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# Telecommunications Research Article Productivity in the U.S.: 1985-1993

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**S**CHOLARS have intensified their focus, in recent years, on research productivity as an evaluative measure of communication programs in the U. S . (e. g. Hickson, Stacks & Amsbary, 1993; Hickson et. al, 1989). Such information seems especially important in an era of fiscal austerity measures dating to the late 1980s, which has seen enrollments in mass communication decline (Becker & Engleman, 1990; Becker & Kosicki, 1993). Anecdotal evidence even suggests that communication may be under attack as a discipline, as competition for majors (and dollars) intensifies, and new technology redefines media niches (Atkin, 1993) . The last two years alone have seen proposals to eliminate Canada's leading Journalism school (Western Ontario) as well as radio-television programs at North Carolina, Oregon and Maryland. Less drastic cuts were exacted in the form of administrative consolidation at several other communication programs, including Michigan, Ohio State and U.S.C. (Atwater, 1993; Beasley, 1994).

Although scholarly productivity may not be a panacea for troubled programs, past work (Schweitzer, 1988) confirms a link between productivity and program size which, in turn, acts as a hedge against "downsizing" (Bowen & Schuster, 1986). In addition, individual faculty may be interested in the results of productivity studies as a gauge of their own standing in the discipline. As Greenberg and Schweitzer (1989) note, such information is widely used for internal and external purposes by institutions which find themselves highly ranked. In addition to benefits in student recruitment and external fund-raising, Vincent (1991) summarized productivity-based advantages for faculty:

Those who publish more generally receive higher salaries, larger salary increments, faster promotion, and more "upper-level" classes to teach than those who publish less (p. 840).

This tradition of evaluating research productivity is found in fields ranging from economics (Laband, 1985) to psychology (Cox & Catt, 1977). In the communication field, studies have focused on journal articles in communication generally (e. g. Stacks & Hickson, 1981) as well as mass communication (Schweitzer, 1988), advertising (Soley & Reid, 1983), journalism (Cole & Bowers, 1973) and broadcasting/telecommunication (Vincent, 1984, 1991).

Although the latter provides useful information on the broader telecommunication domain studied here, its scope extends only through the 1980s, and excludes important journal offerings in such allied areas as telematics and law. In addition, Vincent's inclusion of humanistic film journals overreaches the focus of most U.S. "telecommunication" programs, which generally emphasize electronic media (AEJMC, 1993). The present study assesses scholarly productivity in the U.S. from 1985-1993, focusing upon articles addressing broadcasting and electronic media.

Past work suggests that faculty from 15% of U.S. communication programs account for nearly 60% of articles published (Schweitzer, 1988). Some consistency was noted among highly ranked programs, with schools such as North Carolina and Texas—along with most of those in the "Big 10"—ranking highly in several studies (Cole & Bowers, 1973; Schweitzer, 1988; Vincent, 1984; 1991). However, in the only longitudinal analysis of institutional output, Vincent (1991) found a high degree of volatility in rankings between 1984 and 1989. He concluded that numerous institutional moves among the top 36 ranked scholars contributed to changes in school rankings.

Vincent's studies also suggest that assistant professors are doing most of the publishing, followed by associate and finally full professors. Schweitzer (1988) did not, however, find productivity differences by rank. Given the heightened pressure lower level faculty feel to "publish or perish", we expect them to be the most productive group here.

Consistent with the above productivity surveys, we make no attempt to assess the quality of articles published or the journals in which they appear. Acknowledged is the fact that this is a highly selective measure of productivity, one that omits contributions to other journals, books, grant projects, conferences and the like. Even so, as Vincent notes, journal publication is arguably the least biased measure of productivity:

Book publishing is considered to be not a very good predictor of reputational standings, and has also been found to be poorly related with both recent and total career article publication. Chapters in edited volumes and journal refereeing are both seen as indexes of collegial recognition rather than actual productivity (1991, p. 841).

This study differs from previous work in that it focuses upon research addressing electronic media, including contributions on policy and economics. Our results may not, then, be directly comparable to those of earlier studies. The research framework does, however, closely approximate Vincent's analyses of telecommunication productivity in the 1980s, providing an update through 1993.

## METHODS

Our study focused upon articles written by authors with U.S. academic affiliations in communications programs (e. g. departments, schools or colleges of communication, radio-television, mass media, advertising, business communication, journalism, media studies, speech and the like). Contributions from scholars in allied fields to which communication students might have access (e. g. media law studies) were also included. All told, 935 articles

were analyzed, after adjusting for cases that did not meet our criterion definition.

Ten journals were selected for this analysis. Our intention was to examine the more prestigious, national-level journals with an emphasis on media, particularly telecommunications. Most were listed among publications with the highest number of telecommunication authorship credits, according to Vincent's (1991) study. Conversely journals carrying relatively few articles with a mass communication focus, according to Vincent's study, were excluded (e. g. *Communication Education*).

Criterion journals analyzed in previous studies included: *Journalism Quarterly*, *Journal of Broadcasting & Electronic Media (JOBEM)*, *Journal of Communication (JOC)*, *Journal of Advertising Research*, *Journal of Advertising*, *Critical Studies in Mass Communication*, and *Mass Comm Review*. Three other journals, focusing on telecommunication policy, were also added: *COMM/ENT: Hastings University Law Review*, *Journal of Media Economics*, and *Free Speech Yearbook*. Journal issues published from Spring of 1985 through Winter 1992-1993 were analyzed.

### Articles

All articles were coded, including research briefs, although editorials and book reviews were excluded. Articles with a primary emphasis on telecommunication were selected, as identified in the title or the article's first two paragraphs (see Vincent, 1991). Thus, all articles appearing in *Journal of Broadcasting & Electronic Media* were included, provided they met the aforementioned authorship criteria. For remaining schools, the study includes articles addressing traditional broadcast radio and TV, as well as emerging electronic media (e. g. cable, DBS, VCR, teletext, videotext, and interactive video). In short, any article suiting a general definition of telecommunication—as electronic communication across a distance—was included.

In addition, each article was coded on the basis of whether it had a domestic or an international focus. A separate item assessed whether articles addressed law and policy, or issues of media content and/or its influence on audiences. Coding for thirty percent of the volumes were reviewed by two trained coders. Consistent with past work (e. g. Vincent, 1991), reliability was found to be quite high, using Holsti's coefficient of reliability ( $> .98$ ). Author credit was determined in a manner consistent with most past studies (Cole & Bowers, 1973; Schweitzer, 1988), whereby fractional consideration was given according to the number of contributing authors listed. Publication points thus represent the fraction of one total article credit, where 2 authors each get .5, three authors get .34, .33 and .33, four authors each get .25, and so forth. If only one co-author was a faculty member in a U.S. program, then only the fraction attributable to that person was recorded.

Institutional affiliation was ascertained through examination of notes accompanying each article, as was rank (including categories for full, associate and assistant professors as well as instructors and graduate students). In cases where author rank or other identifying information was not included in the article, it was checked against academic directories.

## RESULTS

All told, author credits from 1985 to 1993 totaled 1567, representing 302 different schools. Only institutions with 5.5 or more articles are listed in Table 1. Consistent with past findings (e. g. Schweitzer, 1988), most articles were produced by a handful of schools. The 41 schools listed above generated 53% of our criterion articles, although they comprise only 13.5% of all schools coded. The three most productive programs in Vincent's study—Michigan State, Indiana and Texas—retain their rankings here. Generally, "Big Ten" schools continued their strong showing from recent years, accounting for four of the top ten and eight of the top 30 programs. Alabama, Cleveland State, Georgia, Kentucky, North Carolina,

Southern California and Southern Illinois also show up among the top 25 reported in past studies (Greenberg & Schweitzer, 1989; Schweitzer, 1988; Vincent, 1991).

Similar patterns emerge for publication activity among graduate students (Table 2). All but three schools were ranked among the top 40 for overall productivity, and most every one had a Ph.D. program. Students from the top three programs actually generated as much output as some of the entire schools listed in Table 1. On balance, the distribution of student productivity closely approximates that found by Vincent (1991).

Our findings on rank (Table 3) also confirm past work (e. g. Vincent, 1984), as assistant professors account for the plurality (34.8%) of author credits, followed by associate (26.7%) and full professors (24.5%). Ph.D. students account for another 8.1% of articles, followed by Masters students (4.3%) and Instructors (1.6%).

In examining activity by journal (Table 4), most of the articles published in the study were concentrated in the older mass communication Journals—*Journalism Quarterly*, *Journal of Broadcasting & Electronic Media* and *Journal of Communication*. Journals devoted primarily to law or economics accounted for fewer such contributions, although they're published less frequently than those above. *Free Speech Yearbook* appears annually, while *Journal of Media Economics* only recently (1992) expanded its format to three issues per year.

The overall breakdown for media focus by publication credit was broadcasting (77%), cable (5.2%), other new video technology (10.6%), film (2.4%), telephony (1.8%) and computer mediated communication (3.0%). Additional coding by topical focus reveals that 10.9% of all articles had an international emphasis. Additionally, 12.4% of all articles had a primary focus on law/policy, while the remainder addressed aspects of media audiences or content.

## DISCUSSION

The findings reported here should prove helpful for administrators, faculty and students interested in evaluating publication activity in telecommunication at different schools. It documents a sizable presence of articles on new media, although the vast majority continue to address traditional broadcasting media. The new media "revolution", then, does not translate into a dominant position for articles on newer telecommunication technologies.

This preponderance of broadcasting articles contradicts the strong market presence of cable, which now generates as many jobs as broadcasting and nearly as much revenue (Atkin, 1993; Umstead, 1989; Wirth & Baldwin, 1989). These low publication frequencies naturally stem from the relative youth of nonbroadcast technologies. For example, it's difficult to assess audience uses for videotext when fewer than 5% of homes subscribe.

Another explanation for this distribution, however, lies in inertia; that is, most of the dominant paradigms (e.g. agenda setting, uses and gratifications) have treated the level of the media environment as a constant. In noting that weakness, scholars (e.g. Heeter & Greenberg, 1988; Levy, 1989) have taken important steps to conceptualize media service and modality choice as a dynamically changing variable. Clearly, the proliferation of new telecommunication media presents a promising avenue for replication in communication research.

It is striking that an output of two articles/year can earn programs a ranking in the top 20, while an output of one article could qualify a school for a ranking between 25th and 40th. Roughly 86% of schools coded don't even generate one article/year, on average. This confirms Vincent's (1991) findings, where he attributes low productivity to (1) the youth of the discipline, (2) institutional emphasis on teaching or creative activity, and (3) perceived high teaching loads.

Thus, programs facing heavy teaching loads, including a few with large enrollment in

California, may place a heavier emphasis on teaching than research. Most likely, pressures to escalate teaching loads have increased since the time of past studies, as cash-strapped legislators demand higher teaching productivity (e.g. Atwater, 1993).

Research productivity is not purely a function of school size, then, as only six of those above were among the top ten in terms of undergraduate enrollment during 1992 (Becker & Kosicki, 1993). Since enrollment studies provide data for only the ten largest programs and several schools on our list do not release such figures, a definitive correlation between enrollment and productivity cannot be drawn. The fact that only three of the largest programs are among the the most productive, however, suggests that institutional commitment to research may be a more explanatory determinant of productivity.

One motivation for that research commitment may be the presence of a Ph.D. program, given their strong showing among schools listed here. Even so, it's interesting to note that two schools without a Ph.D. program—Cleveland State and Cornell—rank among our top ten. Thus, a strong M.A. program may also encourage productivity, helping formulate institutional (or departmental) priorities for research.

That graduate students collectively generate half as much output as full professors confirms Vincent's (1991) finding. It seems, then, that the imperative to publish has filtered down to graduate students. Given institutional emphases on research, publication track records may now be viewed as more of a "need" than a "want," by applicants and employees alike.

This study is, of course, limited by the scope of journals analyzed. In focusing on media-oriented journals, we omit important contributions in interpersonal communication journals. The exclusion of international journals presents another limitation, and helps account for the relatively low number of publications recorded for international media and perhaps telecommunication policy.

It is important for communication educators to continue documenting the scope and importance of their research, as declining higher education budgets place greater pressure on administrators to justify budget allocations. This is especially true at a time when communications, as a discipline, has come under attack from those in more traditional disciplines within the humanities (Gaudino, 1989; Atwater, 1993; Atkin, 1993).

Communication programs can justify their place in the academy, given that 50-60% of the workforce is involved in communications-related careers (Porat, 1977; Dizard, 1989). Nowhere will the pace of that growth be faster than the telecommunication field, which will soon subsume \$1 trillion/year, accounting for a sixth of America's G.N.P. In fact, a source on the President's Council of Economic advisors recently noted that job offerings in communications will increase from 3.5 million in 1994 to 4.5 - 5.5 million by 2003, as economic activity in that area doubles (Jessel, 1994). Moreover, the "media imperialism" that the U.S. enjoys throughout the world, including 70-85% of European film markets, now constitutes her largest export sector; such exports now contribute \$60 billion to an otherwise bleak balance of trade for the U.S. ("An entertaining trade surplus", 1993).

This expansion hence marks a new "communications" age—just as steam technology heralded the industrial age 300 years ago. Although engineering and computer science programs have a natural role to play in more applied areas of training and research, the task of investigating uses and impacts of telecommunication technology has fallen upon communication scholars. The present study documents that communication research on new media has gained an important foothold in communications journals, receiving the most exposure in a journal once devoted to print media, *Journalism Quarterly*.

In that regard, the revolution in telecommunication media may enhance the *raison d'être* for communication as a discipline, augmenting the traditional public interest focus of journalism. Research on telecommunication, for instance, can uncover social and market influences of new technologies. Such an understanding of communication functions is

critical at the dawn of a new century, when futurists contend students will need to prepare for five or more career changes in the information economy (Naisbett, 1982). The academy must meet challenges presented by this economic transition, and communication researchers seem particularly well suited to do so.

Future research could analyze the raw number of citations using individuals—rather than institutions—as the unit of analysis (see Greenberg & Schweitzer, 1988). Other approaches might include the number of book volumes or journal pages published, faculty citation frequencies, or output in relation to faculty sizes and teaching loads. The current design provides but one measure of program output and, by implication, commitment to telecommunication research. But, in focusing on peer review journal output, it utilizes the most public and accepted means by which the academy evaluates itself (Vincent, 1991). Given the expanding influence of telecommunications in society, it will be important to repeat this type of research across more comprehensive journal configurations and time intervals.

**TABLE 1**  
**Top 40 Schools Producing Telecommunications Article**  
**Ranked by Author Credit**

<b>Rank</b>	<b>School</b>	<b>Points</b>
1	Michigan State University	46.51
2	Indiana University	35.86
3	University of Texas	24.21
4	Cleveland State University	22.25
5	University of Wisconsin, Madison	19.35
6	University of Alabama	16.80
7	University of Minnesota	16.49
8	Southern Illinois University	15.06
9	University of North Carolina, Chapel Hill	14.33
10	Cornell University	13.00
11	Washington State University	12.34
12	Northwestern University	11.83
13	University of Georgia	11.33
14	University of Kentucky	11.25
15	University of Southern California	11.00
16	University of Maryland	10.92
17	Ohio State University	10.82
18	University of California, Santa Barbara	10.75
19	University of Iowa	10.33
20	Purdue University	10.08
21	University of Massachusetts	10.00
21	Arizona State University	10.00
23	Ohio University	9.00
24	Kent State University	8.91
25	Texas Tech	8.82
26	University of California, Los Angeles	8.66
27	University of Illinois	7.88
28	Memphis State University	7.67
28	Southern Methodist University	7.67
30	Florida State University	7.66
31	Temple University	7.50
32	University of Tennessee	7.33
33	Virginia Polytechnic Institute	6.84
34	Auburn University	6.67
35	Syracuse University	6.58
36	Brigham Young University	6.00
36	Marquette University	6.00
37	University of Oklahoma	5.92
38	Stanford University	5.63
39	California State, Fullerton	5.50
39	Columbia University	5.50
39	Howard University	5.50

**TABLE 2**  
**Ranking of Schools Producing Student-Authored**  
**Telecommunications Articles by Author Credit\***

<b>Rank</b>	<b>School</b>	<b>Points</b>	<b>Overall Rank</b>
1	Michigan State University	9.05	1
2	Indiana University	4.66	2
3	University of Texas	4.51	3
4	Stanford University	2.63	38
5	University of Minnesota	2.58	7
6	University of Wisconsin, Madison	2.25	5
7	University of Southern California	2.16	15
8	University of North Carolina, Chapel Hill	2.00	9
9	Kent State University	1.83	24
10	University of Kentucky	1.75	14
10	San Jose State University	1.75	—
12	University of Iowa	1.50	19
12	University of Georgia	1.50	13
12	Southern Illinois University	1.50	19
15	University of Missouri	1.25	—
16	University of Alabama	1.24	6
17	Texas Tech University	1.16	25
18	Columbia University	1.00	39
18	Ohio University	1.00	23
18	Temple University	1.00	31
18	University of Arizona	1.00	—
18	University of California, Santa Barbara	1.00	18
18	University of Massachusetts	1.00	21
24	University of Tennessee	.99	32

\*More than .99 publication credit.



**TABLE 3**  
**Telecommunications Article Productivity by Rank**

<b>Rank</b>	<b>Author Credits</b>					
	<b>.25</b>	<b>.33</b>	<b>.34</b>	<b>.50</b>	<b>1.00</b>	
Full Professor	22	35	31	121	78	287 (24.5%)
Assoc. Professor	14	22	16	161	99	312 (26.7%)
Asst. Professor	5	42	24	159	177	408 (34.8%)
Instructor	4	2	0	20	3	19 (1.6%)
Ph.D. student	7	29	3	39	17	95 (8.1%)
M.A. student	10	12	1	25	2	50 (4.3%)
<b>Column total</b>	<b>63</b>	<b>142</b>	<b>75</b>	<b>515</b>	<b>376</b>	<b>1171</b>

Note: Excludes information on several multiple-authored articles for which rank identification was incomplete.

**TABLE 4**  
**Ranking of Selected Communication Journals Producing**  
**Telecommunications Articles by Publication Credit**

	<b>Publication Credits</b>	
Journalism Quarterly	277	(29.6%)
Journal of Broadcasting & Electronic Media	225	(24.1%)
Journal of Communication	191	(20.4%)
Journal of Advertising-Research	64	(6.8%)
Journal of Advertising	54	(5.8%)
Critical Studies in Mass Communication	41	(4.4%)
COMM/ENT	35	(3.7%)
Journal of Media Economics	20	(2.1%)
Mass Comm Review	20	(2.1%)
Free Speech Yearbook	8	(.9%)

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