By Bradley S. Greenberg

Media Use and Believability: Some Multiple Correlates

Cross tabulating sex, age and education, using data from two surveys, this study uncovers interactions that yield more exact predictions of media use and credibility than earlier studies.

► Newspapers or television: Which is used more for news? Which is more believable? Variants of these two questions have been asked in several recent reports in this journal,[1] and still other versions have been used by commercial researchers.[2] These studies show that television has closed an earlier gap and is virtually as widely used as a principal news source today as is the newspaper. Also, television is chosen by a wide margin as the more believable of the two.

Although such findings are of a minor consequence to the social scientist, they are of obvious interest to newspaper and television advertising departments. What is important is the determination of those factors which lead an individual to choose one medium rather than another. This report examines certain of those factors.

The major study of correlates of comparative media credibility is that reported by Westley and Severin in 1964.[3] They in fact say they can find no prior studies of such correlates. Earlier studies focused on a single medium, and determined the characteristics of persons who were most likely to use or believe *a* medium, e.g., the Bush-Brinton studies of attitudes toward newspapers.[4]

Westley and Severin sampled nearly 1,000 persons. They cross-classified the respondents' credibility ratings of newspapers, radio and television in terms of seven socio-economic indices, six demographic characteristics, three measures of political involvement and five aspects of social participation. Each of these measures was a potential correlate of media credibility, and in fact, many did differentiate among the believers of the media studied. For example, those who chose newspapers as the most believable tended to be of higher socio-economic status, men, short-term city resi-

[1] *Cf.*, Bruce H. Westley and Werner J. Severin, "Some Correlates of Media Credibility," JOURNALISM QUARTERLY, 41:325-35 (Summer 1964); Roy E. Carter and Peter Clarke, "Suburbanite, City Residents and Local News," JOURNALISM QUARTERLY, 40:548-58 (Autumn 1963); Richard F. Carter and Bradley S. Greenberg, "Newspaper or Television: Which Do You Believe?" JOURNALISM QUARTERLY, 42:29-34 (Winter 1965).

[2] Elmo Roper and Associates, *New Trends in the Public's Measure of Television and Other Media*, Television Information Office, New York, 1964; Elmo Roper and Associates, *The Public's Attitude Toward Television and Other Media*, Television Information Office, New York, 1962; Robert U. Brown, "Shop Talk at Thirty," *Editor & Publisher*, May 1, 1965.

[3] Westley and Severin, *op. cit.*

[4] James E. Brinton, Chilton R. Bush and Thomas M. Newell, *The Newspaper and The Public* (Stanford University, Institute for Communciation Research, 1957).

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dents, political independents and officers in organized groups.[5]

Later, Carter and Greenberg demonstrated that the greater believability of television was due in part to the respondents' greater faith in news they could see, or at least in the commentator presenting it. They also found demographic and socio-economic correlates of media preference, which supported certain of the Westley-Severin findings.[6]

Still earlier studies, particularly the "image" studies done at Michigan State and Wisconsin, made cross-media comparisons, but did not look for correlates of the images by media. Tannenbaum and McLeod, for example, pointed out that the several mass media are judged in terms of the same basic dimensions, but that the strength of the dimensions varies from medium to medium: in judgments of newspapers, the ethical dimension is far more critical than in perceptions of television; the reverse is true with the potency dimension.[7]

Only in the more recent studies (Westley and Severin in particular) was any consideration given to isolating correlates of media credibility among the different media. In none of them was any attempt made to hold one potential correlate constant while examining the relationship of a second to either media credibility or media usage. This means that where a significant relationship between education and media credibility was demonstrated, we have no evidence as to whether that relationship remains the same, increases or disappears for different sexes, age groups, social classes, etc.

Such multi-variate analysis is the basic means of uncovering a) the possibility of spurious relationships, where one variable apparently related to a dependent criterion "washes out" when another is introduced, and b) where a correlate is independent of another, i.e., the multiple relationship of two or more variables with credibility or usage is stronger than the original single-variable relationship.[8]

Samuelson, Carter and Ruggels have demonstrated the value of this procedure. To test the hypothesis that education is positively related to television viewing time, contrary to much prior evidence, they successively introduced the control variables of time spent with other media and time spent in role-related activities. This part-correlation technique partially supported their hypothesis.[9]

Method

The present data were gathered from two telephone surveys. In each, a telephone directory sample was drawn, using every *n*th listing. In spring, 1964, a survey in San Jose, California, netted 522 interviews, with an 88% completion rate.[10] Of these, a random sample of slightly less than 200 persons had been asked the two media questions which will be examined here. In November, 1964, a comparable survey was conducted in Lansing, Michigan, which yielded a second group of 300 respondents, with an 84% response rate.[11]

[5] Westley and Severin, *op. cit.*

[6] Carter and Greenberg, *op. cit.*

[7] Paul J. Deutschmann, *The X, Y, Z Papers*, Communications Research Center, Michigan State University, 1960 (mimeo); Percy H. Tannenbaum and Jack M. McLeod, "Public Images of Mass Media Institutions," in *Paul J. Deutschmann Memorial Papers in Mass Communications Research* (edited by Wayne Danielson) (Cincinnati: Scripps-Howard Research, 1963) pp. 51-60.

[8] These two questions are analogous to Hyman's P-Type and M-Type analyses. See Herbert Hyman, *Survey Design and Analysis*, (Glencoe: Free Press, 1955), pp. 275-311.

[9] Merrill Samuelson, Richard F. Carter and Lee Ruggels, "Education, Available Time and Use of Mass Media," JOURNALISM QUARTERLY, 40:285-91 (Autumn 1963). For additional examples of this procedure, see Verling C. Troldahl and Robert L. Jones, "Predictors of Newspaper Advertisement Readership," *Journal of Advertising Research*, 5: 23-7 (March 1965), and Bradley S. Greenberg, "Additional Data on Variables Related to Press Freedom," JOURNALISM QUARTERLY, 38:76-8 (Winter 1961).

[10] Carter and Greenberg, *op. cit.*

[11] These data were gathered as part of a broadcasting-election study originated by Prof. Douglas Fuchs of the University of California Department of Journalism. See "Election Day Newscasts and Their Effects on Western Voter Turnout," JOURNALISM QUARTERLY, 42:22-8 (Winter 1965). We thank him for permitting us to add these items to his instrument.

TABLE 1

Media Credibility by Sex, Age and Education
(Percentage who believe TV over newspapers)[4]

	Sex:			
	Male		*Female*	
Age:	<40	40+	<40	40+
Education:				
<13	72%	60%	80%	81%
13+	65%	41%	76%	69%

[4]In each cell, the difference between 100% and the figure given is the proportion who believe newspapers over TV, e.g., 28% in this cell. The n in each cell is:

36	72	101	98
60	32	54	32

The two key questions asked of each sample were as follows:

"If you got conflicting or different reports of the same news story from radio, television, and the newspapers, which of the three versions would you be most inclined to believe, the one on radio or television or newspapers?"

"From which one of the following sources do you get most of your news about what's going on in the world today — from the newspaper or radio or television or magazines or talking to people or where?"

Subsequently, the first of these two will be referred to as the *media credibility* item, and the second as the *media use* item. In addition, data were obtained on sex, education and age.

Most of the analyses presented here were first done separately for the two samples. Results were sufficiently similar to warrant combining them. Thus the results are based on nearly 500 cases, the number varying slightly due to non-response. Comparisons are restricted to television and newspapers, inasmuch as they accounted for more than 85% of the responses to each of the two criterion questions.

Results

We shall examine the relationship of each independent variable (sex, age and education) with each of the dependent variables (media usage and credibility), the other independent variables successively held constant. We shall also study the single and combined relationships of the independent variables with the two dependent variables taken together.[12]

The media credibility data are summarized in Table 1.

Sex and Media Credibility. The sex of the respondents by itself was significantly related to media credibility: 78% of the women, but only 61% of the men would believe a television news report more than one in their newspaper.

Table 1 demonstrates a consistent sex-by-age interaction.[13] For those under 40 with no college, the difference between men and women who trusted television more was 8 percentage points; with more education, the difference was 11%. However, for those over 40 with no college, the percentage difference was 21 and with more education, 28. Thus sex was a significant predictor, but it was a significantly better predictor in the older

[12] The data described in the results section are derived from 39 separate contingency tables. To make the desired points in this paper and to keep it to minimal length, only the principal findings are labeled and described. A complete set of tables is available from the author.

[13] These analyses in which two independent variables are controlled simultaneously required some collapsing of categories. Education was collapsed from four categories (less than 12 years, 12 years, 1-3 years college and more than 3 years college) to two (12 years or less education vs. more than 12 years); age was collapsed from four categories (under 30, 30s, 40s, and over 50) to two (under 40 vs. 40 and over.)

group. Taking account of educational level made the prediction only slightly better.

Education and Media Credibility. For the entire sample, the less educated were more likely than the better educated to believe the television version of a news story than the newspaper version. Among those who did not complete high school, 80% said they would believe the TV report; for those with high school, 71%; with some college, 66%; and with a college degree, 63%. (Note that a substantial majority in all educational categories believed television over newspapers.)

In examining the function of education in predicting credibility, age is an even better predictor than sex. The educational difference for women under 40 was 4 percentage points; for men under 40, 7; for those over 40, the difference between educational levels among women was 12, among men, 19. (Table 1).

Thus the general relationship between education and belief in one medium is tempered by knowledge that the association holds primarily among persons 40 and over, and more so for men than for women.

Age and Media Credibility. Among respondents under 30, 72% chose television as the medium they would believe; 78% of those in their 30s made the same choice, 74% of those in their 40s and 63% of those 50 and over. Although there was very little difference among the three younger groups, the difference among the four age categories was a significant one. Obviously, the locus of the difference was among the oldest respondents, but it is weaker than that obtained for sex and education.

This is partly explained by examining sex as a control variable. Among the men, the younger were more likely than the older to choose television: 67% of those under 30 and 51% of those over 40. For intermediate ages, the proportions fell between these extremes. Among women, however, the relationship was not linear: 76% of those under 30, 83% of those in their 30s, 86% of those in their 40s, and 72% of those over 40 chose television.

The age difference within education categories revealed an age-education interaction. That is, within each educational level, the older respondents were less likely to choose television, and this tendency increased with increasing education. An interaction of this nature was also uncovered in the results which dealt with sex and age.

The age contribution to the prediction of media credibility also took an interactive form. Inasmuch as a nonlinear relationship existed between age and credibility among women, we could only examine the age and credibility relationship, controlling for education, among men. There, the interaction discussed above remained apparent: among men with low schooling, 72% of the younger and 60% of the older chose television; among men with high schooling, 65% of the younger and 41% of the older made that choice.

Media usage data are summarized in Table 2.

Sex and Media Usage. In general, more women (56%) than men (40%) chose television over newspapers as the medium they depended on most for news of the world around them. Holding constant both education and age, the differences between men and women for each comparison in Table 2 were 11, 16, 18 and 15 percentage points.

Thus, sex as a predictor of media usage did not interact with nor could it be accounted for by either age or education.

Education and Media Usage. The relationship between education and choice of newspapers and television for news was of greater magnitude than that obtained between education and media credibility. Of the respondents with no college, 60% said they used television more, whereas only 33%

TABLE 2

Media Usage by Sex, Age and Education
(Percentage who use TV as principal news source)[A]

		Sex:			
		Male		*Female*	
	Age:	<40	40+	<40	40+
Education:	<13	48%	44%	59%	60%
	13+	35%	29%	53%	44%

[A]In each cell, the difference between 100% and the figure given is the proportion who use newspapers as their principal news source, e.g., 52% in this cell. The n in each cell is:

25	68	85	89
51	24	38	27

of those with a college degree chose TV. Intermediate educational levels exhibited intermediate values.

For each sex, the relationship was about the same; for each age group, education showed a consistent relationship with usage. Thus the strong relationship between education and media usage is unaffected by age or sex.

Age and Media Usage. Age alone was not an indicator of media usage. There were only minor differences between age categories in the proportion who chose one medium over another.

Holding sex constant did not uncover any relationships. But this is better understood when we examine the responses of different age groups for varying levels of education. Among both those with 12 or less years schooling, more of the younger respondents depended on television; with some college, the difference disappeared; with a college degree the relationship went in the opposite direction.

It is plausible that for many younger citizens—the first generation exposed to television throughout their formative years—the visual medium is more believable while the print medium retains its role as the primary *news* disseminator. This is so primarily among the better-educated young people.[14] Holding constant both sex and education simultaneously, and collapsing the categories necessary to do so, would only mask this finding.

In Table 3, the basic typologies consisted of isolating those individuals who answered "newspapers" to both the usage and credibility items, those who answered "television" to both, and the two groups who chose newspapers in one area and television in the other. However there were sufficient cases to analyze only three of these types: the TV Type consisting of the 46% who chose television in response to both the credibility and use items, the Newspaper Type containing 24% who responded with newspapers to both items and the Mixed Type, the 24% who found television more credible but relied primarily on newspapers as their news source.

Sex: Media Usage and Credibility. By sex alone, the TV Type contained one-fifth more women than men, the Newspaper Type about one-eighth more men than women. This reflected a relationship between sex and both news source and believability. There was no significant sex difference in the Mixed Type.

For each of these types, the sex distribution was examined while controlling simultaneously for age and education. The difference between men and women was about the same except that

[14] This set of behaviors is what occurred in what we have labeled the *Mixed Type*, and the data support the above proposition: 36% of the younger, better-educated males, but only 22% of the older ones were of this type.

the younger, less-educated men were almost as likely to rely on TV as young, less-educated women.

For the Newspaper Type, a pattern emerged that was evident in the earlier, separate analysis of media usage and credibility. Consistently for each education and age category, more men than women were represented, but this was particularly so for the older respondents of high education. For both education levels of respondents under 40, there was a 9 percentage-point sex difference; for the less-educated over 40, this difference was 14; and for the more educated over 40, the difference was 26.

The single group of individuals who exhibited maximum reliance on the newspaper both as a general news source and as a credible vehicle were older men with at least some college background.

Education: Media Usage and Credibility. The TV Type is heavily skewed toward the low educated: Among those with less than 12 years schooling, 59% both believed and used television more so than newspapers, compared with 32% of the college graduates. In the Newspaper Type, the difference was in the opposite direction. For the Mixed Type, the difference was not significant.

Controlling for both age and sex within the TV Type, the educational differences remained relatively constant. Within the Newspaper Type, however, the educational difference disappeared for all groups except males 40 and over. This finding coincided with those obtained in previous analyses.

Age: Media Usage and Credibility. There was no straightforward relationship between age and any of the types. None would be anticipated from the earlier findings.

We can use the typologies, however, to test the proposition that some younger, better-educated people are more like ly to belong to the Mixed Type, men more so than women, inasmuch as no relationship between age and either dependent variable was found among women.

The TV Type contained more younger, less-educated men than older ones and more younger, better-educated women, than older ones. The Newspaper Type had more older than younger, better-educated men. The Mixed Type contained the same relationship among the better-educated men: 36% of the younger, and 22% of the older were of this type. This supports the contention that education and media accessibility lead to greater reliance on the

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TABLE 3

Media Usage and Credibility by Sex, Age and Education

	Credibility Choice:			
Usage Choice:	*TV*	*TV Paper*	*Paper TV*	*Paper*
Sex, Age, Education[A]				(Row n)
1. Male, Young, Low	50%[B]	18	5	27 (22)
2. Male, Young, High	27	36	11	26 (44)
3. Male, Old, Low	37	24	8	31 (62)
4. Male, Old, High	22	22	8	48 (23)
5. Female, Young, Low	58	19	5	18 (78)
6. Female, Young, High	50	26	6	18 (34)
7. Female, Old, Low	57	23	3	17 (89)
8. Female, Old, High	39	30	9	22 (23)

[A] For age, Young designates those under 40; for education, Low designates those with high school or less.

[B] This percentage is to be read as follows: 50% of the young men of low education choose TV both as their primary source of information and as more credible than newspapers. Each row sums to 100%.