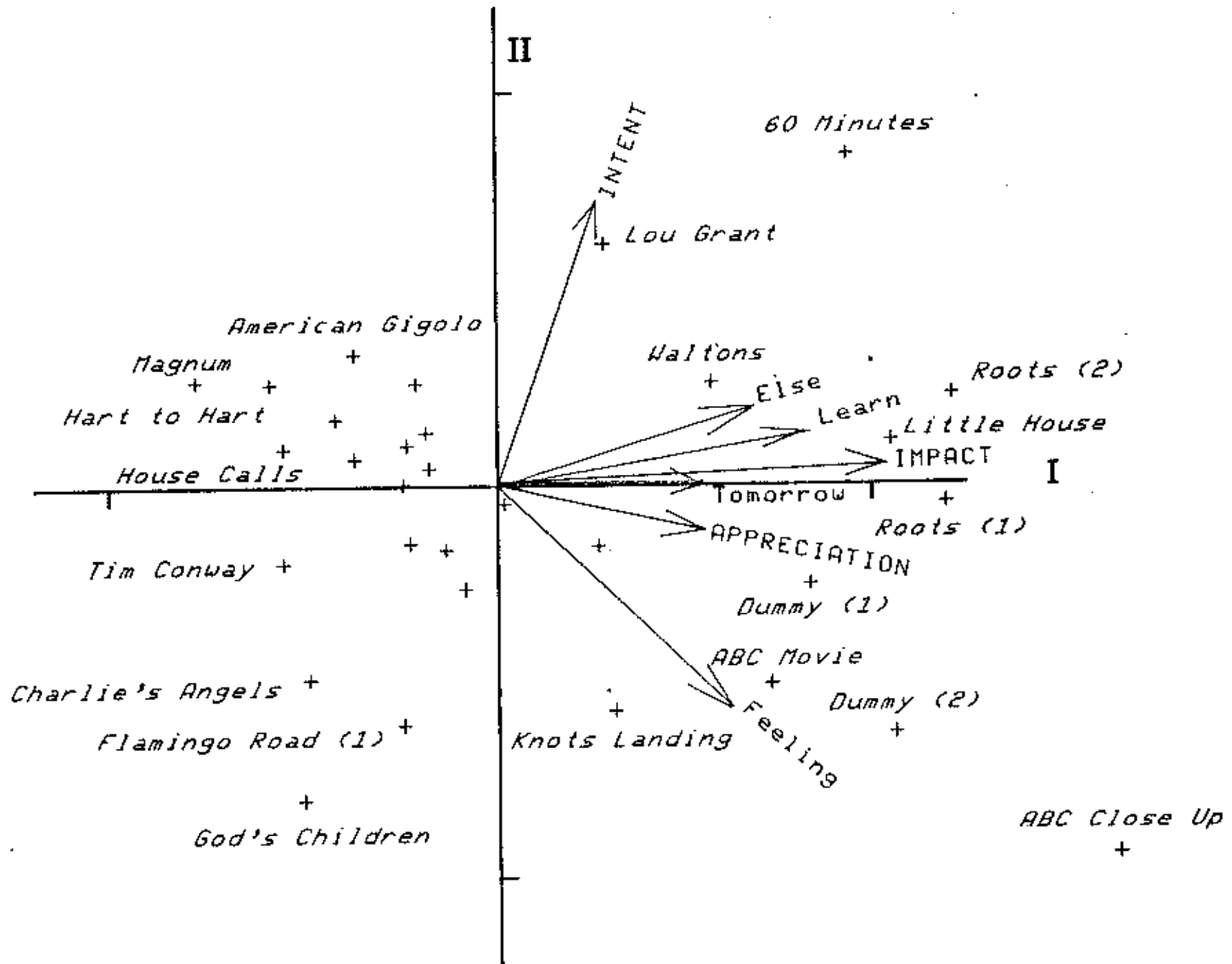
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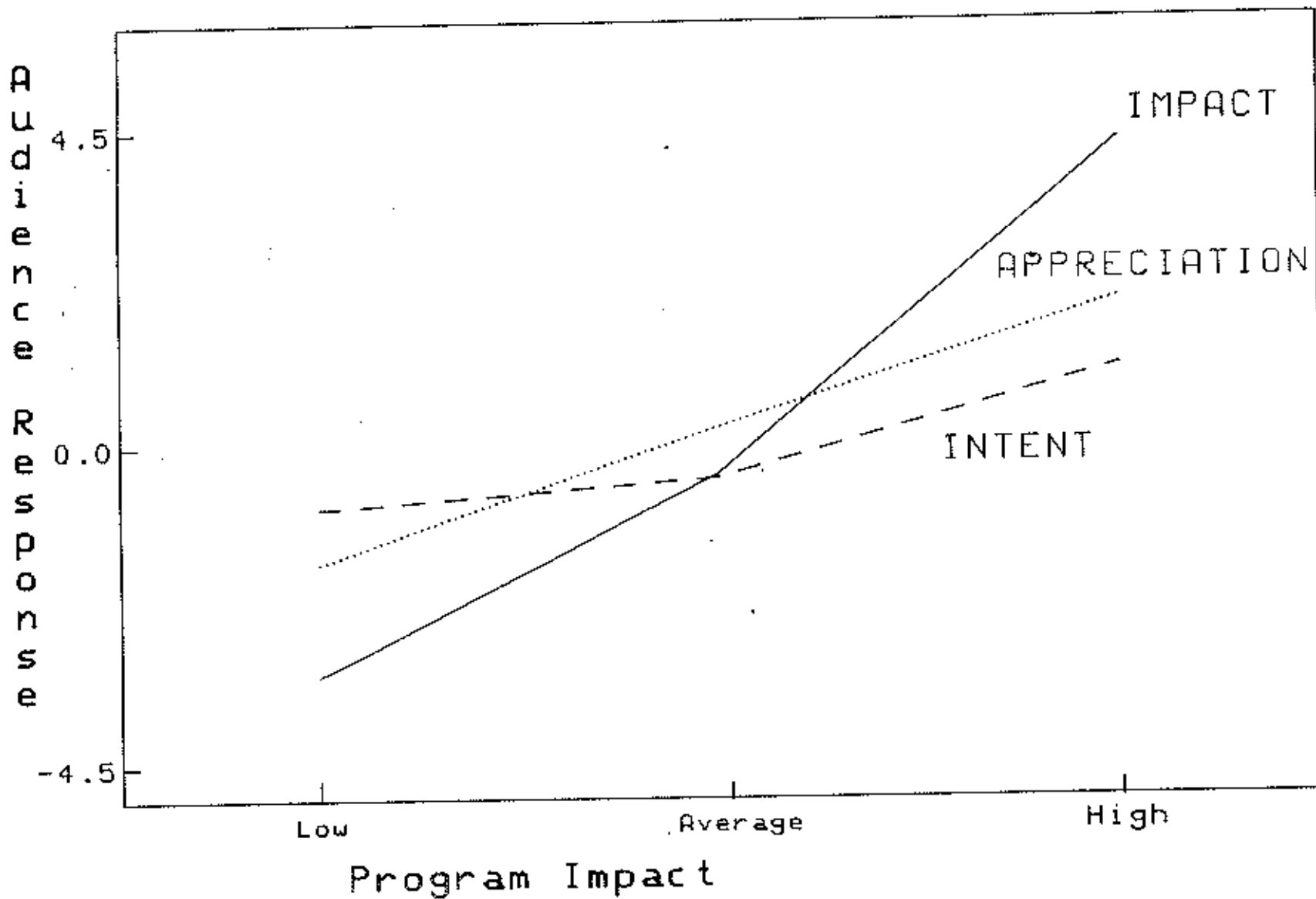
Program Appreciation
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60 Minutes

CHIPs

Correlation = -.67

(Correlation = -.45)

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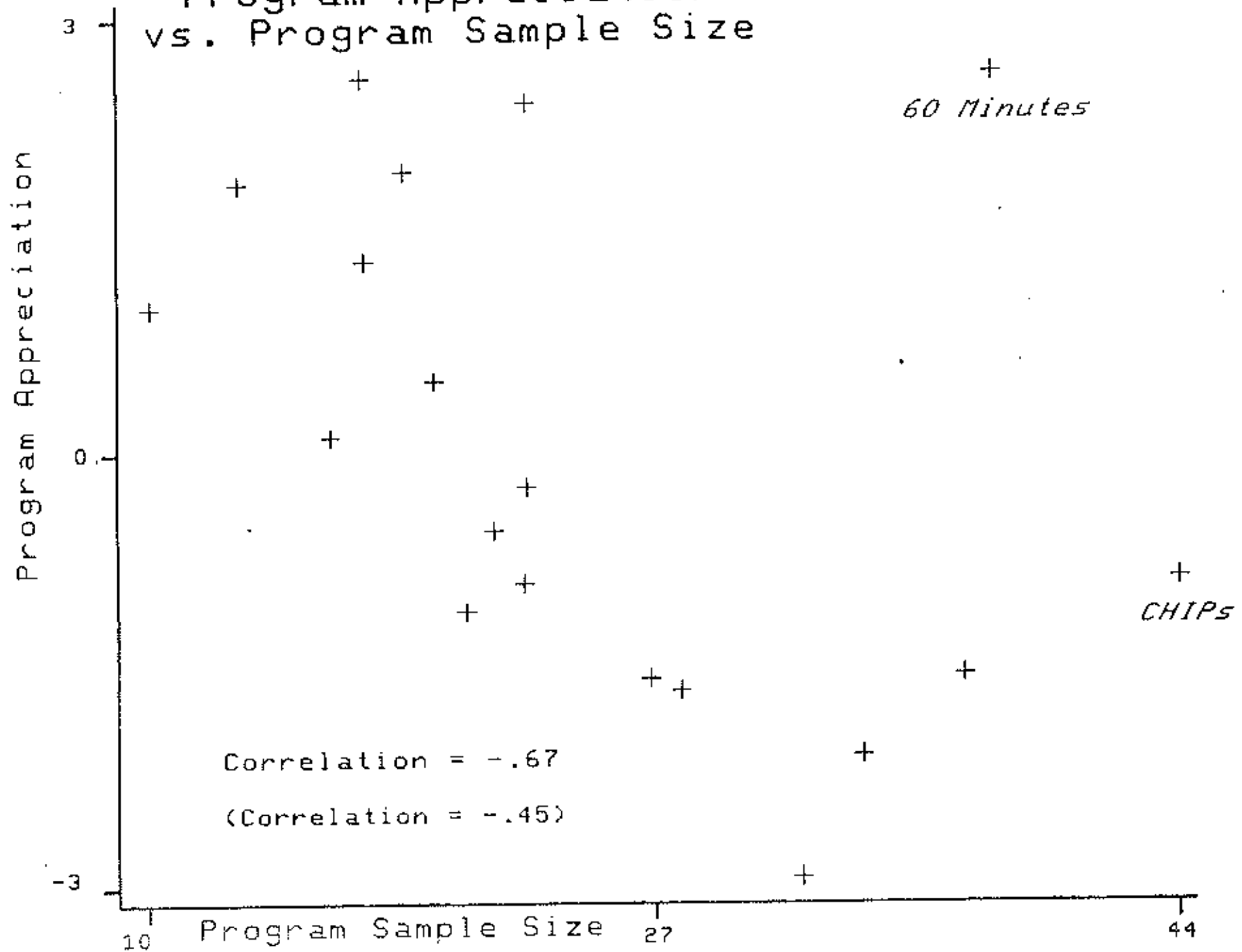
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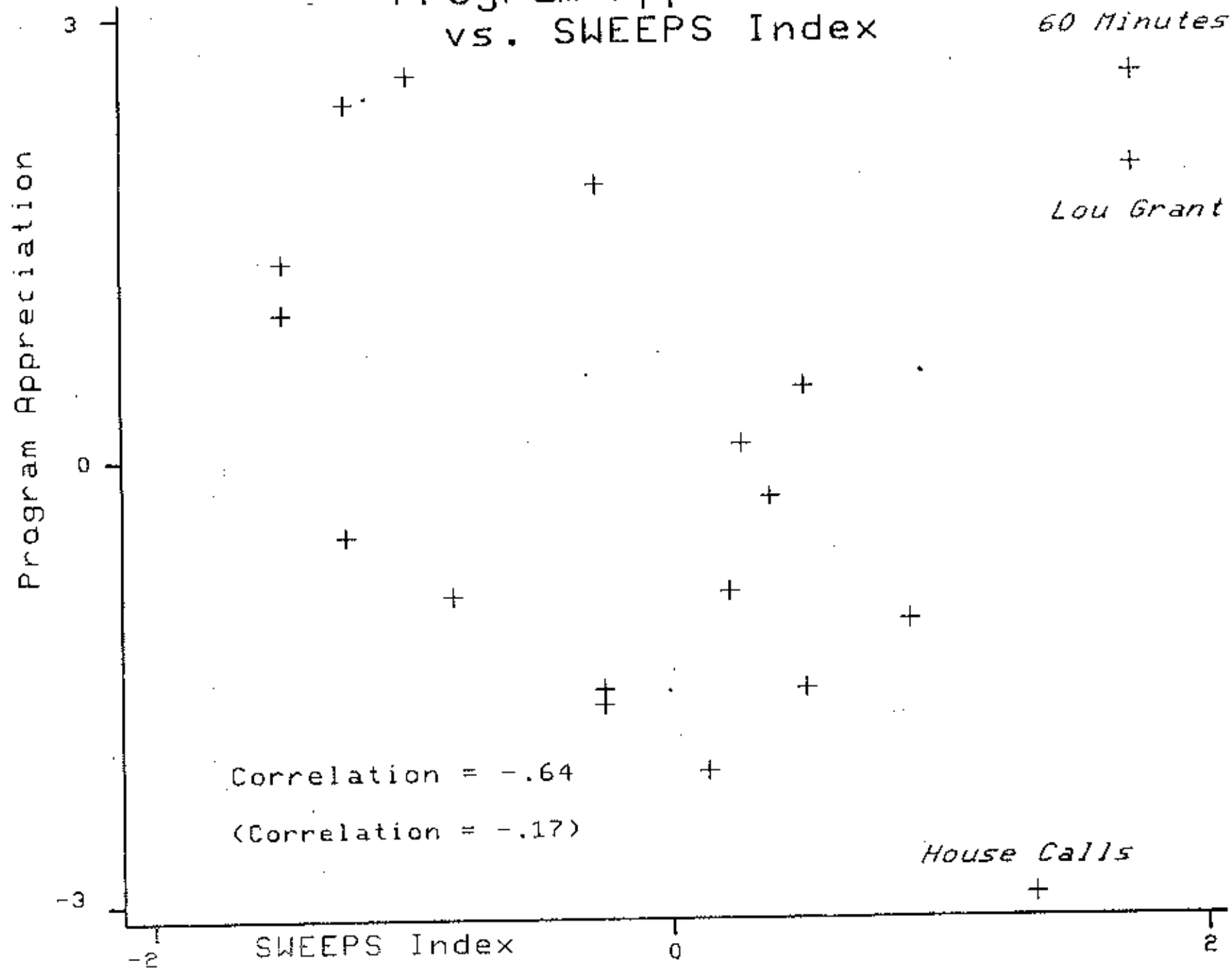
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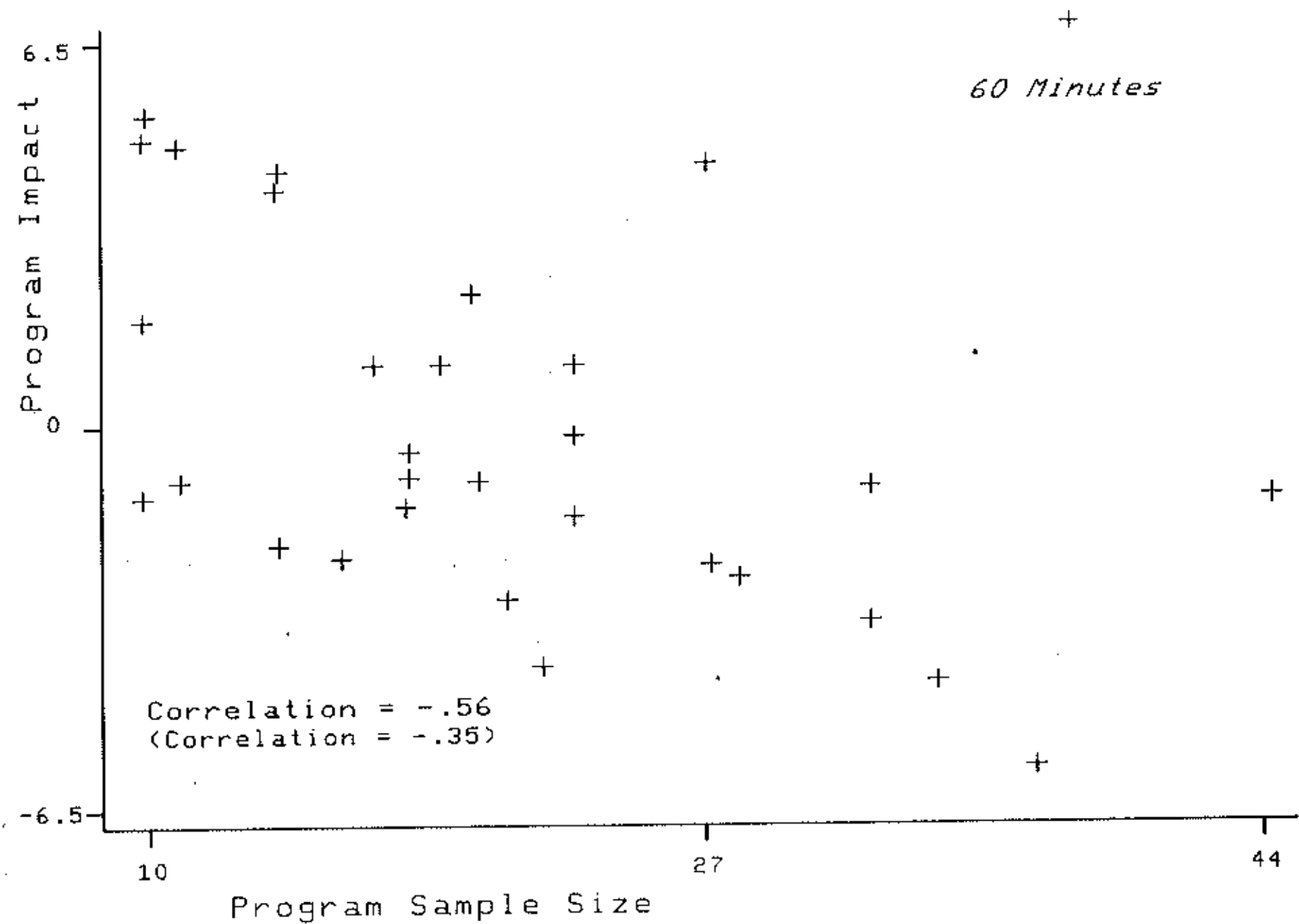
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II

Other

+
Drink

Recreation
+

+

Distracted

LOW
IMPACT +

Read

No Eat

++ ●

Engaged
in Activity

No Chores

+

I

No Phone +

No Drink

+

+ No Recreation

No Read +

AVERAGE IMPACT ●

+

No Other

Chores
+

+
Not Engaged
in Activity

● HIGH IMPACT

+
Not Distracted

Phone

Eat
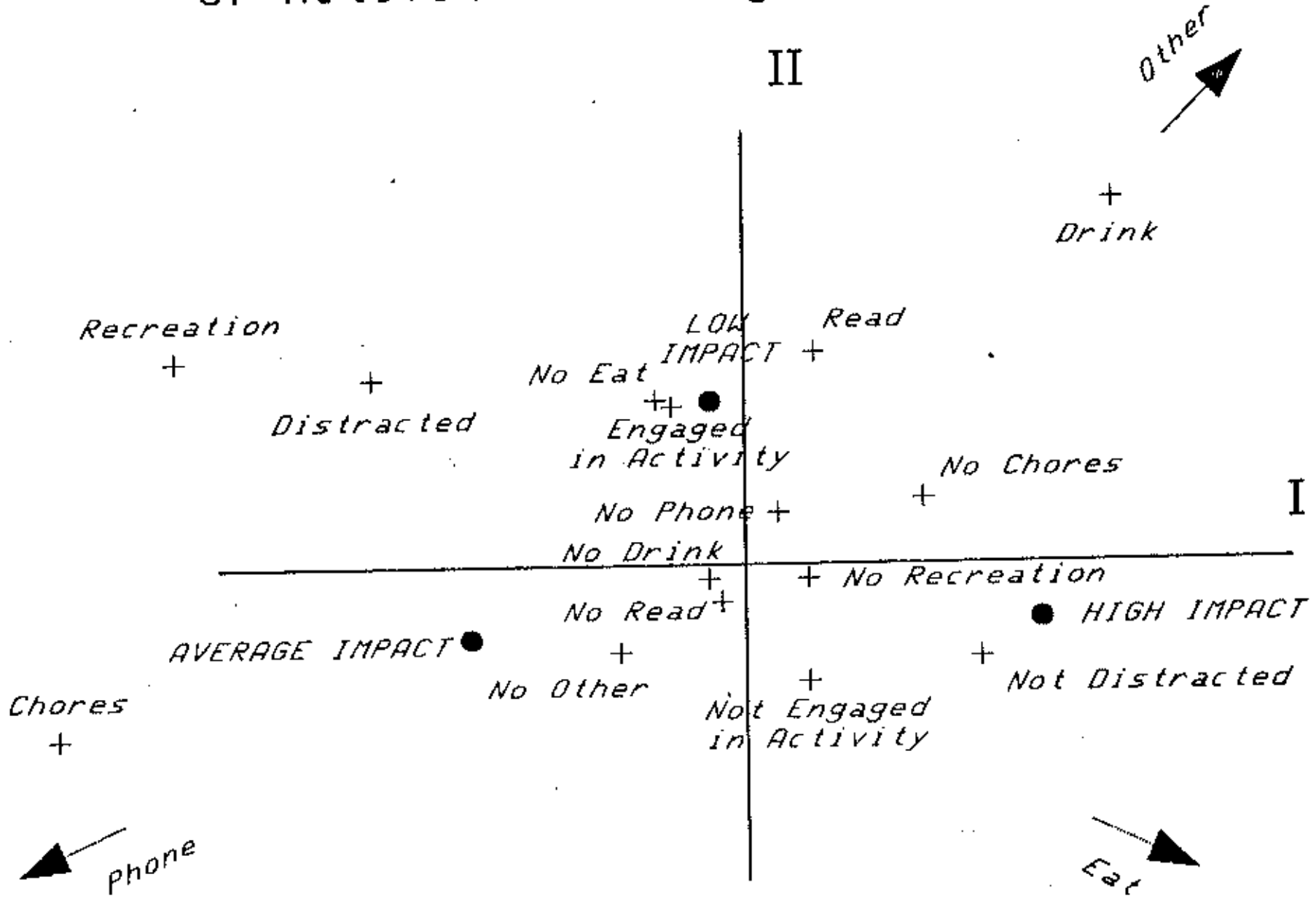
Correspondence Analysis
of Viewing Behaviors & Program Impact Types

II

LOW
IMPACT

Low Attention
+

Left During Show
+

+ Did Not Talk About Program
+

Left During Ad
+ Did Not Leave
+
+ HIGH IMPACT
+
Did Not Talk ●

I

·Talked About Other
Than Program or
Talked About Else

+ Did Talk
●
AVERAGE IMPACT

+
High Attention

+
+
Left During Show
and Ad

+
Talked About
Program

Did not Talk
About Else →

List of Tables

Program Type

	Weekly Series [1]	Weekly Series [2]	Movies/ Specials [2]	All
Count	19	1	11	31
Mean Sample Size	25	10	17	21
Total Sample Size	469	10	182	661

Notes: 1. Ratings available.
        2. Ratings not available.
        All figures rounded to nearest whole number.

Program	Sample Size
ABC Close Up	10
ABC Movie	10
American Gigolo	14
Bosom Buddies	27
Charlie's Angels	22
CHIPs	44
Convertible, The Last	10
Dummy (first hour)	27
Dummy (second hour)	14
Facts of Life	28
Flamingo Road (first hour)	18
Flamingo Road (second hour)	11
God's Children, All	16
Hart to Hart	21
House Calls	32
Jeffersons	23
Knots Landing	17
Little House	14
Lou Grant	19
Magnum	37
Mahogany (first hour)	32
Mahogany (second hour)	18
Napolean & Samantha	23
Odessa File	20
One Day at a Time	23
Roots (first hour)	10
Roots (second hour)	11
Tim Conway	34
Waltons	20
White Shadow	18
60 Minutes	38

	CANONICAL CORRELATION	ADJUSTED CAN ERROR	APPROX STD ERROR	VARIANCE RATIO	CANONICAL R-SQUARED
1	0.339446572	0.270294803	0.034439860	0.1302	0.115223975
2	0.212201299	0.107126626	0.037172181	0.0472	0.045029391

MULTIVARIATE TEST STATISTICS AND F APPROXIMATIONS

STATISTIC	VALUE	F	NUM DF	DEN DF	PROB > F
Wilks' Lambda	0.8449351	1.842936	60	1258	0.0001307303

WITHIN CANONICAL STRUCTURE

CAN1

ENJOY	0.5390
GRADE	0.9975

STANDARDIZED CANONICAL COEFFICIENTS

CAN1

ENJOY	-0.0888
GRADE	1.0904

RAW CANONICAL COEFFICIENTS

CAN1

ENJOY	-.1287806481
GRADE	0.0356422789

PROGRAM NAME	GROUP CENTROID	PROGRAM NAME	t-SCORE
MOHOGANY2	-0.50507	HOUSE_CALLS2	-2.9159
HOUSE_CALLS2	-0.48191	TIM_CONWAY1	-2.1309
ODESSA_FILE	-0.45778	MAHOGANY2	-2.0697
BOSOM_BUDDIES	-0.36446	ODESSA_FILE	-1.9963
FACTS_OF_LIFE	-0.35629	FACTS_OF_LIFE	-1.5933
TIM_CONWAY1	-0.33547	BOSOM_BUDDIES	-1.5909
HART_TO_HART	-0.24917	MAGNUM	-1.5080
MAGNUM	-0.24680	HART_TO_HART	-1.1298
MAHOGANY1	-0.17996	MAHOGANY1	-1.0400
ONE_DAY_TIME2	-0.17991	ONE_DAY_TIME2	-0.8846
CHIPS2	-0.15401	CHIPS2	-0.8823
AMER_GIGOLO	-0.11903	CHARLIES_ANGELS	-0.5778
CHARLIES_ANGELS	-0.10541	AMER_GIGOLO	-0.3820
JEFFERSONS2	-0.06843	GODS_CHILDREN	-0.2928
GODS_CHILDREN	-0.06548	JEFFERSONS2	-0.2744
KNOTS_LANDING	0.02589	KNOTS_LANDING	0.1153
WALTONS	0.08030	WALTONS	0.4454
ABC_MOVIE11	0.18079	ABC_MOVIE11	0.4667
FLAMINGO_ROAD12	0.30860	FLAMINGO_ROAD12	1.0413
FLAMINGO_ROAD11	0.31611	FLAMING_ROAD11	1.2527
LOU_GRANT2	0.35066	DUMMY12	1.2729
WHITE_SHADOW	0.36120	LITTLE_HOUSE1	1.8014
DUMMY12	0.37668	ROOTS12	1.8681
60_MINUTES2	0.38897	LOU_GRANT2	1.8890
DUMMY11	0.43014	ROOTS11	1.9921
NAP_AND_SAM1	0.43606	CONVERTIBLE2	2.1613
CONVERTIBLE2	0.53721	NAP_AND_SAM1	2.3427
ROOTS12	0.55883	DUMMY11	2.4590
LITTLE_HOUSE1	0.57821	60_MINUTES2	2.5568
ROOTS11	0.62827	WHITE_SHADOW	2.5840
ABC_CLOSE_UP	0.88375	ABC_CLOSE_UP	4.0677

CANONICAL VARIABLE SCORES

Statistics

Mean = 0
Within-cell Standard Deviation = 1.0
Minimum Value = -2.11
Maximum Value = 1.72

	CANONICAL CORRELATION	ADJUSTED CAN ERROR	APPROX STD ERROR	VARIANCE RATIO	CANONICAL R-SQUARED
1	0.503458863	0.461676690	0.029058609	0.3395	0.253470827
2	0.313014625	0.236276325	0.035111153	0.1086	0.097978155
3	0.201742936	.	0.037340694	0.0424	0.040700212
4	0.181086809	.	0.037648504	0.0339	0.032792432

MULTIVARIATE TEST STATISTICS AND F APPROXIMATIONS

STATISTIC	VALUE	F	NUM DF	DEN DF	PROB > F
Wilks' Lambda	0.6247955	2.611503	120	2495.082	0.000

WITHIN CANONICAL STRUCTURE

CAN1

FEELING	0.6052
LEARN	0.8053
ELSE	0.7373
TOMORROW	0.5551

STANDARDIZED CANONICAL COEFFICIENTS

CAN1

FEELING	0.2415
LEARN	0.5910
ELSE	0.5031
TOMORROW	0.5551

RAW CANONICAL COEFFICIENTS

CAN1

FEELING	0.4832782850
LEARN	1.1951602168
ELSE	1.0668525446
TOMORROW	0.3145561118

	CANONICAL CORRELATION	ADJUSTED CAN ERROR	APPROX STD ERROR	VARIANCE RATIO	CANONICAL R-SQUARED
1	0.336238830	0.266632010	0.034524227	0.1275	0.113056551
2	0.198229178	0.084353666	0.037395399	0.0409	0.039294807

MULTIVARIATE TEST STATISTICS AND F APPROXIMATIONS

STATISTIC	VALUE	F	NUM DF	DEN DF	PROB > F
Wilks' Lambda	0.8520912	1.746953	60	1258	0.0004689668

WITHIN CANONICAL STRUCTURE

CAN1

ANTICPTN	0.8858
PLAN	0.7919

STANDARDIZED CANONICAL COEFFICIENTS

CAN1

ANTICPTN	0.6915
PLAN	0.5224

RAW CANONICAL COEFFICIENTS

CAN1

ANTICPTN	1.3820213269
PLAN	1.1875247985

PROGRAM NAME	GROUP CENTROID	PROGRAM NAME	t-SCORE
MAGNUM	-0.66352	MAGNUM	-5.2654
TIM_CONWAY1	-0.59884	TIM_CONWAY1	-3.9224
HOUSE_CALLS2	-0.53945	CHARLIES_ANGELS	-3.6100
HART_TO_HART	-0.50964	HOUSE_CALLS2	-2.9056
CHARLIES_ANGELS	-0.50853	HART_TO_HART	-2.5527
GODS_CHILDREN	-0.45795	FACTS_OF_LIFE	-2.2675
AMER_GIGOLO	-0.44930	BOSOM_BUDDIES	-2.0236
FACTS_OF_LIFE	-0.42125	GODS_CHILDREN	-1.9426
BOSOM_BUDDIES	-0.37254	AMER_GIGOLO	-1.6891
ONE_DAY_TIME2	-0.28278	ONE_DAY_TIME2	-1.2548
FLAMINGO_ROAD11	-0.26831	FLAMINGO_ROAD11	-1.1129
FLAMINGO_ROAD12	-0.26175	CHIPS2	-1.0054
CONVERTIBLE2	-0.23699	CONVERTIBLE2	-0.9807
MAHOGANY2	-0.20444	MAHOGANY1	-0.8539
CHIPS2	-0.17120	MAHOGANY2	-0.7577
MAHOGANY1	-0.16405	ODESSA_FILE	-0.7576
ODESSA_FILE	-0.16394	FLAMINGO_ROAD12	-0.7472
WHITE_SHADOW	-0.07067	WHITE_SHADOW	-0.2733
JEFFERSONS2	-0.00958	JEFFERSONS2	-0.0421
NAP_AND_SAM1	0.23661	NAP_AND_SAM1	1.0480
KNOTS_LANDING	0.27841	LOU_GRANT2	1.0834
LOU_GRANT2	0.28911	KNOTS_LANDING	1.1026
WALTONS	0.56833	ABC_MOVIE11	1.8031
ABC_MOVIE11	0.67237	WALTONS	2.1380
DUMMY11	0.78742	DUMMY12	3.8383
60_MINUTES2	0.90910	LITTLE_HOUSE1	4.0228
DUMMY12	1.02563	DUMMY11	4.2121
ROOTS12	1.03963	ROOTS12	4.4731
LITTLE_HOUSE1	1.11839	ROOTS11	4.6372
ROOTS11	1.27151	ABC_CLOSE_UP	4.9580
ABC_CLOSE_UP	1.35957	60_MINUTES2	6.4141

CANONICAL VARIABLE SCORES

Statistics

Mean = 0
Within-cell Standard Deviation = 1.0
Minimum Value = -1.19
Maximum Value = 1.87

PROGRAM NAME	GROUP CENTROID	PROGRAM NAME	t-SCORE
ABC_CLOSE_UP	-0.72656	ABC_CLOSE_UP	-3.9424
GODS_CHILDREN	-0.57098	GODS_CHILDREN	-3.4521
ABC_MOVIE11	-0.48895	CHARLIES_ANGELS	-2.4341
CHARLIES_ANGELS	-0.45517	TIM_CONWAY1	-2.1031
MOHOGANY2	-0.35507	ABC_MOVIE11	-1.7190
ODESSA_FILE	-0.34102	ODESSA_FILE	-1.6938
DUMMY12	-9.33964	DUMMY12	-1.4870
TIM_CONWAY1	-0.33473	MAHOGANY2	-1.3630
JEFFERSONS2	-0.26400	FLAMINGO_ROAD11	-1.1734
FLAMINGO_ROAD11	-0.25668	JEFFERSONS2	-1.1605
KNOTS_LANDING	-0.22423	KNOTS_LANDING	-0.9934
WHITE_SHADOW	-0.17990	FACTS_OF_LIFE	-0.8542
FLAMINGO_ROAD12	-0.17644	WHITE_SHADOW	-0.8298
FACTS_OF_LIFE	-0.16304	BOSOM_BUDDIES	-0.7206
BOSOM_BUDDIES	-0.13194	HOUSE_CALLS	-0.5396
HOUSE_CALLS2	-0.10135	FLAMINGO_ROAD12	-0.4910
HART_TO_HART	0.01306	HART_TO_HART	0.0654
CHIPS2	0.04785	MAHOGANY1	0.2901
MAHOGANY1	0.05925	ONE_DAY_TIME2	0.2986
ONE_DAY_TIME2	0.07116	CHIPS2	0.3481
MAGNUM	0.07564	AMER_GIGOLO	0.3770
AMER_GIGOLO	0.11227	MAGNUM	0.4568
ROOTS12	0.18280	ROOTS12	0.4989
DUMMY11	0.27035	CONVERTIBLE2	1.2386
NAP_AND_SAM1	0.31151	DUMMY11	1.3500
LOU_GRANT2	0.37001	LOU_GRANT2	1.3782
CONVERTIBLE2	0.43956	NAP_AND_SAM1	1.4556
WALTONS	0.47949	ROOTS11	1.8204
ROOTS11	0.57777	WALTONS	1.9069
60_MINUTES2	0.65072	60_MINUTES2	4.1494
LITTLE_HOUSE1	0.95903	LITTLE_HOUSE1	4.4418

CANONICAL VARIABLE SCORES

Statistics

Mean = 0
Within-cell Standard Deviation = 1.0
Minimum Value = -1.003
Maximum Value = 1.57

	CANONICAL CORRELATION	ADJUSTED CAN ERROR	APPROX STD ERROR	VARIANCE RATIO	CANONICAL R-SQUARED
1	0.514000308	0.467329908	0.028641120	0.3591	0.264196317
2	0.357208269	0.276748157	0.033958212	0.1463	0.127597747
3	0.280450494	.	0.035863404	0.0854	0.078652479
4	0.250472185	.	0.036482939	0.0669	0.062736315
5	0.210673508	.	0.037197329	0.0464	0.044383327
6	0.195869690	.	0.037431594	0.0399	0.038364935
7	0.170799612	.	0.037789409	0.0300	0.029172507
8	0.136793146	.	0.038196569	0.0191	0.018712365

MULTIVARIATE TEST STATISTICS AND F APPROXIMATIONS

STATISTIC	VALUE	F	NUM DF	DEN DF	PROB > F
Wilks' Lambda	0.4852845	1.9739	240	4844.7	0.0000
Wilks' Lambda	0.6595298	1.3230	203	4269.9	0.0018

	WITHIN CANONICAL STRUCTURE		STANDARDIZED CANONICAL COEFFICIENTS	
	CAN1	CAN2	CAN1	CAN2
FEELING	0.5919	-0.5236	0.2692	-0.7473
LEARN	0.7788	0.1616	0.5681	0.4049
ELSE	0.7128	0.1607	0.5277	0.2085
TOMORROW	0.5306	0.0290	0.1538	-0.1503
ENJOY	0.2310	-0.0320	-0.3051	-0.1503
GRADE	0.4813	-0.1058	0.2028	-0.2693
ANTICPTN	0.2145	0.5119	-0.0597	0.4589
PLAN	0.2294	0.5763	0.0089	0.5086

RAW CANONICAL COEFFICIENTS

	CAN1	CAN2
FEELING	0.538602528	-1.495402539
LEARN	1.148928731	0.818885719
ELSE	1.118998469	0.442122092
TOMORROW	0.328039258	-0.320586991
ENJOY	-0.442406302	-0.140086248
GRADE	0.006629778	-0.008801813
ANTICPTN	-0.119275625	0.917113843
PLAN	0.020318721	1.156135144

GROUP CENTROIDS ON CANONICAL VARIABLES

PROGRAM NAME	FIRST FUNCTION	SECOND FUNCTION
ABC_CLOSE_UP	1.6048	-0.9150
ABC_MOVIE11	0.6884	-0.5099
AMER_GIGOLO	-0.3707	0.3313
BOSOM_BUDDIES	-0.4166	0.1619
CHARLIES_ANGELS	-0.4940	-0.4882
CHIPS2	-0.1859	0.1267
CONVERTIBLE2	-0.2156	-0.1546
DUMMY11	0.8185	-0.2607
DUMMY12	1.0295	-0.6219
FACTS_OF_LIFE	-0.3652	0.0553
FLAMINGO_ROAD11	-0.2361	-0.5917
FLAMINGO_ROAD12	-0.2388	0.0006
GODS_CHILDREN	-0.5000	-0.8048
HART_TO_HART	-0.5935	0.2720
HOUSE_CALLS2	-0.5501	0.0892
JEFFERSONS2	0.0087	-0.0517
KNOTS_LANDING	0.3034	-0.5722
LITTLE_HOUSE1	1.0245	0.1086
LOU_GRANT2	0.2629	0.5850
MAGNUM	-0.7696	0.2646
MAHOGANY1	-0.2279	0.1021
MAHOGANY2	-0.1443	-0.1577
NAP_AND_SAM1	0.2625	-0.1558
ODESSA_FILE	-0.1835	0.0408
ONE_DAY_TIME2	-0.2162	0.2501
ROOTS11	1.1607	-0.0563
ROOTS12	1.1829	0.2181
TIM_CONWAY1	-0.5629	-0.1946
WALTONS	0.5568	0.2485
WHITE_SHADOW	-0.0887	-0.2647
60_MINUTES2	0.9110	0.8093

CANONICAL VARIABLE SCORES

Statistics

First Canonical Variable

Mean = 0
Within-cell Std Dev = 1.0
Minimum Value = -1.99
Maximum Value = 2.81

Second Canonical Variable

Mean = 0
Within-Cell Std Dev = 1.0
Minimum Value = -2.66
Maximum Value = 3.03

Variable	Within-cell Correlations		R^2
	First Function	Second Function	
ANTICPTN	0.21	0.51	0.31
PLAN	0.23	0.58	0.38
Intent	0.26	0.64	0.48
TOMORROW	0.53	0.03	0.28
ELSE	0.71	0.16	0.53
FEELING	0.59	−0.52	0.62
LEARN	0.78	0.16	0.63
Impact	0.97	0.05	0.94
ENJOY	0.23	−0.03	0.05
GRADE	0.48	−0.11	0.24
Appreciation	0.49	−0.11	0.25

Program Name   1981 Sweeps Period

	Day/Time	Feb	May	July	Sample Size
Bosom Buddies	Th 7:30	16	13	12	27
Charlie's Angels	W 7:00	9[1]	8*	8	22
CHIPs	Su 7:00	12	12	7	44
Disney	Su 6:00	10	9 .	6	23
Facts of Life	W 8:30	16	14	11	28
Flamingo Road 1	M 8:00	10[2]	7*	4	18
Flamingo Road 2	M 8:00	10[2]	7*	4	11
Hart to Hart	Tu 9:00	20	19	20	21
House Calls	M 8:30	26	20	21	32
Jeffersons	Su 8:30	20	17	14	23
Knot's Landing	Th 9:00	22	16*	11	17
Little House	M 7:00	19	14	7	14
Lou Grant	M 9:00	28	21	25	19
Magnum, P.I.	Th 8:00	22	18	13	37
One Day at a Time	Su 7:30	23	14	12	23
Tim Conway	M 7:30	17[3]	16*	14	34
Waltons	Th 7:00	20	20	12	20
White Shadow	M 7:00	12	10*	7[4]	18
60 Minutes	Su 6:00	29	23	21	38

[1]Saturday 7:00   Program shown on this day and time slot
                    during the sweeps period.

[2]Tuesday 9:00   Program shown on this day and time slot
                    during the sweeps period.

[3]Saturday 7:30   Program shown on this day and time slot
                    during the sweeps period.

[4] Wednesday 7:00 Program shown on this day and time slot
                    during the sweeps period.

            *estimate: see text for explanation

	Sample Size	Feburary	May	July	Sweeps
Sample Size	1.00				
February	.23[1]	1.00			
May	.36[2]	.92	1.00		
July	.30[3]	.86	.89	1.00	
Sweeps	.31[4]	.96	.97	.95	1.00

1. p=0.34
2. p=0.13
3. p=0.21
4. p=0.20
Note: All others significant at p=0.0001

SIMPLE DESCRIPTIVE STATISTICS

(n = 19)

	February	May	July
Mean	17.95	14.63	12.05
Standard Deviation	6.28	4.90	6.06

	Eigenvalue	Percent of Variance Explained
First Principal Component	2.78	92.6

Eigenvector	
February	0.58
May	0.58
July	0.57

Program Name	Sweeps Score
Flamingo Road (1)	-1.44
Flamingo Road (2)	-1.44
Charlie's Angels	-1.20
Napoleon & Samantha (Disney)	-1.18
White Shadow	-0.94
CHIPs	-0.80
Little House	-0.27
Bosom Buddies	-0.23
Facts of Life	-0.21
Tim Conway	0.16
One Day at a Time	0.23
Knot's Landing	0.26
Jeffersons	0.39
Waltons	0.49
Magnum	0.52
Hart to Hart	0.87
House Calls	1.33
60 Minutes	1.71
Lou Grant	1.74

Statistics (n = 19)

	Sweeps	Sample Size
Mean	0.0	24.68
Standard Deviation	1.0	8.79

Impact Type	Distract yes/no		Read yes/no		Chores yes/no		Recreate yes/no		Drink yes/no		Engage yes/no		Eat yes/no		Phone yes/no		Other yes/no	
Low	.44	.56	.21	.79	.19	.81	.12	.88	.11	.89	.54	.46	.14	.86	.04	.96	.18	.82
Average	.44	.56	.18	.82	.28	.72	.13	.87	.07	.93	.49	.51	.19	.81	.09	.91	.05	.95
High	.31	.69	.19	.81	.15	.85	.07	.92	.10	.90	.47	.53	.27	.73	.03	.93	.18	.82

Impact Type	Attention yes/no		Do Not Leave	Leave During Ad	Leave During Show	Leave During Both	Talk yes/no	
Low	.49	.51	.41	.20	.15	.41	.41	.59
Average	.42	.58	.38	.19	.13	.43	.43	.57
High	.27	.73	.53	.23	.07	.17	.31	.69