What's In a Name? Bibliometric Analysis of 40 Years of the *Journal of Broadcasting (& Electronic Media)*

Ronald E. Rice, John Chapin, Rebecca Pressman, Soyeon Park, and Edward Funkhouser

This study analyzed citation data involving a "core" set of 17 communication journals from 1977 through 1993, measures of the Journal of Broadcasting & Electronic Media*'s influence within the communication discipline, most-frequently cited author and publication data collected from the* Social Science Citation Index, *a citation matrix hand-culled from 27 communication journals in 1990, the semantic patterns of words in the titles of all the articles from the past 40 years, and the semantic relationships among the topic categories assigned to those articles. Special attention was paid to the periods of time preceding and following the* Journal*'s 1985 change in title and mission. These analyses reveal shifts in the patterns of citations, article title words, and topics. While the editorial board was correct in its assessment that the* Journal of Broadcasting *did not accurately reflect the research of the prior few years, the Journal continues to be a cohesive whole in thematic content, impact, and standing in the network of communication journals.*

The *Journal of Broadcasting* was one of the first journals in the communication field. In 1985, its 30th year, the title was changed to the *Journal of Broadcasting & Electronic Media*, and a new editorial mission statement was developed, to reflect changes in the institutional, theoretical, and methodological aspects of broadcasting and new media. The 40th anniversary of the *Journal of Broadcasting & Electronic Media* provides an excellent opportunity to identify changes in scholarship following this naturally occurring transition. Bibliometric analysis allows us not only to assess

***Ronald E. Rice**, (Ph.D., Stanford University, 1982) is Professor of Communication, Information & Library Studies, Rutgers University, where **John Chapin, Rebecca Pressman,** and **Soyeon Park,** are Ph.D. Candidates. **Edward Funkhouser**, (Ph.D., Ohio University, 1979) is Associate Professor and Associate Head of the Department of Communication, North Carolina State University.* *The authors acknowledge the considerable efforts of Dr. Christine Borgman, University of California, Los Angeles, in helping to collect a major portion of the citation data analyzed here, for prior journal citation analysis publications with Dr. Rice and others. We also thank Elizabeth Perse for her comments on a draft of this article.*

Journal of Broadcasting & Electronic Media 40, 1996, pp. 511–539.

the impact and evolution of this journal, but also to take a look at the network of communication journals that currently represent the field.

Exhibit 1 shows the missions and recommended topics for research of the eight editors to date. The following purpose statement of the Broadcasting Education Association stood as an initial indication of the content of the Journal:

> The purpose of this organization is to secure mutual advantages that flow from a continuing relationship between broadcasters and institutions of higher learning which offer a high standard of training and guidance for those who plan to enter the profession of broadcasting.[1] (Association for Professional Broadcasting Education, 1957)

Exhibit 1
40 Years of Editors, Missions, and Topics

Editor/ Affiliation	Years	Mission	Recommended Topics
Journal of Broadcasting			
Robert Summers USC	57-59	Relationship between broadcasters & educators	Legal decisions History
John Kittross USC, Temple	60-71	Forum for discussion of professional problems	Broadcasting education
Christopher Sterling Temple	72-76	(unstated)	
Joseph Dominick U. of Georgia	77-80	(unstated)	
Thomas McCain OSU	81-84	Role of telecomm. in society Improve journal reputation, quality, utility	Impact of delivery systems Importance of change
Journal of Broadcasting & Electronic Media			
Alan Rubin Kent State U.	85-88	Recognize dynamic comm. environment	Role of elec. media for individuals & society History & criticism Aesthetics & production values International comm. Social responsibility
Alison Alexander U. of Mass.	89-91	Reflect diversity of the field	Role of elec. media for individual and society Economic, policy, programming History & criticism Aesthetics & production International concerns New technologies
James Potter Indiana U.	92-94	Foster diverse community of scholars	(unstated)

The quarterly editorials of the early editors emphasized the relationship between broadcasting and academics and the effects of television on society. Indeed, many early articles concerned broadcast education and provided dissertation bibliographies.

The first mission statement, written by incoming editor Thomas McCain, appeared in the last issue of 1980. It focused on the role of telecommunications on society. McCain (1981) looked at changes in the Journal and society over the prior 25 years:

> Different things were problematic in 1958 when Rolf Meyersohn asked "What happens to radio listening when the TV station hits town?" Today broadcasters and broadcast scholars wonder what happens when cable, video discs, direct satellite transmissions and the like "hit town." (p. iii)

This statement was the first editorial hint that "delivery systems" were having an impact on society and thus on the Journal. McCain's (1984) last treatise on change appeared in the last issue of the *Journal of Broadcasting* (JOB) under that name and under his editorship. He asserted that changing the title of the Journal was one of those times when "what things are called" matters. McCain believed that the old title accurately described what had been published in its first 25 years, but was not capturing then recent issues or future directions.

So the Journal's name was changed to the *Journal of Broadcasting & Electronic Media* (JOBEM). The editor of the newly titled journal, Alan Rubin (1985), added that it was the proper time to recognize a more realistic and dynamic communication environment. The shift in title began a trend of concern for improving the scholarly quality and methodological rigor of the Journal reflected in the mission statements and editorial comments of subsequent editors.

For the *Journal of Broadcasting & Electronic Media*'s 35th anniversary issue, Alison Alexander (1991) asked previous editors to contribute articles describing the past, present, and future of the Journal. Christopher Sterling (1991) argued that it played "a far less central role than it used to — or should. Over the past 7 to 10 years," he said, "I feel the *Journal* has become too narrowly identified with but one part of this field" (pp. 105-106). McCain (1991) again focused on change, saying the Journal was at a political-economic crossroad as the broadcasting industry was merging with other entertainment and information service providers.

In 1992 James Potter described his mission as fostering a community among scholars who are geographically scattered, representing a wide variety of academic departments, regulatory bodies, and industries. Thus, it seems that the Journal still maintains its commitment to its original mission of securing mutual advantages from the continuing relationship between broadcasters and institutions. Here we look at relationships among article citations, titles, and topics, to see just how the Journal has

evolved over its publication life. Further, we consider the over-time position of the Journal in the wider communication journal citation network. This more general focus extends considerable prior research on citation studies of disciplinary and scientific structure (using both citation and communication network data) summarized briefly in the following section.

Author and Journal Citation Analysis

Citation data are based on citations made by author(s) in one article in one journal to article(s) in the same or other journal(s). Such data may be used to represent links between authors (one author cites another), associations among authors (two authors and their works are cited in a third author's work), links or associations among documents (specific articles or books), or links among journals (represented by the citing and cited articles) (see Borgman, 1990; Garfield, 1972). As Borgman and Rice (1992) summarize, "Bibliometric data are particularly useful for studying longitudinal trends in scholarly disciplines because of the massive datasets that can be utilized. . . . Bibliometrics, and citation analysis in particular, are most useful for achieving a macro perspective on scholarly communication processes. Bibliometric studies are reliable, in that the data are collected unobtrusively, from the published record, and can be easily replicated by others."

There are, of course, critiques as to the validity and reliability of article citation, author co-citation, and even journal citation data (Rice, Borgman, Bednarski, & Hart, 1989). Nevertheless, citation data are generally considered to be valid, to the extent that the aggregation of citations represents the importance of links between citing and cited documents, and reliable, because idiosyncratic or infrequent citation motivations and errors are washed out by the large numbers and patterns of citations overall (White, 1990).

Several studies of communication journal citation networks are available. Kreps (1982), Paisley (1984), and So (1988) have all found that communication journals are proportionately less cited by other social science disciplines than the reverse. Funkhouser (1996) notes that Wispe and Osborn (1982) found that communication journals cited psychology journals as much as other communication journals. Reardon and Rogers (1988) and Rice and colleagues (Rice, 1990; Rice & Crawford, 1991; Rice et al., 1989; Rice, Borgman, & Reeves, 1988) have shown a clear split between mass media and interpersonal journals. Paisley (1984) considered mass communication, interpersonal communication, and information science to be three subfields of a common discipline, partially because they are all "variable fields," ones that focus on a theoretical variable rather than "level fields," ones that focus on a level of analysis. However, based on citation analysis, he found there was little evidence of any convergence occurring among these subfields, or across communication and information science. Beniger (1988) also argued that there is, in general, an increasing convergence of the concepts of information and communication in social science

and the humanities. He found, however, that the field of communication, as represented by Berger and Chaffee's *Handbook of Communication Science* (1987), does not display this convergence of interest in theories of information and communication.

To analyze a set of journals representing a discipline, one needs to establish a set of "core" journals. There are several ways of doing this. The most familiar and well understood way is to use the "core" set of "fully covered" journals identified by the Institute for Scientific Information (ISI). The *Science Citation Index*, *Social Sciences Citation Index*, and the *Arts & Humanities Citation Index* produced by ISI are commonly used for bibliometric studies because they are very large multidisciplinary datasets, and are available online from several vendors as well as in print. The ISI databases include specific lists of journals that the editors consider to be the core journals of each discipline covered (though these might change over a period of time; see Moed & Vriens, 1989). They "fully cover" the "core" set of journals in their entirety by editorial policy, while many, if not most, abstracting and indexing services selectively index individual articles from journals they cover. LaRose (1989), for example, found only 8.3% to 50% overlap among articles from 12 communication journals in eight indexing and abstracting services in two years' issues (1985-86). Funkhouser (1989) notes that many communication journals, including the *Communication Yearbook* and regional journals, are not included in the ISI indexes.

This study analyzes bibliometric and citation data to describe the *Journal of Broadcasting & Electronic Media*'s role in the citation network of communication journals, and to assess any changes associated with its name change. Analyses refer to the journal as "JOB(EM)" in general, as "JOB" before the title change, and as "JOBEM" after the title change. We here analyze the 17 communication journals identified as the "core" journals in communication, using citation data from the odd years from 1977 through 1993. To detect possible bias due to relying on ISI's definition of "core" journals, we also analyze the 4,587 citations made by articles in 27 communication journals in 1990 to articles in those communication journals in all prior years, hand-collected by Funkhouser (1996).

Method

Data

JOBEM Article, Author, and Topic Index. The *Journal of Broadcasting & Electronic Media* editorial office provided us with a diskette that included, for volumes 1 through 33 (1956 through 1993), a listing of all article titles, with authors, volume, issue, and page numbers, and a listing of topics represented in each article. Multiple topics could be assigned to a particular article. These topics are, then, the equivalent of content codings assigned by the editorial staff of JOBEM. We simply accepted them as assigned, so cannot assess their reliability. We also copied relevant articles, such as editorial mission statements.

Dialog Services Social Science Citation Index. We used the Dialog database #7, Social Science Citation Index (SSCI) (prepared by the Institute for Scientific Information, or ISI), to retrieve entities that cite, or are cited by, other entities. These entities can be authors, journals, or book/chapters (depending on which field is indicated in the retrieval commands). One of the features is a RANK command that allows various statistical analyses and ranking procedures (Basch, 1993). We ranked both the characteristics of JOBEM's cites and the characteristics of cites to JOBEM (not including book reviews), before ($n = 437$) and after ($n = 305$) the change in JOBEM's name. However, as Dialog's SSCI database is limited to entries after 1971, these comparisons involve only publications from 1972 on. For works citing JOB or JOBEM, we used the Dialog EXPAND command, and then assigned variations to and aberrations from the standard journal titles of "J Broadcasting" and "J Broadcast Electron", removing book reviews and self-citations, resulting in 1035 items before, and 446 items after, the title change.

ISI Journal Citation Report. This study used journal citation data obtained from the Journal Citation Reports (JCR) of the Social Sciences Citation Index (SSCI) for every other year from 1977 (when the JCR first appeared) through 1993. The 1977 through 1987 data are taken from the more detailed data analyzed by Rice (1990) and Rice, Borgman, and Reeves (1988). The 1989 through 1993 data were collected by the present research team.

For the 1977 through 1987 data, the 1985 list of 20 "core" communication journals was the basis for the longitudinal analyses as it was the latest list at the time of the initial data collection; 1987 data were collected later to expand the set. These data were also extended by picking up aberrant forms of abbreviation, title changes, and citations made to journals listed in the 1985 core list that were not in the core list of that year, thus ameliorating some of the problems created by the changing journal coverage (see Rice et al., 1989). The 1989, 1991, and 1993 data included all the communication journals listed in Exhibit 2. Analyses comparing journals across the two datasets use the 17 common communication journals.

1990 Journal citation data. We also analyzed an alternative list of communication journals whose citations were hand-collected by recording each citation from and to any article in any of 27 communication journals in 1990. This dataset was used to discover if any of the structure of the communication journal network is lost by relying solely on journals fully covered by ISI. This set of journals can easily be critiqued, however, because of its incomparability with available citation data and prior research, and because it does not include all of the "fully covered" journals. Exhibit 2 contains symbols, full titles, and years included, for the journals from these datasets.

Procedures

Journal influence. Two measures of journal influence are used here. The first is the "journal impact" measure computed by ISI and reported in its JCR. This measure is the number of citations made to articles in one journal by articles in all journals in the Social Science Citation Index in one year, divided by the number of articles published

Exhibit 2
Journals Included in Analyses

Symbol	Journal	Years Included
	Journals Included in 1977-1993 JCR Data:	
CE	*Communication Education*	79-93
CM	*Communication Monographs*	77-93
CO	*Communication*	89, 91-93
CR	*Communication Research*	77-93
HC	*Human Communication Research*	83-93
JB	*Journal of Broadcasting & Electronic Media*	77-93
JC	*Journal of Communication*	77-93
JT	*Journal of Technical Writing and Communication*	77-79, 83-93
JQ	*Journalism Quarterly*	77-93
LA	*Language and Communication*	85-93
ME	*Media, Culture and Society*	83-93
PQ	*Public Opinion Quarterly*	77-93
PR	*Public Relations Review*	83-93
QJ	*Quarterly Journal of Speech*	77-93
SC	*Speech Communication*	85-93
TP	*Telecommunications Policy*	85-93
WR	*Written Communication*	89-93
	Journals Included in 1990 Hand-Collected Data:	
AAA	*Argumentation and Advocacy*	
ACA	*Journal of the Association for Communication Administration*	
CED	*Communication Education*	
CMG	*Communication Monographs*	
COM	*Communication*	
COR	*Communication Reports*	
CQU	*Communication Quarterly*	
CRE	*Communication Research*	
CRR	*Communication Research Reports*	
CSM	*Critical Studies in Mass Communication*	
CST	*Communication Studies*	
CYE	*Communication Yearbook*	
HCR	*Human Communication Research*	
IJI	*International Journal of Intercultural Relations*	
JAC	*Journal of Applied Communication Research*	
JOB	*Journal of Broadcasting & Electronic Media*	
JOC	*Journal of Communication*	
JQY	*Journalism Quarterly*	
MCQ	*Management Communication Quarterly*	
MCS	*Media, Culture and Society*	
PAR	*Philosophy and Rhetoric*	
POQ	*Public Opinion Quarterly*	
QJS	*Quarterly Journal of Speech*	
SCJ	*Southern Communication Journal*	
TPQ	*Text and Performance Quarterly*	
WJC	*Western Journal of Communication*	
WSC	*Women's Studies in Communication*	

Note: Figures for the journal Communication in 1977-1993 are for Cited Only because the automatic indexing algorithms of the ISI cannot distinguish between the word "communication" and the journal name Communication, so citing figures would be extremely misleading (see Rice et al., 1989).

in that journal the prior two years (Garfield, 1972). Kim (1992) evaluated several journal status measures, noting that the "journal impact" measure is easily obtainable from the JCR, is widely used, and controls for variations in the "size" or number of articles in journal volumes. It does not control, however, for different norms for referencing across disciplines, for different lags in publication and citation across disciplines, or for the different status of citing journals.

Note that the 1990 communication journal citations were hand-culled from 27 journals identified by Funkhouser (1996) as potentially better representing the discipline of communication, instead of the "core communication journals" determined by ISI. Thus there is not only no precomputed "journal impact" measure available for those journals in ISI's JCR, but it would actually be impossible to compute one because some of these journals are not "covered" at all in the JCR. Therefore, we report two other overall indicators of a journal's relative standing. The first, computed for both the 17 JCR journals and the 27 journals is the traditional network measure of "in-degree centrality," the extent to which a journal received citation flows from all other pairs of journals (Freeman, 1978/79). The second, called the "Impact Rating," was computed by Funkhouser (1996) for the 27 journals in 1990. It is computed by multiplying three terms: (a) the number of citations received, (b) the percentage of all citations received by a journal that come from other journals, and (c) the percentage of all journals that cited that journal. This measure considers self-citations and low proportional citing by other journals by considering the journal as the work evaluated, and not its articles. Neither of these, of course, is the same as the ISI/JCR "impact measure."

Journal citation clustering and scaling. Four comparative matrices were derived from the citation matrices: pooled before (odd years from 1977 through 1983); pooled after (odd years from 1985 through 1993); pooled overall (odd years from 1977 to 1993); and the single 1990 matrix. Then, we computed four symmetric "similarity" matrices consisting of correlations among the pairs of columns (citations received by pairs of journals). These similarity (correlation) matrices were then analyzed by Johnson's (1967) hierarchical clustering method to detect groupings of journals with similar patterns of being cited by the other communication journals. The relations among the journals in the similarity matrices were visually portrayed by plotting them through multidimensional scaling (MDS). The cluster boundaries were then drawn around related journals portrayed in the MDS plot.

Article title clustering and scaling. The file of complete bibliographic entries for the first 37 volumes of JOB, along with the remaining entries published since then, was processed in several ways. First, the following "article" entries were dropped from the full JOBEM article listing file: editorials, bibliographies, news and notes, dissertation reviews, and the 1-14th annual survey results. Although these all occurred in issues before the change in journal title, and thus indicate some of the differences in orientation between the two journal eras, they were irregularly published and were not research or theory articles. Next, the article entries were ordered by issue number (they were alphabetic by author on the JOBEM diskette). Then, several standard text-management procedures were used to improve the consistency of the words in the article titles (the words were spelled-checked, symbols such as quote marks or

unnecessary apostrophes were removed, variants such as US or U.S. were standardized, plural forms for words were changed to singular forms, related words were converted into a single form, i.e., "advertisements" and "advertising, " and common stop words were removed). Finally, the entries from before and after the journal name change were separated into two files.

These two text files were then separately run through a word co-occurrence program that first counts and alphabetizes all unique words, and then counts the number of times each pair of words appears within each article title (dropping words that only occur once in a title) (Woelfel, 1991). Then the program creates a co-occurrence matrix, where the value in each cell of the matrix is the number of times each pair of words occurs together within an article title, summed across all titles. There is considerable precedent for analyzing relations among words from reference structures such as article titles, reference descriptors, computer-monitored messages, responses to open-ended questions, focus group discussions, etc. (Braam, Moed, & van Raan, 1991; Callon, Courtial, Turner, & Bauin, 1983; Danowski, 1988; Rice & Crawford, 1992; Rice & Danowski, 1993).

The program then applies hierarchical clustering (diameter method) to the respective co-occurrence matrices to identify clusters of words at any given clustering threshold (though the co-occurrence matrix may be also analyzed by other clustering or network programs, see Rice & Richards, 1985). In order to highlight the more frequent word sets, the program was set to cluster only the most frequent words (as indicated in the respective tables and texts). The same co-occurrence matrices were also scaled and plotted via MDS.

Article topic clustering and scaling. The file of topics assigned by the *Journal of Broadcasting* index compilers to articles in the first 37 volumes of JOB(EM) was sorted by volume, and then a topic-by-volume matrix was constructed. The column values for each pair of sequential volumes was combined (for instance, the values for volumes 23 and 24 were combined into Volume 24) to smooth out volume-by-volume variations, and to reduce the size of the sparse matrix. This matrix was divided into the set of relations before and one after the journal name change. Then each of these two submatrices was transformed into a new topic-by-topic matrix whose cell values consisted of the number of times each pair of topics had been assigned to articles in the same pair of volumes. These two topics-by-topics matrices were each then clustered and scaled, to indicate the relative structure of topics covered by articles before and after the Journal's name change.

Results

JOB(EM) Publication and Citation Activity

Publication amount. A total of 1,239 articles were published in JOB(EM) in volumes 1 through 38 (1955-1993). One change associated with the new orientation was the number of articles published per volume. More articles were published per volume before, compared to after, the name change ($M = 33.9$, $SD = 4.4$; $M = 29.0$,

SD = 1.4; $t(36) = 3.4$, $p < .01$), as well as overall across the editors (Sterling, 37.0; Dominick, 36.5; Summers, 33.3; McCain, 32.5; Kittross, 32.3; Rubin, 29.0; Alexander, 29.0; Potter, 29.0; $F(7,290) = 2.8$, $p < .05$). In the 35th anniversary issue, Kittross (1991) provided the most likely explanations for the difference: page length and the number of submissions. Kittross said that in the 1960s, the Journal had to "scrabble" for acceptable content, and frequently reprinted government documents to fill the pages, implying more and shorter articles. In addition, changing features like "News & Notes" and "Research in Brief" contribute to the difference.

Authors, journals, and works citing and cited. As summarized by various portions of Exhibit 3, the information ranked through Dialog shows both continuity and difference between JOB and JOBEM. Both JOB and JOBEM have generally relied on the same journals as sources of citations, and largely the same journals have cited them. The inclusion of *Critical Studies in Mass Communication* illustrates one of the problems associated with relying on ISI's selection of core journals. *Critical Studies* was not indexed before 1989, so it may or may not have frequently cited JOB before this time. The authors most cited by articles in JOB(EM) include some of the major theoretical contributors to the mass communication field. The focus on television in the books and book chapters most frequently cited in JOB expanded to include a broader theoretical scope in the books cited by JOBEM. The theme of *television* links the articles cited by other journals before and after the title change, but the articles after the title change emphasize media theory in addition to a particular medium.

Journal citations and influence. Exhibit 4 shows citations made, citations received, and self-citations within the 17-journal network, 1977-1993. All increased for JOB(EM), with considerable growth after the name change (i.e., citations received of 50, 44, 77, and 56 compared to 118, 19, 109, and 188), with numbers of all three types of citations in the same approximate range as *Communication Research*, *Human Communication Research*, and *Journal of Communication*. Note that there were greater citations and connectedness among communication journals in general (see Rice, 1990).

The value of the Journal's impact factor increased somewhat after the title change (mean for JOB = .36; JOBEM = .43, see Exhibit 5); however, the difference is not statistically significant. This level of impact is slightly above the overall mean of the 17 communication journals.

Exhibit 6 shows that the Journal's centrality, measured by total number of citations received, nearly doubled, a rate slightly higher than the overall growth in citations received by the 17 communication journals (mean citations in 1977-1983 of 209, compared to 354 in 1985-1993, keeping in mind the additional 2 years). Overall, JOB(EM)'s 819 citations received over the period puts it 5th among the 17 journals, or in the top 30%. In 1990, taking into account all 27 of the communication journals rather than just the 17 "core" journals, JOBEM received 219 citations, putting it 13th, or in the top 50%. Thus, including those additional communication journals does alter JOBEM's relative centrality in the communication journal citation network. Using Funkhouser's Impact Rating, JOB(EM) is ranked 13 out of the 27 journals.

Exhibit 3
Journals, Authors, and Works Most Frequently Cited by, Citing, and Published in JOB (1972-1984) and JOBEM (1985-1994)

	Number of Times Cited by		Citing	
Top Five Journals	JOB	JOBEM	JOB	JOBEM
Journal of Broadcasting/EM	216	264	—	—
Journalism Quarterly	100	140	225	89
Communication Research	—	128	71	46
Journal of Communication	89	174	90	35
Public Opinion Quarterly	86	—	—	—
Human Communication Research	—	95	40	21
Television and Social Behavior	54	—	—	—
Sex Roles	—	—	27	—
Critical Studies in Mass Comm	—	—	—	15

	Number Times Cited by	
Top Five Cited JOB(EM) Authors	JOB	JOBEM
(1st Author Only)		
Bradley Greenberg	43	52
George Gerbner	33	33
Alan Rubin	—	47
Wilbur Schramm	28	—
George Comstock	24	—
Dolf Zillmann	—	34
Elihu Katz	22	30

Books/Chapters Most Cited by Articles in: JOB	JOBEM
W. Schramm (1961) *Television in the lives of our children*	G. Gerbner (1986) in *Perspectives on media*
G. Comstock (1978) *Television and human behavior*	E. Katz (1974) in *Uses of mass communication*
R. Bower (1973) *Television and the public*	K. Rosengren (1972) *Sociology of mass communication*

Frequently Cited JOB(EM) Articles (by Articles Published 1972-1995)

1. *Rubin, A. (1983). Television uses and gratifications: The interaction of viewing patterns and motivations, 27, 37-51.*
2. *Dominick, J., & Rauch, G. (1972). The image of women in network TV commercials, 16, 259-265.*
3. *Edwardson, M., Grooms, D., & Pringle, P. (1976). Visualization and TV news information gain, 20, 373-380.*
4. *Baxter, R., De Reimber, C., Landini, A., Leslie, L., & Singletary, M. (1985). A content analysis of music videos, 29, 333-340.*
5. *Potter, W. J. (1986). Perceived reality and the cultivation hypothesis, 30, 159-174.*
6. *Edwardson, M., Grooms, D., & Proudlove, S. (1981). Television news information gain from interesting videos vs. talking heads, 25, 15-24.*
7. *Buckalew, J. (1969/1970). News elements and selection by television news editors, 14, 47-54.*
8. *Davis, R. (1971). Television and the older adult, 15, 153-159.*
9. *Perse, E. (1986). Soap opera viewing patterns of college students and cultivation, 30, 175-193.*
10. *Carveth, R., & Alexander, A. (1985). Soap opera viewing motivations and the cultivation process, 29, 259-273.*
11. *Garramone, G. (1985). Effects of negative political advertising: The roles of sponsor and rebuttal, 29, 147-159.*

Exhibit 4
Citations (Citing, Cited, and Self) Among 17 Communication Journals, 1977-1993

Journal	Year:	77	79	81	83	85	87	89	91	93
Communication Education	Citing	61	128	73	54	0	0	92	59	38
	Cited	23	26	39	43	36	29	11	5	4
	Self	4	11	23	23	0	0	101	67	58
Communication Monographs		0	36	18	18	2	1	115	121	84
		0	28	0	3	85	155	98	81	81
		0	0	0	0	0	0	54	49	40
Communication		49	52	67	119	102	118	6	2	0
		0	2	6	14	13	20	83	80	125
		0	26	52	78	76	78	4	0	0
Communication Research		73	31	42	92	96	107	127	118	138
		60	70	49	145	120	127	47	60	159
		75	50	36	44	37	73	40	46	58
Human Communication Research		0	0	22	155	106	119	98	117	112
		0	0	0	82	64	122	144	133	106
		0	0	0	88	80	54	75	82	25
Journal of Broadcasting & Electronic Media		50	44	77	56	118	81	19	109	188
		50	45	20	62	46	49	79	110	80
		39	33	46	48	52	52	29	45	74
Journal of Communication		128	54	102	105	52	66	69	80	174
		37	89	95	117	141	109	86	134	110
		37	51	60	39	34	35	41	44	60
Journal of Technical Writing and Communication		4	2	0	1	6	7	7	11	0
		0	0	0	0	2	1	0	1	5
		16	29	0	61	31	31	38	42	19
Journalism Quarterly		125	93	50	125	183	149	181	148	208
		113	45	130	95	98	46	54	93	162
		281	251	165	144	202	297	280	285	156
Language and Communication		0	0	0	2	3	0	0	0	0
		0	0	0	0	4	0	0	0	0
		0	0	0	0	5	10	8	14	3
Media, Culture and Society		0	0	0	7	5	45	10	14	13
		0	0	0	17	1	4	5	15	14
		0	0	6	4	4	9	11	19	19
Public Opinion Quarterly		6	13	48	10	5	5	0	0	0
		119	63	60	105	98	58	65	59	99
		65	70	63	65	93	61	57	46	53
Public Relations Review		0	0	0	11	10	19	9	22	5
		6	0	0	2	10	7	2	4	0
		0	0	0	29	19	10	26	48	37
Quarterly Journal of Speech		15	40	21	78	71	79	6	24	35
		103	121	121	127	58	61	84	52	66
		48	70	76	91	69	70	53	77	71
Speech Communication		0	0	0	0	0	0	0	0	0
		0	4	0	14	15	14	6	8	3
		0	0	0	0	8	26	23	19	51
Telecommunications Policy		0	0	0	0	14	0	34	13	19
		0	0	0	7	0	2	4	2	2
		0	0	0	0	18	13	26	33	69
Written Communication		0	0	0	0	18	8	0	9	2
		0	0	0	0	0	0	0	10	0
		0	0	0	0	0	0	17	29	37

Citing: Made by Communication Journals to Other Communication Journals
Cited: Received by Communication Journals from Other Communication Journals
Self: Made by Communication Journals to Themselves (Self-Citations)

Exhibit 5
Impact Factors of "Core" Communication Journals, 1977-1993

Yr	CE	CM	CR	HC	JB	JC	JT	JQ	LA	ME	PQ	PR	QJ	SC	TP	WC
77	—	.06	.70	—	.32	.39	.10	.56	—	—	1.17	—	.42	—	—	—
79	.10	.43	.50	—	.40	.44	—	.33	—	—	.60	—	.68	—	—	—
81	.16	.43	1.12	—	.32	.46	—	.31	—	—	.87	—	.45	—	—	—
83	.21	.74	.85	1.14	.39	.55	.15	.14	—	.34	.64	.13	.63	—	—	—
85	.25	.94	.59	.69	.45	.52	.09	.18	.71	.11	1.20	.11	.24	.41	.25	—
87	.36	.63	.39	.70	.66	.79	.19	.28	.43	.18	.92	.16	.50	.63	.39	.12
89	.43	.83	.50	1.35	.19	.56	.18	.20	.90	.23	.85	.02	.42	.36	.37	.39
91	.39	.87	.75	.82	.46	.50	.26	.23	.52	.45	.82	.42	.72	.50	.39	.78
93	.26	.74	.62	.75	.40	.46	.14	.20	.20	.61	.88	.21	.67	.35	.43	.66
M	.27	.63	.67	.91	.40	.52	.16	.27	.55	.32	.88	.18	.53	.45	.37	.49

Note: "Impact factor" is the ratio of the citations made to articles appearing in the last two years of the journal, divided by the number of articles published in that journal in those two years, as computed by ISI and reported in ISI's Journal Citation Report, using the "core journals" as selected by ISI. Journals have ISI impact factors only for the years in which they appear in the "Core Communication Journal" list.

Journal Network Location

Journals before 1984, after 1984, and 1977-1983. Exhibit 7 shows the multidimensional scaling of the journal network in the six years before JOB changed its title (1977-1983). Because they are based on the columns of the pooled matrices, the clustering and scaling results reflect similarities in how each pair of journals is cited. As found previously, the journals cluster largely into mass communication journals (*Journal of Communication, Journalism Quarterly, Public Opinion Quarterly, Journal of Broadcasting, Communication Monographs,* and *Public Relations Review*) and interpersonal communication journals (*Human Communication Research, Communication Education, Quarterly Journal of Speech, Communication, Communication Research,* and *Speech Communication*) (Rice, 1990; Rice et al., 1988). *Media, Culture and Society* and *Telecommunications Policy,* and *Journal of Technical Writing, Language and Communication,* and *Written Communication* occupied their own isolated clusters in the journal network, based on the journals in each of the two clusters each being similarly cited by the other journals. JOB largely cited, and was cited by, mass communication journals, and is most tightly clustered in this period with PR and CM. The journal's early focus on broadcasting easily explains its placement.

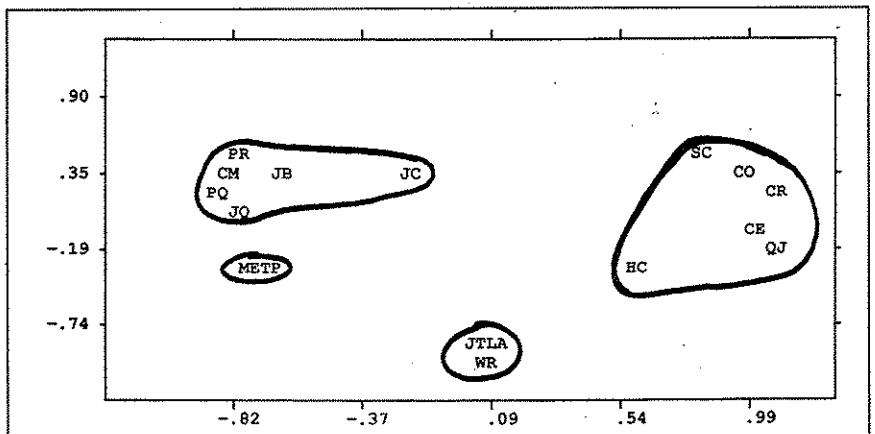
Exhibit 8 shows the clustering and scaling of the journal network after JOB changed its title (1985-1993). The clusters change slightly, indicating that several journals

Exhibit 6
Journal Centrality, 1977-1993 Journal "In-Degree Centrality" and "Impact Rating"

Journal	In-Degree Centrality				Rating Impact
	1977-83	1985-93	1977-93	1990	1990
Argumentation and Advocacy	—	—	—	45	12
Journal of the Association for Communication Administration	—	—	—	37	.3
Communication Education	363	223	565	260	109
Communication Monographs	91	563	632	524	413
Communication	290	469	742	77	12
Communication Quarterly	—	—	—	323	145
Communication Reports	—	—	—	95	5
Communication Research	421	677	1032	256	103
Communication Research Reports	—	—	—	125	10
Communication Studies	—	—	—	356	92
Communication Yearbook	—	—	—	295	186
Critical Studies in Mass Communication	—	—	—	132	41
Human Communication Research	187	721	866	424	323
International Journal of Intercultural Relations	—	—	—	49	2
Journal of Applied Communication Research	—	—	—	90	2
Journal of Broadcasting & Electronic Media	252	586	819	219	80
Journal of Communication	536	707	1166	263	211
Journal of Technical Writing and Communication	7	31	38	—	—
Journalism Quarterly	517	976	1426	288	127
Language and Communication	2	7	7	—	—
Management Communication Quarterly	—	—	—	91	3
Media, Culture & Society	20	112	132	49	5
Philosophy and Rhetoric	—	—	—	62	24
Public Opinion Quarterly	347	379	726	198	124
Public Relations Review	13	66	78	—	—
Quarterly Journal of Speech	487	341	804	418	361
Southern Communication Journal	—	—	—	255	66
Speech Communication	18	46	64	—	—
Telecommunications Policy	7	83	90	—	—
Text and Performance Quarterly	—	—	—	43	.2
Western Journal of Communication	—	—	—	355	120
Women's Studies in Communication	—	—	—	77	3
Written Communication	0	45	45	—	—

Note: In-degree centrality figures computed from pooled citation matrices of the odd years 1977-1983, 1985-93, and 1977-1993, all involving 17 journals from the Core Communication Journal list in the JCR, and the overlapping citation matrix in 1990 involving the 27 journals that were hand-coded based on their published citations. Impact rating figures computed by Funkhouser only for the 27 communication journals.

Exhibit 7
Multidimensional Scaling of Cited Relations Among Communication Journals Before JOB Title Change (1977-1983)



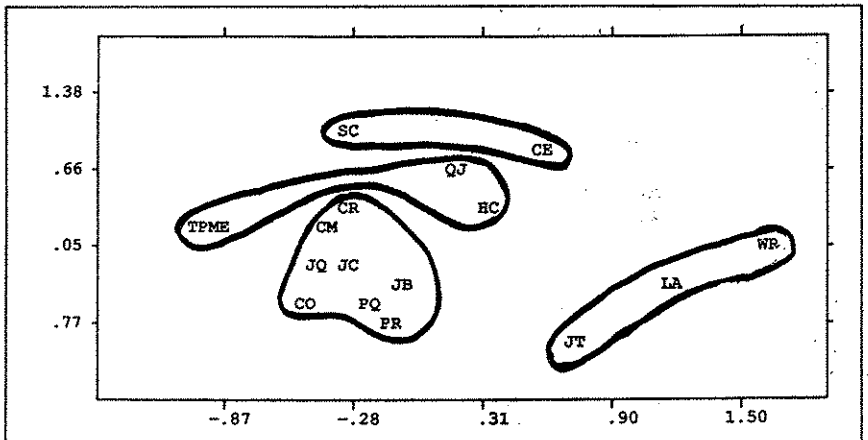
Note: MDS Stress in 2 dimensions is .08

including JOBEM changed their focus over time. The mass communication cluster now includes *Communication Research.* Rice et al. (1988) noted that *Human Communication Research* and the *Journal of Communication* became the bridges between the two clusters of mass and interpersonal communication. JOBEM now becomes the fourth most central journal of the larger cluster, and the second most central mass communication journal (in order: *Journalism Quarterly, Journal of Broadcasting & Electronic Media, Public Opinion Quarterly, and Public Relations Review*). This finding directly opposes Sterling's (1991) concern that the Journal was becoming less central than in previous years. It occupies a location on the edge of the mass media journals, most tightly clustered with *Journal of Communication* and *Journalism Quarterly.* The other two clusters (*Speech Communication* and *Communication Education; Journal of Technical Writing and Communication, Language and Communication,* and *Written Communication*) primarily include isolates that are similarly infrequently cited by the other journals.

Exhibit 9 shows the clusters for the pooled network (1977-1993). The most central journals overall are *Journalism Quarterly, Public Opinion Quarterly, Journal of Communication,* and JOBEM; however these journals are also heavy "self-citers." JOB(EM) occupies a central position in the mass media journal area, again most tightly clustered with *Journal of Communication.*

27 Journals, 1990. Exhibit 10 shows the results using the expanded, hand-counted citation network of communication journals for 1990. Four primary clusters emerge from this matrix. The most familiar is mass communication (*Journalism Quarterly, Public Opinion Quarterly, Communication Research, Journal of Broadcasting &*

Exhibit 8
Multidimensional Scaling of Cited Relations Among Communication Journals After JOB Title Change, 1985-1993

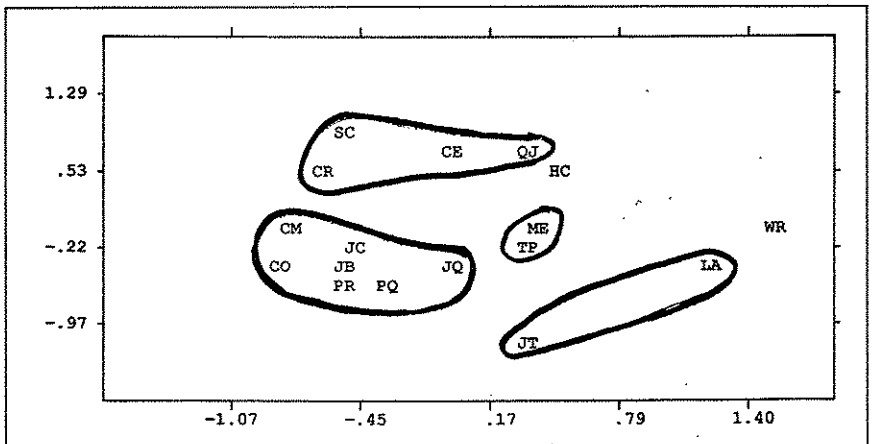


Note: MDS Stress in 2 dimensions is .17

Electronic Media, and *Journal of Communication*) with two cultural/social journals *Media, Culture and Society* and *Communication* located nearby. Both *Media, Culture and Society* and *Communication* have been fully covered by ISI, so their inclusion may be caused by citations from uncovered journals, or more likely by counting all the citations lost in the "all other" category in the JCR (see Rice et al., 1989). The addition of uncovered communication journals places the mass communication/society journals in a cluster more distant from the other journals. The other three clusters may be labeled interpersonal/speech communication (*Human Communication Research, Communication Yearbook, Communication Reports, Women's Studies in Communication, Communication Monographs, Western Journal of Communication, Communication Studies, Southern Communication Journal, Quarterly Journal of Speech, and Philosophy and Rhetoric*), intercultural/education (*International Journal of Intercultural Relations, Communication Education, Communication Research Reports*, and *Communication Quarterly*), and rhetoric/administration/critical (*Critical Studies in Mass Communication, Management Communication Quarterly, Argumentation and Advocacy, Journal of Applied Communication Research, Text and Performance Quarterly*, and *Journal for the Association for Communication Administration*).

The most striking difference between the expanded 1990 clusters and those used for the primary analysis is the inclusion of the "rhetoric/administration" and "intercultural/speech" clusters. The journals representing an entire sub-discipline of communication are not considered "core" journals by ISI. (Whether this should be interpreted as a judgment that rhetoric studies do not typically involve "social science" theories,

Exhibit 9
Multidimensional Scaling of Cited Relations Among Communication Journals, 1977-1993



Note: MDS Stress in 2 dimensions is .17

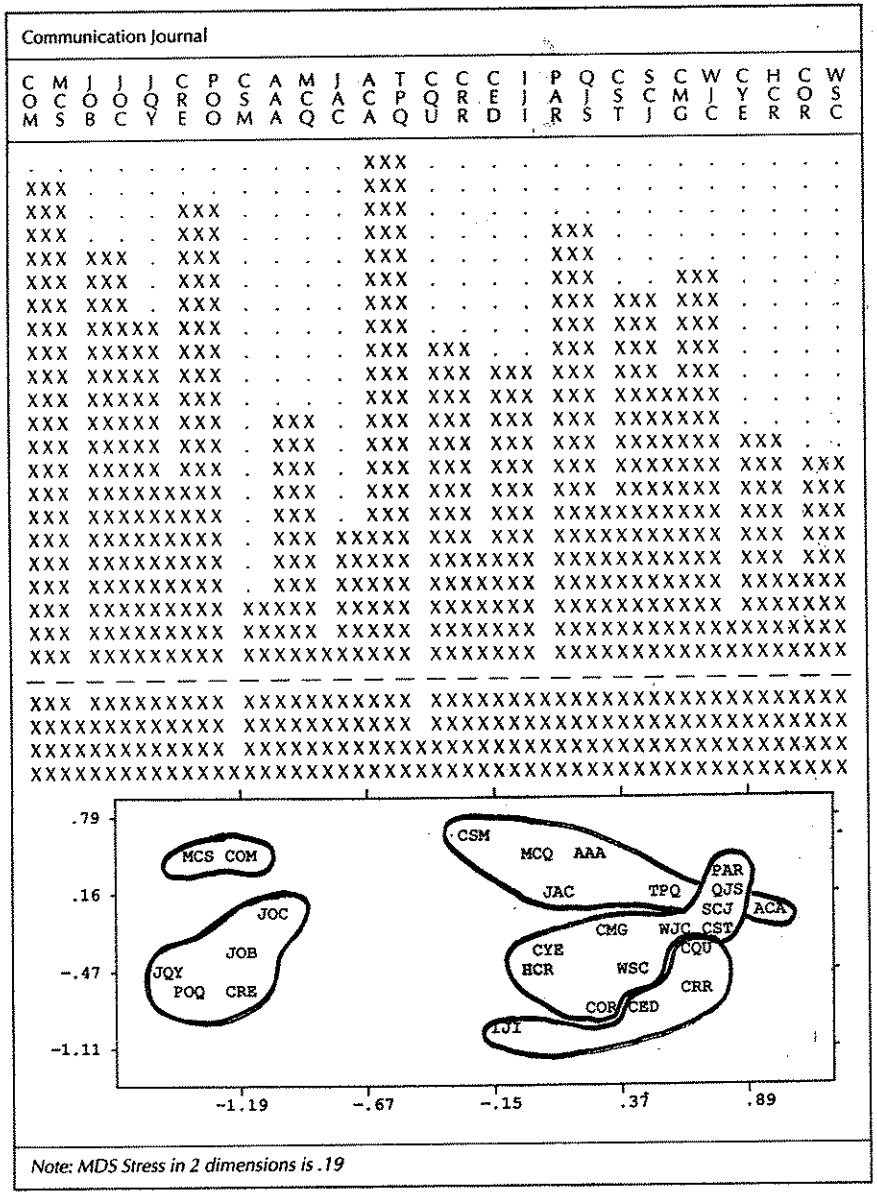
method, or data, or as a result of the relatively small size and citation levels of the journals, is unclear.)

14 International journals, 1986-1990. Hakanen and Wolfram (1995) provide yet another perspective by analyzing five systematically sampled articles from each of 14 international mass communication journals for each year from 1986 through 1990 (i.e., as many as 25 articles from each journal, for a total of 333 articles). Thus these journals overlap the time periods of our data, but focus on a set of journals that emphasize mass communication and international distribution, so the authors could identify whether journals were clustered together on the basis of methodological, theoretical, linguistic, or historical/economic characteristics.

Of the 14 journals, JOBEM had the second-highest number of citations per article (M = 36.4). Its ratio of citations to journal articles to total citations (journal and nonjournal publications), .49, was the highest, followed by *Journal of Communication*'s .44, implying a high reliance on academic, perhaps more recent, publications. Articles from JOBEM, the *Journal of Communication*, and *Journalism Quarterly* are the only ones that tend to cite other journals more than the ones in which they appear. JOBEM is clustered with *Journalism Quarterly*, and, less prominently, with *Rundfunk und Fernsehen* and *Media Asia*, indicating a "more empirical or professional bias" (Hakanen & Wolfram, 1995, p. 212). The two other clusters are identified as (a) "more theory-oriented or critically-biased" (with *Journal of Communication* predominant) and "more descriptive or development communication" (with *Media, Culture and Society* predominant). MDS analysis showed JOBEM in the center of the mass communication journal space, co-located with *Journalism Quarterly*, *Gazette*, and *Critical Studies in Mass Communication*.

Exhibit 10
Hierarchical Clustering and Multidimensional Scaling of Cited Relations Among 27 Communication Journals, 1990

Communication Journal



Note: MDS Stress in 2 dimensions is .19

Topic Clusters

Frequency and percentage of article topics over volumes. As Exhibit 11 shows, across all volumes, the most frequent topics covered by JOB(EM) articles are *regulation/policy, programs/programming, international/foreign broadcasting, history of broadcasting, radio, radio/TV, CC/FTC/FRC, uses of media, stations/networks,* and *children/teenagers.* Topics appearing with more relative frequency after the journal name change include *effects/perceptions, home video systems, interpersonal/family communication, learning/recall, reality, research methods,* and *sex roles/intimacy.*

Topic clustering and scaling overall. Exhibit 12 shows the clustering results based on the correlations of columns of co-occurring topics in consecutive pairs of JOB(EM) volumes. Words that co-occur frequently are identified as clusters. The primary cluster of topics includes *audience, radio, uses of media, regulation,* and *international,* with connections to *advertising, history,* and *economics,* and finally with *production/AV, programs/programming, children, learning,* and *technology/satellites.* The second cluster includes *FCC, public opinion, politics, law/courts, public broadcasting, minority,* and *drama.* The third includes *educational broadcasting, stations, bibliographies, people,* and *ethics.* The final two smaller clusters include (4) *critics/criticism* and *information/knowledge/diffusion,* and (5) *psychology* and *reality.* At more stringent clustering thresholds, more distinct subclusters emerge from these major ones.

Topic clustering and scaling after change. After the journal name change, there are fewer topics and thus fewer tight clusters overall. Exhibit 13 shows the clustering and scaling results for only the most frequent topics in 1985-1993. There is one main cluster with a major subcluster, including topics of *home video, politics, sex roles, economics, history,* [*audience, international, radio, regulation, learning/recall, uses of media, radio/TV,* and *women*]. A second main cluster includes *cable, children, programming, psychological, reality,* and *research.* Three less clustered sets of topics include (3) *characters on TV, advertisements, interpersonal/family communication;* (4) *FCC, public opinion;* and (5) *effects-perceptions, minority,* and *programs.*

Bi-yearly volume clustering and scaling. As McCain and Rubin indicated in their editorial assessments, the Journal needed to change its title and mission to reflect changes already apparent in the communication field, largely having to do with new media and more theoretical and methodological research on effects. So the 30th volume represented the "official" recognition of this evolution. But was this change imposed on a reluctant audience, or did it truly reflect changes actually represented in those most recent JOB articles?

Exhibit 14 shows how the pairs of JOB(EM) volumes cluster together, based on the extent of co-occurring article topics. There are two very clear clusters, portrayed in the MDS plot. The first cluster contains all the volumes up to the 24th (i.e., 1956-1979) and the second contains all the rest (1981-1993). That is, although the two bi-yearly volumes preceding the journal name change are located near their prior

Exhibit 11
Specific Topics Occurring in Articles, in Decreasing Order of Percent Before and After Title Change

Topic	Pct 1955-83	Pct 1985-93	1955-1993 Total	1955-1993 Pct	Topic	Pct 1955-83	Pct 1985-93	1955-1993 Total	1955-1993 Pct
Regulation Policy	6.3	2.5	146	5.8	Characters & TV	4.9	6.1	26	1.0
Programs Programming	6.6	1.5	144	5.7	Employment Bcast	7.1	.0	24	1.0
Intl Foreign Bcast	5.6	4.3	135	5.4	Psychological Vars	4.9	6.4	25	1.0
History Bcast	6.6	1.6	129	5.1	Cable TV	5.9	3.5	23	.9
Radio	6.4	2.2	126	5.0	Critics Criticism	7.1	.0	23	.9
FCC FTC FRC	6.7	1.2	120	4.8	Effects Media Behav	6.2	2.7	22	.9
Uses Media	5.5	4.6	117	4.7	Women	5.3	5.2	23	.9
Stations Nets Orgs	7.1	.0	110	4.4	Info Know Diffus	6.8	1.1	19	.8
Radio TV	5.0	5.9	101	4.0	Theory Issues Comm	6.4	2.0	20	.8
Children & Teens	6.0	3.3	98	3.9	Ethics & Values	7.2	.0	17	.7
Law Courts	7.0	.5	75	3.0	Crisis Special Events	7.2	.0	15	.6
Political Bcast	6.9	.8	75	3.0	Ownership	5.7	4.0	15	.6
Audience Demo	5.7	4.1	68	2.7	Reality	4.1	8.6	14	.6
Education Bcast	7.2	.0	62	2.5	Ascertainment	7.1	.0	12	.5
Prod AV Techniques	6.5	1.9	61	2.4	Effects-Percepts	1.1	16.9	13	.5
Bibliography	7.2	.0	54	2.2	Music	5.5	4.6	13	.5
PO PR Prefs Attitude	6.6	1.5	53	2.1	Dec-Make Gatek Censor	7.2	.0	11	.4
Research Methods	5.5	4.7	47	1.9	Elderly Aging	5.6	4.4	9	.4
Adver Comm Consumer	5.9	3.6	44	1.8	Management	6.3	2.2	9	.4
Economics	6.2	2.7	44	1.8	MPictures Film	6.5	1.8	11	.4
People Professions	7.2	.0	39	1.6	Pers Prop Att Change	7.1	.0	9	.4
Learn & Recall	4.6	7.2	36	1.4	Religious Bcast	5.2	5.5	11	.4
Minorities	6.5	1.7	34	1.4	Sex Roles Intimacy	4.3	8.0	10	.4
News Report Comment	7.2	.0	33	1.3	Society & Culture	6.5	1.8	11	.4
Tech Satellites	5.6	4.2	33	1.3	Access	7.2	.0	6	.2
Public Educ Bcast	6.9	.7	29	1.2	Copyright	7.1	.0	4	.2
Drama Serials	7.1	.0	27	1.1	Future Bcast	7.1	.0	5	.2
Intper Family Comm	4.4	7.9	28	1.1	Home Video Systems	2.9	12.0	5	.2
Violence Aggression	6.1	3.0	27	1.1	Humor	7.2	.0	6	.2
					Computers	.0	20.0	1	.0

Exhibit 12
Clustering of Frequent Topics in JOB(EM) Articles, Based on Co-Occurrence of Topics in Bi-Yearly Volumes, 1955-1993

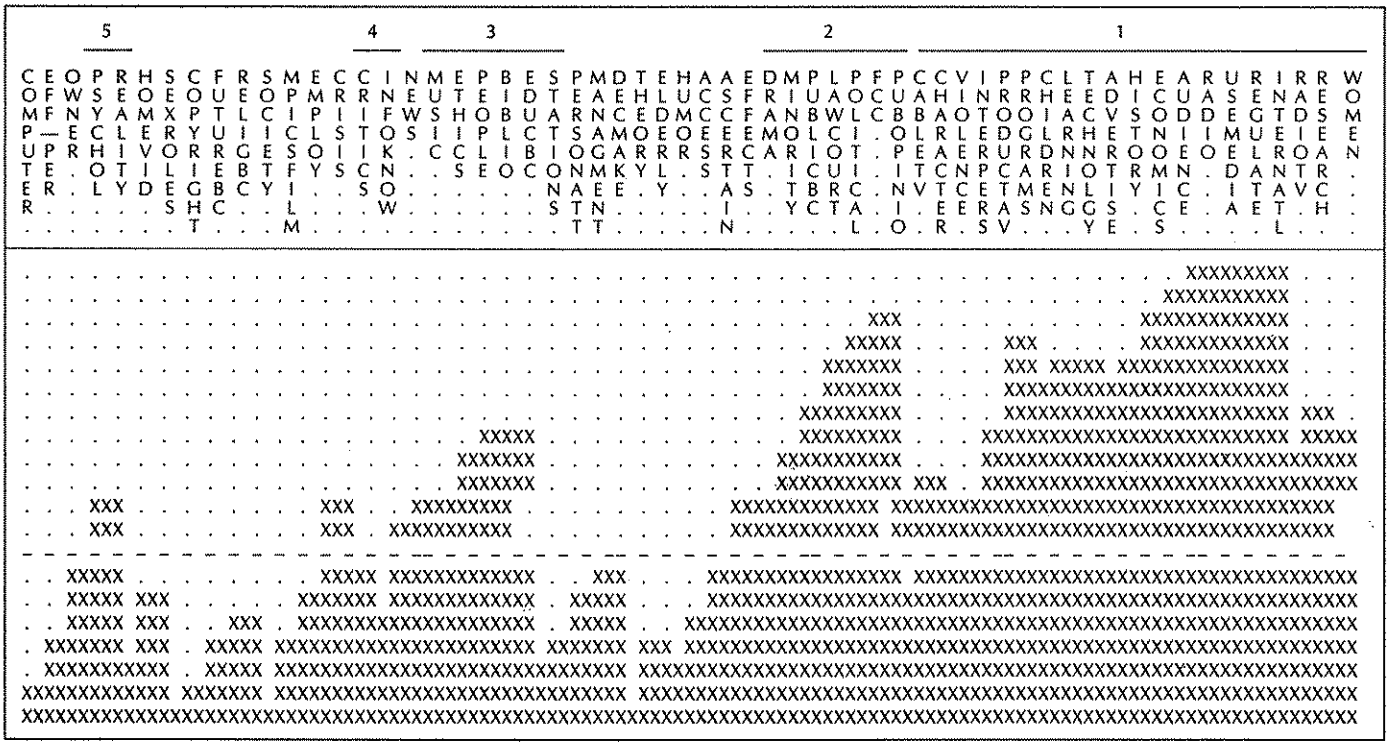


Exhibit 13
Hierarchical Clustering of Frequent Topics Based on Co-Occurrence in Bi-Yearly Volumes after Title Change, 1985-1993

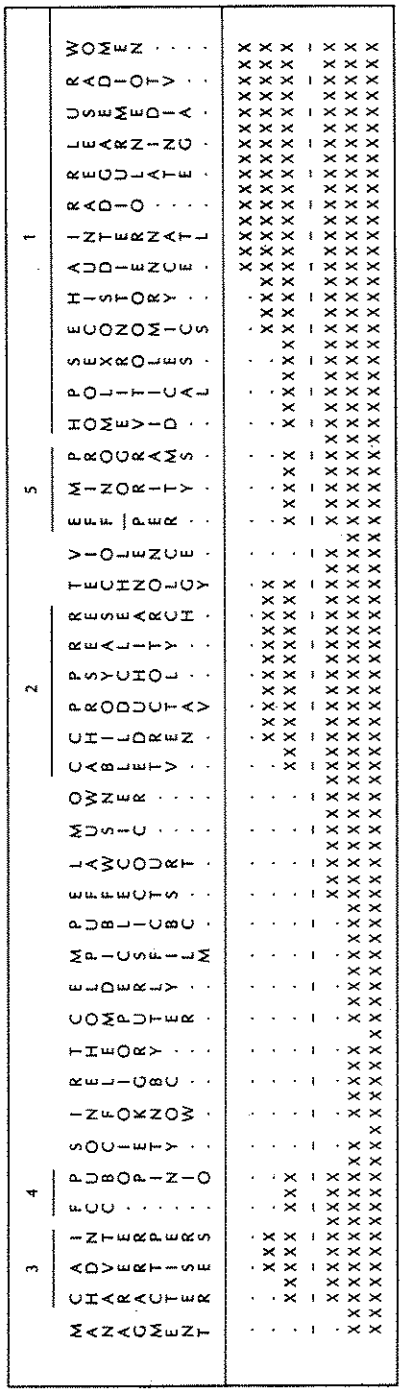
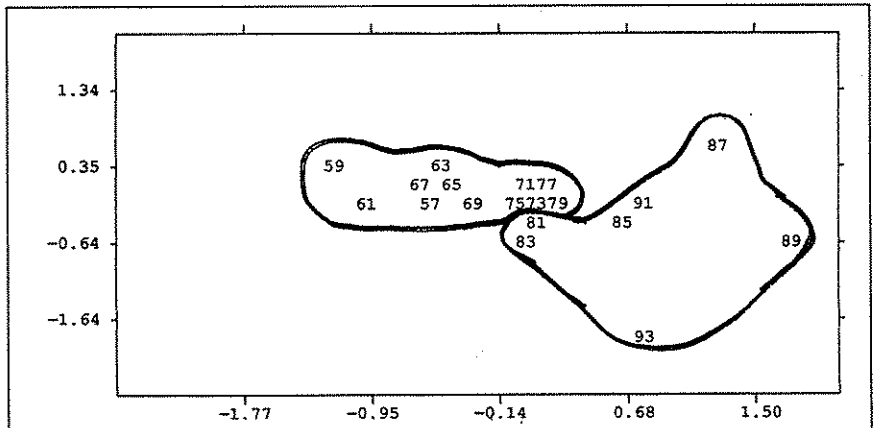


Exhibit 14
Multidimensional Scaling of JOB(EM) Bi-Yearly Periods, Based on Co-Occurring Article Topics, 1955-1993



Note: MDS Stress in 2 dimensions is .11.

years in MDS space, they are actually clustered with the subsequent volumes. This represents a re-focusing of topics in the published articles, essentially breaking free of the prior years once the title change formalized the evolution. This is perhaps the clearest evidence of a simultaneous restructuring of JOB(EM): The change both reflected inherent developments as well as influenced greater distancing in topics published in the years after the journal name change.

Title Words and Clusters

Frequency of title words before and after name change. We can look in even greater detail in changes in semantic content of articles published before and after the journal name change. Typically, indexing terms (such as the "topic" terms used to code the JOB(EM) articles) change very slowly, and thus tend to be more conservative in reflecting changes in actual content (here, research topics). So describing the words actually used in the article titles will provide a more fine-grained summary of the research interests in JOB(EM) articles. Exhibit 15 lists the 200 most frequent unique words, in descending order, appearing in article titles from 1955-1983. Clearly, articles were predominantly about *broadcast media, institutions, content, audiences, education, policy*. Articles published after the name change were about similar topics, as Exhibit 16 shows, but with greater emphasis on *cognition and memory, information processing/comprehension, research, perception,* technologies such as *videotex,* diversity issues such as *gender* and *race, children* and negative issues such as *victimization* and *deprivation.*

Exhibit 15
Number and Percent of 200 Most Frequent Words in Titles of JOB Articles Before Journal Title Change, 1955-1984

Frq	Pct	Word	Frq	Pct	Word	Frq	Pct	Word	Frq	Pct	Word
354	6.30	television	15	.27	preferences	10	.18	ascertainment	7	.12	comparative
206	3.67	broadcast	15	.27	national	10	.18	sex	7	.12	renewal
112	1.99	radio	15	.27	critic	9	.16	history	7	.12	appeal
71	1.26	news	15	.27	international	9	.16	law	7	.12	video
60	1.07	children	15	.27	decision	9	.16	state	7	.12	white
57	1.01	effect	15	.27	coverage	9	.16	private	7	.12	technology
53	.94	media	15	.27	case	9	.16	ownership	7	.12	life
49	.87	program	15	.27	versus	9	.16	method	7	.12	teen
44	.78	analysis	14	.25	offering	9	.16	production	7	.12	evaluation
44	.78	station	14	.25	economic	9	.16	graduate	7	.12	interaction
44	.78	public	14	.25	selected	9	.16	family	7	.12	uses
43	.77	study	14	.25	comparison	9	.16	relation	7	.12	adolescent
37	.66	viewing	14	.25	role	9	.16	student	6	.11	canon
37	.66	political	13	.23	court	9	.16	fm	6	.11	35
37	.66	network	13	.23	issue	9	.16	election	6	.11	competition
34	.61	communication	13	.23	development	9	.16	response	6	.11	work
32	.57	information	13	.23	commission	9	.16	community	6	.11	process
30	.53	programming	13	.23	campaign	8	.14	control	6	.11	two
30	.53	audience	13	.23	newscast	8	.14	literature	6	.11	performance
30	.53	mass	12	.21	federal	8	.14	self	6	.11	world
28	.50	regulation	12	.21	criticism	8	.14	legal	6	.11	affairs
28	.50	commercial	12	.21	change	8	.14	right	6	.11	approach
28	.50	survey	12	.21	license	8	.14	evolution	6	.11	camera
28	.50	fcc	11	.20	controversy	8	.14	music	6	.11	german
27	.48	advertisement	11	.20	journalism	8	.14	talk	6	.11	european
26	.46	education	11	.20	profile	8	.14	system	6	.11	reaction
26	.46	perception	11	.20	structure	8	.14	diversity	6	.11	people
25	.45	research	11	.20	year	8	.14	parent	6	.11	adult
24	.43	america	11	.20	service	8	.14	making	6	.11	employees
22	.39	local	11	.20	comment	8	.14	newspaper	6	.11	difference
22	.39	attitude	11	.20	interest	8	.14	value	6	.11	africa
21	.37	college	11	.20	president	8	.14	apbe	6	.11	four
21	.37	content	11	.20	recall	8	.14	soap	6	.11	day
21	.37	behavior	11	.20	fairness	8	.14	access	6	.11	war
20	.36	university	11	.20	women	8	.14	learning	6	.11	trends
20	.36	image	10	.18	britain	8	.14	model	6	.11	three
20	.36	violence	10	.18	profession	8	.14	race	6	.11	reporter
19	.34	cable	10	.18	listen	8	.14	influence	6	.11	primary
19	.34	source	10	.18	first	8	.14	format	5	.09	speech
18	.32	course	10	.18	employment	7	.12	management	5	.09	training
18	.32	problem	10	.18	time	7	.12	look	5	.09	freedom
18	.32	factor	10	.18	canada	7	.12	dissertations	5	.09	theses
17	.30	broadcaster	10	.18	film	7	.12	measure	5	.09	practice
17	.30	usa	10	.18	satellite	7	.12	special	5	.09	civil
17	.30	viewer	10	.18	nab	7	.12	function	5	.09	selection
17	.30	social	10	.18	group	7	.12	exposure	5	.09	union
17	.30	black	10	.18	doctrine	7	.12	rule	5	.09	pay
16	.28	new	10	.18	need	7	.12	older			
16	.28	report	10	.18	characters	7	.12	convention			
16	.28	policy	10	.18	patterns	7	.12	market			
16	.28	drama	10	.18	primetime	7	.12	opera			

Note: Top 200 unique words, after "stop" words excluded, out of 5616 total words and 1766 total unique words.

Exhibit 16
Number and Percent of 200 Most Frequent Words in Titles of JOBEM Articles After Journal Title Change, 1985-1994

Frq	Pct	Word	Frq	Pct	Word	Frq	Pct	Word	Frq	Pct	Word
122	6.92	television	11	.62	gender	8	.45	without	7	.40	repertoire
51	2.89	news	11	.62	VCR	8	.45	deprivation	6	.34	change
31	1.76	effect	11	.62	family	8	.45	generational	6	.34	FCC
29	1.64	media	10	.57	gain	8	.45	aspects	6	.34	development
24	1.36	children	10	.57	videotex	8	.45	coviewing	6	.34	home
24	1.36	content	10	.57	head	8	.45	self	6	.34	relation
23	1.30	broadcast	10	.57	comprehension	8	.45	concept	6	.34	sex
22	1.25	policy	10	.57	awareness	8	.45	traits	6	.34	dimensions
21	1.19	network	10	.57	survey	8	.45	experience	6	.34	camera
20	1.13	viewing	10	.57	call	8	.45	hypothesis	6	.34	movement
20	1.13	perception	10	.57	forces	8	.45	diffusion	6	.34	transformation
19	1.08	cable	10	.57	developing	8	.45	history	6	.34	boards
18	1.02	radio	10	.57	assess	8	.45	depicting	6	.34	constraints
18	1.02	time	10	.57	response	8	.45	franchise	6	.34	incarceration
18	1.02	case	10	.57	frightening	8	.45	campaign	6	.34	chronicle
17	.96	music	10	.57	diversity	8	.45	gratification	6	.34	shanghai
15	.85	analysis	10	.57	victimization	8	.45	coverage	6	.34	critic
15	.85	political	10	.57	system	8	.45	war	6	.34	informal
15	.85	strategies	10	.57	exposure	8	.45	electronic	6	.34	proceedings
15	.85	social	10	.57	interaction	7	.40	video	6	.34	equality
15	.85	communication	10	.57	USA	7	.40	structure	6	.34	Jamaican
14	.79	source	9	.51	primetime	7	.40	film	6	.34	consonance
14	.79	public	9	.51	advertisement	7	.40	new	6	.34	exclusive
13	.74	program	9	.51	soap	7	.40	erosion	6	.34	events
13	.74	study	9	.51	retention	7	.40	regional	6	.34	counter
13	.74	audience	9	.51	listen	7	.40	vulnerability	6	.34	cultural
13	.74	versus	9	.51	In	7	.40	patterns	6	.34	value
13	.74	memory	9	.51	interview	7	.40	shall	6	.34	1948
13	.74	programming	9	.51	miscomprehension	7	.40	speak	6	.34	sibling
13	.74	parent	9	.51	affairs	7	.40	profit	6	.34	interpretations
13	.74	research	9	.51	spending	7	.40	unto	6	.34	rural
13	.74	women	9	.51	reliance	7	.40	continuing	6	.34	act
13	.74	commercial	9	.51	measuring	7	.40	crisis	6	.34	comparative
13	.74	difference	9	.51	corporate	7	.40	disenfranchise	6	.34	evolution
12	.68	cognitive	9	.51	diversification	7	.40	indecent	6	.34	audio
12	.68	talk	9	.51	ventures	7	.40	legal	6	.34	foreign
12	.68	Britain	9	.51	company	7	.40	computer	6	.34	fear
12	.68	recall	9	.51	European	7	.40	bulletin	6	.34	rise
12	.68	America	9	.51	military	7	.40	theorizing	6	.34	determinants
12	.68	reality	9	.51	scale	7	.40	comment	6	.34	appeal
12	.68	international	9	.51	ratings	7	.40	making	6	.34	function
12	.68	reaction	9	.51	influence	7	.40	predictors	6	.34	journal
12	.68	local	9	.51	channel	7	.40	resolving	5	.28	satellite
11	.62	robbery	8	.45	role	7	.40	state	5	.28	economic
11	.62	shogun	8	.45	information	7	.40	improve	5	.28	approach
11	.62	characteristics	8	.45	opera	7	.40	1984	5	.28	attitude
11	.62	recap	8	.45	adolescent	7	.40	visual	5	.28	uses
11	.62	format	8	.45	independent	7	.40	environment	5	.28	college
11	.62	black	8	.45	authority	7	.40	control	5	.28	motivation
11	.62	national	8	.45	1974 to 1984	7	.40	president	5	.28	cultivation

Note: Top 200 unique words, after "stop" words excluded, out of 1763 total words and 751 total unique words.

Title clustering and scaling before and after name change. Hierarchical clustering of the title words on the basis of their co-occurrence in article titles before the journal name change shows that the primary clusters include *children, television,* and *commercial; mass media; broadcast education; surveys,* and *course/college/university offerings; information source; radio station; Federal Communications Commission; local news; case study; program preference; public programming;* and *viewing behavior.*

Clustering the words in article titles after 1985 reveals the following groups of co-occurring words: *effects of television news; case study; network broadcast; cable policy; perception of reality; family interaction; communication media; audience research; program strategies; political commercials; reaction time of children; content analysis; social music; public programming; international and national radio; VCR viewing; memory characteristics;* and *victimization* and *difference.* These clusters represent a more social and political focus, with increased attention to research, perceptions, and cognitive processing.

Discussion

A number of limitations arise as a result of data collection techniques. Both the JCR and online searching have problems associated with them. Rice et al. (1989) reported a number of reliability issues associated with the use of citation data. The following issues would affect this study: (1) Only first-named authors are listed in citation indexes, so that contributions of collaborators are not reflected; (2) Abstracting and Indexing services are not comprehensive: Services use inconsistent criteria for the inclusion or exclusion of journals, and only the most frequent sources of citations are listed in the JCR; thus "weak links" may be missed entirely. Dialog was used to rank frequently cited authors and articles; but Kaufman, Dykers, and Caldwell (1993) point out that all databases do not provide the same access to information, and that online searching does not yield the same results as traditional hand content analysis. Saracevic and Kantor (1991) further warn that online searching is an imprecise art at best, and that individual search strategies can greatly influence what is retrieved. The use of multiple methods by multiple contributors lessens the impact of these issues on our findings, but such limitations should be kept in mind.

A good focus for the discussion is on comments from two previous editors. McCain described the *Journal of Broadcasting* as a good title for describing the contents of the early years of the Journal, but felt it did not accurately depict the few years of research prior and would certainly not characterize ensuing issues. Our findings show just how accurate this assertion was. The themes of articles show a clear difference before and after the title change, with 1983 and 1984 most like the research that follows the change in title and mission of 1985. Changing the title of the Journal, then, responded to recent changes in the field, but may have also stimulated increased submissions and citing of articles with a somewhat expanded focus. Thus differences that occur in the journal network after the title change can be as easily attributed to the research and practice environment as to title or ideological changes to the Journal.

In the 35th anniversary issue, Sterling argued that the Journal, after its change of title and mission, was less central then it had been, could be, or should be due to a more specialized focus. This fear seems to be unfounded. From the progression of mission statements of the editors, it appears the opposite is true; the focus of the Journal has moved on from broadcasting to including new technologies and a variety of theoretical frameworks and methodologies. In terms of centrality, JOBEM is relatively more central within the context of the subdivision of mass communication. Overall, Sterling was correct in stating that JOBEM is more specialized than in the past, but our clusters of the journal networks show this is also the case for the rest of the communication journals. A trend toward increased specialization is also not likely to surprise anyone involved in research today. But he was not correct that JOBEM was less influential, at least with respect to citations among communication journals. While the editorial board was correct in its assessment that the *Journal of Broadcasting* did not accurately reflect the research of the prior few years, the Journal continues to be a cohesive whole in thematic content, impact, and standing in the network of communication journals.

Note

[1] This statement appeared sporadically throughout the 1960s, changed wording in the 1970s, then disappeared in the 1980s.

References

Alexander, A. (1991). Celebrating 35 years of scholarship. *Journal of Broadcasting & Electronic Media, 35,* 1-2.

Association for Professional Broadcasting Education. (1957). Purpose of the Association for Professional Broadcasting Education. *Journal of Broadcasting, 1*(3), inside front cover.

Basch, R. (1993). Dialog's Rank command: Building and mining the data mountain. *Online, 17*(4), 28-35.

Beniger, J. R. (1988). Information and communication: The new convergence. *Communication Research, 15,* 198-218.

Berger, C. R., & Chaffee, S. H. (Eds.). (1987). *Handbook of communication science.* Newbury Park, CA: Sage.

Borgman, C. L. (1990). (Ed.). *Scholarly communication and bibliometrics.* Newbury Park, CA: Sage.

Borgman, C. L., & Rice, R. E. (1992). The convergence of information science and communication: A bibliometric analysis. *Journal of the American Society for Information Science, 43,* 397-411.

Braam, R. R., Moed, H. F., & van Raan, A. F. J. (1991). Mapping of science by combined co-citation and word analysis. *Journal of the American Society for Information Science, 42,* 233-266.

Callon, M., Courtial, J-P., Turner, W., & Bauin, S. (1983). From translations to problematic networks: An introduction to co-word analysis. *Social Science Information, 2*(2), 191-235.

Danowski, J. (1988). Organizational infographics and automated auditing: Using computers to unobtrusively gather as well as analyze communication. In G. Goldhaber & G. Barnett (Eds.), *Handbook of organizational communication* (pp. 385-436). Norwood, NJ: Ablex.

Freeman, L. G. (1978/79). Centrality in social networks conceptual clarification. *Social Networks, 1*, 215-239.

Funkhouser, E. (1989). Problems with the use of citation indexes in communication research. *ACA Bulletin, 69*, 79-83.

Funkhouser, E. (1996). The evaluative use of citation analysis for communication journals. *Human Communication Research, 22*, 563-574.

Garfield, E. (1972). Citation analysis as a tool in journal evaluation. *Science, 178*, 471-479.

Hakanen, E., & Wolfram, D. (1995). Citation relationships among international mass communication journals. *Journal of Information Science, 21*, 209-215.

Johnson, S.C. (1967). Hierarchical clustering schemes. *Psychometrika, 32*, 241-254.

Kaufman, P., Dykers, C., & Caldwell, C. (1993). Why going online for content analysis can reduce research reliability. *Journalism Quarterly, 70*, 824-832.

Kim, M. (1992). A comparison of three measures of journal status: Influence weight, importance index, and measure of standing. *Library and Information Science Research, 14*, 75-96.

Kittross, J. M. (1991). The *Journal* and communication research. *Journal of Broadcasting & Electronic Media, 35*, 101-104.

Kreps, G. L. (1982). Analysis of the interdisciplinary credibility of communication as a social science. *ACA Bulletin, 42*, 40-43.

LaRose, A. (1989). Inclusiveness of indexes and abstracts of interest to students of communication. *RQ, 29*(1), 29-35.

McCain, T. A. (1981). Editor's note. *Journal of Broadcasting, 25*, iii-iv.

McCain, T. A. (1984). Editor's epistle . . . the last. *Journal of Broadcasting, 28*, 485-486.

McCain, T. A. (1991). A future for the *Journal*. *Journal of Broadcasting & Electronic Media, 35*, 115-118.

Moed, H. F., & Vriens, M. (1989). Possible inaccuracies occurring in citation analysis. *Journal of Information Science, 15*, 95-107.

Paisley, W. J. (1984). Communication in the communication sciences. In B. Dervin & M. J. Voigt (Eds.), *Progress in the communication sciences* (Vol. 5, pp. 1-43). Norwood, NJ: Ablex.

Potter, W. J. (1992). Editor's note. *Journal of Broadcasting & Electronic Media, 36*, 1-3.

Reardon, K., & Rogers, E. M. (1988). Interpersonal versus mass media communication: A false dichotomy. *Human Communication Research, 15*, 284-303.

Rice, R. E. (1990). Hierarchies and clusters in communication and library and information science journals, 1978-1987. In C. L. Borgman (Ed.), *Scholarly communication and bibliometrics* (pp. 138-153.) Newbury Park, CA: Sage.

Rice, R. E., Borgman, C. L., Bednarski, D., & Hart, P. J. (1989). Journal-to-journal citation data: Issues of validity and reliability. *Scientometrics, 15*, 257-282.

Rice, R. E., Borgman, C. L., & Reeves, B. (1988). Citation networks of communication journals, 1977-1985: Cliques and positions, citations made and citations received. *Human Communication Research, 15*, 256-283.

Rice, R. E., & Crawford, G. (1992). Context and content of citations between communication and library & information science articles. In J. Schement and B. Ruben (Eds.) *Information and behavior* (Vol. 4, pp. 189-217). New Brunswick, NJ: Transaction Press.

Rice, R. E., & Danowski, J. (1993). Is it really just like a fancy answering machine? Comparing semantic networks of different types of voice mail users. *Journal of Business Communication, 30*, 369-397.

Rice, R. E., & Richards, W., Jr. (1985). An overview of network analysis methods. In B. Dervin & M. J. Voigt (Eds.), *Progress in communication sciences* (Vol. 6, pp. 105-165). Norwood, NJ: Ablex.

Rubin, A. M. (1985). Continuity and change. *Journal of Broadcasting & Electronic Media, 29*, 1-4.

Saracevic, T., & Kantor, P. (1991). Online searching: Still an imprecise art. *Library Journal, 116*, 47-51.

So, C. Y. K. (1988). Citation patterns of core communication journals: An assessment of the development of status of communication. *Human Communication Research, 15*, 236-255.

Sterling, C. H. (1991). Critique of the changing role of the Journal of Broadcasting & Electronic Media. *Journal of Broadcasting & Electronic Media, 35*, 105-107.

White, H. (1990). Author co-citation analysis: Overview and defense. In C. L. Borgman (Ed.) *Scholarly communication and bibliometrics* (pp. 84-106). Newbury Park, CA: Sage.

Wispe, L., & Osborn, C. (1982). Citation patterns in communication: A study of interdisciplinary influences. *ACA Bulletin, 42*, 32-39.

Woelfel, J. (1991). CatPac. [Software program for analyzing word cooccurences]. Buffalo, NY: New York State University Department of Communication.