Research Productivity in Psychology Based on Publication in the Journals of the American Psychological Association

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ABSTRACT: Institutions whose members were leading contributors of articles in the 13 journals published by the American Psychological Association over the last 10 years are identified. Composite productivity scores over the 13 journals are then compared with previous reputational ratings of institutions in psychology (Jones, Lindzey, & Coggeshall, 1982; Roose & Andersen, 1970) and also with previous productivity data (Cox & Catt, 1977; Jones et al., 1982). The overall relationship between reputation and productivity is fairly strong. However, school reputation is differentially related to productivity in specific journals. A relatively strong overall relationship is also noted between past and current productivity, but the degree of stability varies greatly from journal to journal. Schools that showed remarkable shifts over time in productivity and/or reputation are identified. Finally, overall productivity scores are adjusted by faculty size. Small but productive schools tend to emerge in this analysis. These results highlight schools in which a large proportion of the faculty publish in APA journals. Results of the entire study are discussed with regard to advising students in their selection of psychology graduate programs.

The quality of work at a college or university in a particular area (such as psychology) has traditionally been assessed in two ways: on the basis of reputation (Cartter, 1966; Jones, Lindzey, & Coggeshall, 1982; Roose & Andersen, 1970) or research productivity (Cox & Catt, 1977; Jones et al., 1982). Despite objections raised about both reputational ratings (e.g., Cox & Catt, 1977; Thoresen, Krauskopf, & Cox, 1975) and productivity indexes (e.g., Levin et al., 1978; Ross, 1978), their usefulness in tracking institutional progress in particular content areas over time appears to be considerable. Two such uses include advising potential graduate students of the institutions that have been historically most active in research in their interest areas and identifying schools that are emerging as major research contributors in particular fields.

The present study represents an update of the findings of Cox and Catt (1977), who considered institutional research productivity, defined by number of publications in the 13 journals of the American Psychological Association (APA), for the 6-year period from 1970 to 1975. This update considers research productivity in those same journals for the 10-year period from 1976 through 1985. As Levin et al. (1978) demonstrated, such productivity scores are best interpreted as estimating the level of research productivity across a number of departments (e.g., psychology, education, business, sociology, psychiatry) as well as nondepartmental units (e.g., counseling center, freestanding research institutes, student services) for an institution. As such, depicting the research productivity of any particular unit, such as a department of psychology, is beyond the scope of this article.

Because of the explosion in the number of journals in psychology, an exhaustive survey of every subarea of psychology is virtually impossible. Consideration of only the journals published by APA may or may not provide an appropriate estimate of an institution's overall productivity in each domain. Books, chapters, and non-APA journal articles certainly also contribute to a school's productivity. However, the generalizability of productivity estimates obtained from an APA journal to a more comprehensive index of productivity has been tested in the domains of counseling psychology (Howard, 1983), industrial/organizational psychology (Howard, Maxwell, Berra, & Sternitzke, 1985), and quantitative psychology (Maxwell & Howard, 1986). In counseling psychology, productivity was estimated via publication rates in five major counseling journals. The loading of the *Journal of Counseling Psychology* on this productivity factor was .68.[1] Similarly, factor loadings were obtained for the *Journal of Applied Psychology* (.68) and for quantitative psychology as estimated by productivity in the *Psychological Bulletin* (.57).

The productivity ratings generated in the present study are considered in conjunction with previous productivity studies (Cox & Catt, 1977; Jones et al., 1982) and reputational studies (Jones et al., 1982; Roose & Andersen, 1970) to determine the degree of agreement be-

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[1] As shown by Werts, Linn, and Joreskog (1974), the factor loadings obtained from covariance structure analysis can be interpreted as generalizability coefficients.

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tween productivity and reputational ratings and to examine more carefully the recent changes in productivity and reputation at various institutions. However, it should be noted that reputational ratings such as those of Roose and Anderson (1970) and Jones, Lindzey, and Coggeshall (1982) are based exclusively on the department of psychology, whereas our productivity estimates are based on the entire institution.

Method

Thirteen APA journals were reviewed for the years 1976–1985. We excluded *Contemporary Psychology* from our review because it contains predominantly invited reviews of other people's work rather than authors' original work. New APA journals (e.g., *Behavioral Neuroscience* and *Psychology and Aging*) were also omitted because they had not been in existence for the entire 10-year time span. From the remaining APA journals, institutional productivity estimates were compiled on the basis of frequency and order of authorship. A single-authored article netted that author's institution a single unit of credit. In multiauthored articles, credit was assigned to institutions proportionately:

$$\text{credit} = (1.5^{n-i})/(\sum_{i=1}^{n} 1.5^{i-1}),$$

where n is the total number of authors and i is the particular author's ordinal position. Hence, second authorship in a co-authored article was given 0.40 credit unit; third authorship in a three-author article, 0.21, and so forth. No credit was given for solicited or unreviewed articles, such as archival reports in the *American Psychologist,* test reviews in the *Journal of Counseling Psychology,* reviews in *Professional Psychology,* or comments and letters to the editor in any journal. Full credit was granted for full-length articles; however, half credit was assigned for brief reports and notes. In this latter regard, our productivity estimates differ from Cox and Catt's (1977).

In light of Levin et al.'s (1978) remarks, no attempt was made to distinguish between departments, research centers, and agencies within an institution. Consequently, our estimates represent the productivity of entire institutions. However, separate credits were assigned to different campuses of the same university or university system. In order to make our list comparable to those compiled by Roose and Andersen (1970), Cox and Catt (1977), and Jones, Lindzey, and Coggeshall (1982), only institutions granting doctoral degrees in psychology were included in the final data set.

The number of psychology faculty/staff was estimated for each institution by using two data sources. First, the APA *Directory* (APA, 1985) was reviewed for each school. Just as psychologists outside a psychology department may publish in APA journals, psychologists outside the department may belong to APA. We do not presume that this index includes all psychologists at an institution. We only assume that the number of APA members will be proportionate to the total number of psychologists in each school. However, some schools may have very high or very low rates of APA membership. Consequently, a second measure of faculty size was obtained from Jones et al.'s (1982) list of the number of full-time graduate faculty in psychology at each institution. This index has the advantage of highlighting those psychologists who are more apt to have research as a part of their job expectations; the disadvantage is that research psychologists outside the department are omitted. For the current study, although both of these indexes are reported for each institution, the larger of the two estimates was selected to compute productivity ratings adjusted for faculty size.

Interrater agreement estimates for the productivity data were obtained by randomly resampling a two-year interval for each of eight preselected journals. Independent raters rescored the subsample, compiling productivity indices for each institution. The rescored ratings were compared to the original ratings over the same set of time intervals. The unit of analysis was a particular institution's total for the time in question. Thus, if a rater correctly scored nine entries for an institution but miscored the tenth, this would count as a complete disagreement because the sum for that institution would be in error. Clearly, the resulting ratio of agreements to agreements plus disagreements is conservative, underestimating the true interrater agreement. In spite of this, interrater agreement was estimated as .96, reflecting perfect agreement in 96% of the ratings. This level is quite good when one considers that an error is as likely to occur in the rerating as in the original rating process. Consequently, the actual percentage of errors in the original ratings is probably closer to 2% than to 4%.

Results and Discussion

To estimate overall productivity, the totals for all 13 journals were summed into a single composite for each school. The top 75 schools on this index are listed in Table 1. Also listed in Table 1 are the previous rank orders for reputation (Jones et al., 1982; Roose & Andersen, 1970) and for productivity (Cox & Catt, 1977; Jones et al., 1982). It should be noted that the Cox and Catt (1977) and the Jones et al. (1982) productivity indexes were different from the current index. The Cox and Catt (1977) index differed from ours regarding the amount of weight given to brief reports and comments as well as the way differential credit was given for co-authorship. A second way in which the Cox and Catt's index differed from ours is that they assigned credit separately for medical and nonmedical departments on a single campus. In contrast, our index credits authorship to the campus regardless of the authors' departmental affiliation. The Jones et al. (1982) index differed from ours in that it was not based upon APA journals alone; instead, their index was calculated for a department by identifying the individual faculty members of the department and counting the number of publications for each individual that appeared

Table 1
Leading Institutions on Multiple Indexes of Reputation and Productivity in 13 American Psychological Association Journals

Institution	Past rankings				Present study (1976–1985)	
	1970 Reputation[a]	1977 Productivity[b]	1982 Reputation[c]	1982 Productivity[d]	Productivity rank	Productivity total
U. of Illinois, Urbana–Champaign	5.0	2.0	10.0	8.0	1.0	255.71
U. of California, Los Angeles	10.0	12.0	7.5	1.0	2.0	242.89
Stanford U.	1.0	7.0	1.0	20.5	3.0	209.82
U. of Wisconsin, Madison	7.0	1.0	15.5	16.0	4.0	203.35
U. of Minnesota	7.0	8.0	7.5	7.0	5.0	199.07
Harvard U.	4.0	28.0	2.0	15.0	6.0	192.72
Yale U.	7.0	3.0	3.5	4.0	7.0	187.63
Rutgers—The State U.	40.5	15.0	30.5	6.0	8.0	177.68
U. of California, Berkeley	3.0	10.0	5.5	28.0	9.0	170.31
U. of Texas, Austin	11.0	6.0	20.0	11.5	10.0	170.18
U. of Washington, Seattle	27.0	17.0	15.5	2.0	11.0	161.98
U. of Michigan	2.0	4.0	3.5	5.0	12.0	156.48
U. of Pittsburgh	40.5	31.0	33.5	19.0	13.0	149.80
Ohio State U.	30.0	5.0	33.5	18.0	14.0	146.38
U. of Maryland	62.5	23.0	52.5	41.5	15.0	133.31
U. of Kansas	40.5	29.0	39.0	3.0	16.0	130.99
Indiana University	14.0	13.0	15.5	40.0	17.0	128.63
Pennsylvania State U.	16.0	14.0	27.5	32.0	18.0	126.02
U. of Pennsylvania	6.0	20.0	5.5	23.0	19.0	121.23
Purdue University	40.5	11.0	30.5	10.0	20.0	120.49
U. of Colorado, Boulder	14.0	21.0	15.5	9.0	21.0	119.30
U. of Missouri, Columbia	62.5	22.0	69.5	17.0	22.0	118.34
U. of Massachusetts	40.5	18.0	39.0	26.0	23.0	110.03
U. of Rochester	20.0	19.0	43.0	36.0	24.0	108.80
Columbia U.	27.0	42.0	39.0	39.0	25.0	108.61
U. of North Carolina, Chapel Hill	24.0	26.0	23.5	37.0	26.0	108.47
Johns Hopkins U.	16.0	46.0	20.0	76.0	27.0	107.78
Northwestern U.	16.0	33.5	27.5	25.0	28.0	104.88
Cornell U.	20.0	59.0	15.5	69.5	29.0	102.23
U. of Iowa	20.0	9.0	39.0	34.5	30.0	100.43
Michigan State U.	20.0	25.0	46.0	22.0	31.0	95.00
U. of Oregon	24.0	27.0	15.5	58.0	32.0	94.87
U. of Connecticut	40.5	39.0	33.5	34.5	33.0	90.65
State U. of New York, Albany	—	—	59.5	24.0	34.0	88.38
U. of California, San Diego	—	37.0	10.0	60.5	35.0	87.48
Arizona State U.	62.5	—	65.0	50.0	36.0	84.98
U. of California, Santa Barbara	—	66.0	39.0	50.0	37.0	83.50
New York U.	30.0	33.5	39.0	56.0	38.0	82.33
U. of Southern California	36.5	49.0	39.0	29.0	39.0	81.94
U. of Illinois, Chicago Circle	—	62.0	52.5	32.0	40.0	81.24
Princeton U.	27.0	60.0	20.0	47.0	41.0	80.67
U. of Georgia	62.5	47.5	59.5	11.5	42.0	79.88
U. of Nebraska	62.5	—	94.0	106.0	43.0	79.78
U. of California, Davis	—	51.0	82.5	47.0	44.0	75.15
State U. of New York, Stonybrook	—	32.0	23.5	27.0	45.0	75.00
State U. of New York, Buffalo	40.5	16.0	46.0	30.0	46.0	73.78
U. of Florida	40.5	44.5	52.5	20.5	47.0	72.77
Duke U.	24.0	54.0	23.5	64.0	48.0	68.73
Carnegie-Mellon U.	30.0	68.0	12.0	60.5	49.0	68.66
U. of Utah	62.5	61.0	52.5	54.0	50.0	68.61

(table continued)

Table 1 (*continued*)

Institution	Past rankings				Present study (1976–1985)	
	1970 Reputation[a]	1977 Productivity[b]	1982 Reputation[c]	1982 Productivity[d]	Productivity rank	Productivity total
U. of Chicago	16.0	41.0	10.0	13.0	51.0	67.15
Temple U.	—	24.0	65.0	73.0	52.0	66.13
U. of South Carolina	—	—	99.5	38.0	53.0	64.49
U. of Houston	—	—	52.5	60.5	54.0	62.79
U. of Delaware	—	—	99.5	95.5	55.0	58.60
Southern Illinois U., Carbondale	62.5	36.0	73.5	43.0	56.0	57.08
U. of Waterloo	—	—	—	—	57.0	56.82
Iowa State U.	62.5	63.0	94.0	41.5	58.0	56.75
Florida State U.	40.5	30.0	56.5	77.5	59.0	55.94
Vanderbilt U.	40.5	38.0	46.0	45.0	60.0	54.92
U. of Virginia	62.5	75.5	33.5	60.5	61.0	52.71
Brown U.	12.0	70.0	27.5	95.5	62.0	52.21
U. of Kentucky	—	47.5	105.5	103.0	63.0	51.79
Washington U., St. Louis	62.5	58.0	56.5	56.0	64.0	51.75
City U. of New York, Graduate School & U. Center	—	64.5	27.5	14.0	65.0	49.79
U. of California, Irvine	—	—	59.5	126.0	66.0	47.67
Wayne State U.	62.5	53.0	82.5	63.0	67.0	47.47
U. of Arizona	62.5	69.0	82.5	84.5	68.0	46.84
Dartmouth College	—	—	—	—	69.0	44.09
Texas A & M U.	—	—	—	—	70.0	43.70
Boston U.	14.5	—	52.5	75.0	71.0	43.25
U. of California, Riverside	—	75.5	94.0	77.5	72.0	41.92
Auburn U.	—	—	118.0	32.0	73.0	41.55
Kansas State U.	63.5	71.0	69.5	82.0	74.0	41.45
Kent State U.	—	44.5	82.5	53.0	75.0	41.40

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[b] Data for 13 APA journals (1970–1975) are from "Productivity Ratings of Graduate Programs in Psychology Based Upon Publication in the Journals of the American Psychological Association" by W. M. Cox and V. Catt, 1977, *American Psychologist,* 32, p. 796. Copyright 1977 by the American Psychological Association.
[c] Derived from *An Assessment of Research-Doctorate Programs in the United States: Social Sciences* (p. 134) by L. V. Jones, G. Lindzey, and P. E. Coggeshall, 1982, Washington, DC: National Academy Press. Copyright 1982 by National Academy Press. Used by permission.
[d] Data for any journal (1979–1980) derived from *An Assessment of Research-Doctorate Programs in the United States: Social Sciences* (p. 134) by L. V. Jones, G. Lindzey, and P. E. Coggeshall, 1982, Washington, DC: National Academy Press. Copyright 1982 by National Academy Press. Used by permission.

in journals covered by the *Social Science Citation Index.*[2] Further, Jones et al. (1982) provided equal and unit credit to each department without regard to order of authorship. Because the Jones et al. (1982) ratings were compiled for the years 1978–1980, which is the approximate midpoint for our data collection effort, the relationship between their productivity ratings and ours may be regarded as a kind of reliability estimate.

Rank order correlations (Spearman's rho) were computed between the three measures of productivity, using both pairwise and listwise deletion of missing cases. As can be seen in Table 2, the current index of productivity correlated .80 ($n = 59$, $p < .001$) with Jones et al.'s (1982) productivity index and .85 ($n = 59$, $p < .001$) with Cox and Catt's (1977) earlier index of productivity, using listwise deletion. The 1977 and 1982 productivity ratings correlated .75 ($n = 59$, $p < .001$) with each other. The higher correlation between our index and Cox and Catt's (1977) than between ours and Jones et al.'s (1982) probably reflects the similarity in the way our and Cox and Catt's indexes were compiled. All these correlations are high, reflecting both the reliability of the indexes and stability of school productivity over time. Nevertheless, 28%

[2] Jones et al. (1982) also included in an appendix a productivity index that was based on institutional representation in the *Science Citation Index.* We have not included this productivity measure in our analyses because we believe that the primary Jones et al. productivity measure, which was obtained from the *Social Science Citation Index,* is probably a more appropriate measure of overall productivity in psychology. Also, Jones et al. provided separate productivity and reputational data for the Columbia University Psychology Department and Columbia Teachers College. In order to create a single entry for Columbia University, we summed the two faculty sizes and numbers of published articles and averaged the two reputational ratings from Jones et al. The same procedure was followed for the University of Kansas Department of Psychology and Department of Human Development and Family Life.

Table 2
Spearman Correlations Among Overall Reputational and Productivity Ratings With Listwise Deletion (Above Diagonal: ns = 59) and Pairwise Deletion (Below Diagonal)

Rating	1970 Reputation[a]	1977 Productivity[b]	1982 Reputation[c]	1982 Productivity[c]	Current productivity
1970 reputation	1.0	.62	.89	.46	.69
1977 productivity	.62 (n = 59)	1.0	.56	.75	.85
1982 reputation	.89 (n = 73)	.57 (n = 76)	1.0	.53	.74
1982 productivity	.55 (n = 73)	.69 (n = 76)	.78 (n = 148)	1.0	.80
Current productivity	.69 (n = 76)	.80 (n = 76)	.84 (n = 148)	.88 (n = 148)	1.0

Note. All correlations significant, $p < .001$.

[a] From *A Rating of Graduate Programs* (p. 66) by K. D. Roose and C. J. Andersen, 1970, Washington, DC: American Council on Education. Copyright 1970 by the American Council on Education. Used by permission.

[b] From "Productivity Ratings of Graduate Programs in Psychology Based Upon Publication in the Journals of the American Psychological Association" by W. M. Cox and V. Catt, 1977, *American Psychologist, 32*, p. 796. Copyright 1977 by the American Psychological Association.

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of the variance between past and current productivity is unexplained, indicating that some schools have indeed changed their rank order. For example, in the current top 10 are three newcomers. The University of California, Los Angeles, previously ranked 12th (Cox & Catt, 1977), now ranks 2nd. Harvard University, previously placed 28th, now ranks 6th. Finally, Rutgers—The State University moved from 15th to 8th. Correspondingly, other schools rank lower in the current study than in Cox and Catt's (1977) studies. The most notable of these is the University of Iowa, which dropped from 9th to 30th. Other schools currently in the top 40 that evidenced large shifts are the University of Pittsburgh (31st to 13th), Columbia University (42nd to 25th), Johns Hopkins University (46th to 27th), Cornell University (59th to 29th), the University of California, Santa Barbara (66th to 37th), and the University of Illinois at Chicago Circle (62nd to 40th).

Correlations were also computed between current productivity and the two reputation ratings (Jones et al., 1982; Roose & Andersen, 1970; see Table 2). Of course, these correlations should be interpreted in light of the fact that current productivity is based on the entire institution, whereas the reputational ratings are specific to the psychology department. The correlation between previous reputation (Roose & Andersen, 1970) and current productivity was .69 (n = 59, $p < .001$, using listwise deletion). The stability of reputational ratings was estimated by a correlation of .89 (n = 59, $p < .001$). Of the 1982 top 11 reputational rankings, 9 schools were similarly ranked in 1970. These include (in order of the 1982 rankings) Stanford University (1st), Harvard University (2nd), Yale University and the University of Michigan (tied for 3rd), the University of California, Berkeley and the University of Pennsylvania (tied for 5th), the University of California, Los Angeles and the University of Minnesota (tied for 7th), and the University of Illinois at Urbana-Champaign (tied for 10th). Two schools moved into the top 10 between 1969 and 1982: the University of California, San Diego, which was unranked in 1969 and was tied for 10th in 1982, and the University of Chicago, which was 16th in 1970 and tied for 10th in 1982. Several of the more remarkable changes in reputational rank include the University of Rochester (20th to 43rd), the University of Iowa (20th to 39th), Michigan State University (20th to 46th), the University of California, Santa Barbara (unranked to 39th), the State University of New York at Stonybrook (unranked to 23rd), the University of Illinois at Chicago Circle (unranked to 52nd), Carnegie-Mellon University (30th to 12th), Florida State University (40th to 56th), Brown University (12th to 27th), the University of Virginia (62nd to 33rd), and the Graduate School and University Center of the City University of New York (unranked to 27th).[3]

The correlation between current reputation (Jones et al., 1982) and our current productivity index was .74 (n = 59, $p < .001$). Of the 10 most productive schools, 7 obtained top-10 reputational ratings as well (see Table 1). Of the 3 with lower reputational ranks, Rutgers—The State University had the most disparate rankings, placing 8th on productivity and tied for 30th on reputation. Among the remaining schools, several other highly discrepant rankings were noticeable: the University of Maryland (productivity rank − reputation rank = −37.5), the University of Missouri—Columbia (−47.5), the University of California, Davis (−38.5), the University of Nebraska (−51), Carnegie-Mellon University (+37), the University of Chicago (+41), the University of South Carolina (−46.5), the University of Delaware (−44.5), Iowa State University (−36), Auburn University (−45), and the University of Kentucky (−42.5).[4]

[3] Many schools were tied at 40th and 62nd in the Roose and Andersen (1970) rankings. Only very large deviations from these averaged ranks were reported in the text.

[4] We also calculated the correlation between Cox and Catt's (1977) overall productivity index and 1970 reputational index. We found a correlation of .62 using Spearman's rho, whereas Cox and Catt reported a much lower value of .35 using Kendall's tau. The most likely explanation for this discrepancy concerns the treatment of schools not included among the top 76 institutions rated by Roose and Andersen (1970). We considered data for such schools to be missing and thus omitted them from our calculations. Cox and Catt, on the other hand, assigned all of these schools the same tied rank at the bottom of the distribution.

Table 3 lists the top 20 ranked institutions in research productivity for each of the 13 journals. As shown in Table 3, several schools are highly productive in multiple areas.[5] Harvard University and the University of California, Los Angeles were ranked in the top 10 in 9 of the 13 journals. Stanford University, the University of Illinois, and the University of Minnesota placed in the top 10 in 7 journals; Rutgers—The State University and the University of Wisconsin in 6 of the journals; the University of Pittsburgh in 5 of the journals; and the University of California, Berkeley, the University of Texas at Austin, and the University of Michigan in 4 of the journals. On the other hand, 22 schools placed in the top 10 in only 1 journal.

For each of the 13 journals, Spearman correlations between institutional productivity rank from the present study and (a) past reputational rankings (Roose & Andersen, 1970), (b) past productivity rankings in the same journals (Cox & Catt, 1977), (c) recent reputational ranking (Jones et al., 1982), and (d) recent overall productivity rankings (Jones et al., 1982) are presented in Table 4. Several aspects of Table 4 are particularly interesting. First, the correlations between 1970 reputation and current per-journal productivity are generally lower than the correlations between 1982 reputation and current per-journal productivity. To the extent that these represent meaningful changes, we may conclude either that reputational changes are affected by productivity, that the Jones et al. (1982) reputational index is more reliable than Roose and Anderson's (1970), or both. Second, examining the correlations between 1982 reputation and current per-journal productivity, we find that publishing in different fields is not equally related to reputational rank. For example, current reputation is highly reflective of productivity in the *American Psychologist* (ρ = .74), *Developmental Psychology* (.73), the *Journal of Experimental Psychology* (.83), and the *Journal of Personality and Social Psychology* (.78). Alternatively, institutional reputation is only slightly reflective of productivity in the *Journal of Counseling Psychology* (ρ = .26) and *Professional Psychology* (ρ = .31). Third, overall productivity measured by Jones et al. (1982) appears to be reflected fairly evenly in the productivity ratings for each individual journal. These correlations range from .46 (for *Professional Psychology*) to .78 (for the *Journal of Personality and Social Psychology*) ($ps < .001$).

The correlations between past (Cox & Catt, 1977) and current (the present study) productivity were the most variable of all, ranging from −.28 (*ns*) for *Professional Psychology* to .61 ($p < .001$) for the *Journal of Applied Psychology.* These correlations may be interpreted as indexes of stability of school rank for each journal. In particular, the following schools have made large rank-order shifts into the top 10 in specific journals. In the *American Psychologist,* Columbia University moved from unranked to 4th, and Rutgers—The State University moved from unranked to 9th. For *Developmental Psychology,* Albert Einstein College of Medicine moved from unranked to 4th, and Stanford University moved from 28th to 3rd. For the *Journal of Abnormal Psychology,* Rutgers—The State University moved from 30th to 5th, and Harvard University and Indiana University moved from unranked to 6th and 7th, respectively.[6] In the *Journal of Applied Psychology,* the University of Houston moved from 24th to 1st. In the *Journal of Comparative and Physiological Psychology,* Johns Hopkins University moved from 26th to 4th, whereas the University of Florida, the University of Pittsburgh, the University of California, Los Angeles, and Rockefeller University shifted from unranked into the top 10. In the *Journal of Consulting and Clinical Psychology,* the correlation between 1977 and present productivity was .18 (*ns*), in part because Stanford University moved from 29th to 4th and five schools that were unranked in 1977 entered the top 12: the University of Pittsburgh, the University of Minnesota, Harvard University, the University of Georgia, and Wayne State University. In the *Journal of Counseling Psychology,* Iowa State University moved from 29th to 8th, and the State University of New York at Albany, the University of Nebraska, the University of California, Santa Barbara, Virginia Commonwealth University, and the University of Notre Dame rose from unranked into the top 12. For the *Journal of Educational Psychology,* Michigan State University shifted from 32nd to 10th, and the University of California, Santa Barbara moved from unranked to 5th. In the *Journal of Experimental Psychology,* the University of Washington rose from 26th to 8th, whereas Brown University, Harvard University, Johns Hopkins University, and Columbia University moved from unranked into the top 12. For the *Journal of Personality and Social Psychology,* the University of California, Berkeley increased rank from 25th to 8th, and the University of Texas at Austin rose from 22nd to 6th. In *Professional Psychology,* Rutgers—The State University, the University of Nebraska, the University of Texas, Wright State University, the University of Maryland, the State University of New York at Albany, and the University of California, Los Angeles moved from unranked in Cox and Catt into the current top 10. And in *Psychological Bulletin,* Stanford University shifted from 28th to 6th, whereas the University of South Carolina and the University of Chicago rose from unranked to 5th and 8th, respectively. Finally, for *Psychological Review,* Harvard University went from unranked to 3rd.

One factor that clearly affects the productivity of these institutions in psychology journals is the number of psychologists who work at each institution. Cox and Catt (1977) noted several remarkable changes in rank order productivity when faculty size was taken into account. These changes typically favored institutions with

[5] Thirteen tables (available upon request from George S. Howard) list the current productivity ratings and rankings for the 40 most productive institutions for each of the 13 APA journals. Also presented in these tables are past reputational rankings (Roose & Andersen, 1970), past productivity rankings in the same journals (Cox & Catt, 1977), recent reputational rankings (Jones et al., 1982), and recent overall productivity rankings (Jones et al., 1982).

[6] Carleton University and the University of Queensland ranked in the top 10 but were not reviewed by Cox and Catt (1977).

Table 3
Top 20 Ranked Institutions in Productivity in Each of the 13 Journals

Institution	AP	DP	Ab	Ap	CPP	CCP	CP	Ed	Ex	PSP	PP	PB	PR
U. of Akron				9			14						
U. of Alabama											14		
U. of Arizona											18		
Arizona State U.		15											
Boston U.													16
Bowling Green State U.				19									
Brown U.									7				
Albert Einstein College of Medicine		4											
U. of California, Berkeley	8	12		8				4	13	8		13	
U. of California, Davis	13				16								
U. of California, San Diego									2				7
U. of California, San Francisco											15		
U. of California, Los Angeles	7	5	1		9	1		1		7	9	9	13
U. of California, Santa Barbara							9	5					
Carnegie-Mellon U.	16									19			2
Carleton U.			3										
U. of Chicago												8	12
U. of Colorado, Boulder		11				16			5				
Colorado State U.							14						
Columbia U.	4		18					7	12				13
U. of Connecticut					18	14							
Cornell U.	15			17	12					18			7
City U. of New York, Graduate School and University Center	19	14											
U. of Delaware											19		
U. of Denver		20											
Duke U.													18
U. of Florida					5								
Florida International U.				15									
U. of Georgia		19				11		18					
Georgia Institute of Technology				16									
Harvard U.	2	7	6			8			10	3	9	3	3
U. of Hawaii					20								
U. of Houston				1				17					
U. of Illinois, Champaign	11	9		2	15	17	17	2	4	1		2	9
U. of Illinois, Chicago Circle			12										
Indiana U.			7				19		6	15			5
Iowa State U.			11	12	14		8						
U. of Iowa							13						
Johns Hopkins U.	6				4				11				
U. of Kansas				14		10	18			5		12	
U. of Massachusetts					8			19	16	17		18	
U. of Maine		18											
U. of Maryland	18			5			1				7		
U. of Michigan	3	13						9		4		15	6
Michigan State U.				3				10				20	

(table continued)

Table 3 (*continued*)

Institution	AP	DP	Ab	Ap	CPP	CCP	CP	Ed	Ex	PSP	PP	PB	PR
U. of Minnesota		1	14	10		6	7	3		9		7	
U. of Missouri, Columbia						20	3	19		14	11		
U. of North Carolina, Chapel Hill		6									2		
U. of Nebraska							6	16			3		
Northwestern U.				20					9	10			11
U. of Notre Dame							12						
New York U.				13									15
Ohio State U.				7			2		20	12	17		10
Oklahoma Health Services U.			13										
U. of Oregon	14					5							20
Pennsylvania U.	17		4		2				14				
Pennsylvania State U.	12	10				15	11	14			13	4	
U. of Pittsburgh	10		10		6	3		6	19			16	
Princeton U.					7				18				
Purdue U.				6				13	15			11	18
U. of Queensland			8										
U. of Rochester			20		13	13				16			
U. of Rhode Island											12		
Rockefeller U.					10								
Rutgers–The State U.	9	8	5		1	9				20	1		
U. of Southern California								15					
U. of South Carolina				18								5	
Southern Illinois U., Carbondale							4						
Stanford U.	5	3	9			4		12	17	2		6	1
State U. of New York, Albany							5				8		
State U. of New York, Binghamton					17								
State U. of New York, Buffalo			15									17	
State U. of New York, Stonybrook	20					19							17
Texas A&M U.				11									
U. of Texas, Austin			16		3		20	11		6	4	10	
U. of Utah					19		16						
Vanderbilt U.											16		
Virginia Commonwealth U.							10						
U. of Washington, Seattle		16		4	11	2			8		20	14	
Washington U., St. Louis											6		
U. of Waterloo			19										
Wayne State U.						12							
U. of Wisconsin, Madison		2	2			7		8	3	11		1	
Wright State U.											5		
Yale U.	1	17	17			18			1	13		19	4

Note. AP = *American Psychologist*; DP = *Developmental Psychology*; Ab = *Journal of Abnormal Psychology*; Ap = *Journal of Applied Psychology*; CPP = *Journal of Comparative and Physiological Psychology*; CCP = *Journal of Consulting and Clinical Psychology*; CP = *Journal of Counseling Psychology*; Ed = *Journal of Educational Psychology*; Ex = *Journal of Experimental Psychology*; PSP = *Journal of Personality and Social Psychology*; PP = *Professional Psychology*; PB = *Psychological Bulletin*; PR = *Psychological Review*.

Table 4
Spearman Correlations Between Current Productivity in Each Journal With Other Past and Present Ratings

Journal	1970 Reputation (n = 76)	1977 Productivity in same journal[a]	1982 Reputation (n = 148)	1982 Overall productivity (n = 148)
American Psychologist	.67***	.47**	.74***	.68***
Developmental Psychology	.52***	.44*	.73***	.72***
Journal of Abnormal Psychology	.56***	.44*	.59***	.62***
Journal of Applied Psychology	.31**	.61***	.49***	.59***
Journal of Comparative & Physiological Psychology	.56***	.36*	.66***	.65***
Journal of Consulting & Clinical Psychology	.37**	.18	.60***	.74***
Journal of Counseling Psychology	.02	.49**	.26***	.51***
Journal of Educational Psychology	.42***	.56***	.54***	.67***
Journal of Experimental Psychology	.73***	.48**	.83***	.72***
Journal of Personality & Social Psychology	.62***	.48**	.78***	.78***
Professional Psychology	.16	−.28	.31***	.46***
Psychological Bulletin	.55***	.43*	.68***	.77***
Psychological Review	.72***	.55**	.69***	.54***

[a] ns = 32 for all except *Journal of Counseling Psychology*, where n = 33, and *Journal of Educational Psychology*, where n = 34.
* $p < .05$. ** $p < .01$. *** $p < .001$.

relatively small but productive psychology departments. Table 5 presents two indexes of productivity adjusted by faculty size. The first is based on Jones et al.'s (1982) number of publications in any journal attributable to the psychology department divided by their estimate of full-time graduate faculty in psychology. The second is our index of productivity in APA journals divided by our estimate of the number of psychologists at the institution (i.e., the number of APA members or the number of full-time graduate faculty in psychology—whichever was larger). Care should be taken in the interpretation of our adjusted productivity score. Because partial credit is given for joint-authored publications, this composite variable should not be interpreted as the number of publications per faculty member, as was Cox and Catt's (1977) index. Furthermore, the schools listed in this table are only those that were included in the Jones et al. (1982) study.

The Spearman correlation between our estimate of number of psychologists and productivity was .76 ($p < .0001$), which, although large, does leave some room for small but productive schools to rise to the fore when productivity is adjusted for faculty size. (Of some interest is the fact that Jones et al. (1982), using different indexes of faculty size and productivity, also obtained a correlation of .76. This relationship seems to be both strong and stable.) When we adjusted for faculty size, Johns Hopkins University, Princeton University, Brown University, the University of California, Davis, the University of California, Riverside, and Cornell University took substantial leaps into the top 10. Other universities that also made noteworthy shifts are Brandeis University (79th to 12th), Washington University in St. Louis (from 63rd to 26th), the University of Notre Dame (80th to 23rd), the State University of New York at Binghamton (77th to 30th), Emory University (73rd to 28th), Bryn Mawr College (100th to 34th), and the University of Mississippi (94th to 35th). In the top 10, only 4 schools retained their high rankings, indicating exceptionally high productivity rates over and above what might be expected on the basis of their large faculty sizes. These schools are Harvard University, Yale University, the University of Illinois at Urbana-Champaign, and Stanford University.

The comparison of our adjusted productivity with Jones et al.'s (1982) adjusted productivity is also illuminating. The Spearman correlation between these measures is .70 (n = 148, $p < .001$). Again, some of the same schools ranked high on both: Harvard University, Yale University, and Stanford University. However, some schools that ranked low on Jones et al.'s (1982) index were much higher on ours: Johns Hopkins University, Princeton University, the University of Illinois at Urbana-Champaign, Brown University, and Cornell University. Other schools were ranked high on Jones et al.'s (1982) adjusted productivity and were not on ours: the State University of New York at Albany and the University of Georgia. In part, these discrepancies reflect the extent to which the faculty targeted APA journals for their publications.

A third comparison can be made between Jones et al.'s (1982) reputational rank and our adjusted productivity. The Spearman correlation here was .69 (n = 148, $p < .0001$), which was somewhat smaller than the correlation between unadjusted productivity and reputation (.84, n = 148, $p < .0001$). Ranking high on both reputation and adjusted productivity are, again, Harvard University, Yale University, and Stanford University. However, the University of California, Davis and the University of California, Riverside have relatively low reputational rankings (82nd and 94th, respectively) and yet placed in the top 10 on adjusted productivity. Recipro-

Table 5
Institutional Rankings on Five Indexes of Recent Reputation, Productivity, and Productivity Adjusted for Faculty Size

Institution	Jones et al. (1982)				Current study			
	Faculty size	Productivity rank	Adjusted productivity rank[a]	Reputation rank	Faculty size	Productivity rank	Adjusted productivity rank	Adjusted productivity total
Johns Hopkins U.	15	76.0	16.0	20.0	29	27	1	3.72
Harvard U.	27	15.0	1.0	2.0	54	6	2	3.57
Yale U.	49	4.0	4.0	3.5	56	7	3	3.35
Princeton U.	21	47.0	17.0	20.0	26	41	4	3.10
U. of Illinois, Champaign	56	8.0	31.5	10.0	90	1	5	2.84
Stanford U.	26	20.5	3.0	1.0	78	3	6	2.69
Brown U.	16	95.5	54.0	27.5	20	61	7	2.61
U. of California, Davis	22	47.0	21.0	82.5	31	44	8	2.42
Cornell U.	34	69.5	95.0	15.5	43	29	9	2.38
U. of California, Riverside	14	77.5	13.0	94.0	18	69	10	2.33
U. of Colorado	45	9.0	15.0	15.5	52	21	11	2.29
Brandeis U.	14	109.5	83.0	65.0	16	79	12	2.29
Carnegie-Mellon U.	17	60.5	12.0	12.0	30	49	13	2.29
U. of Pennsylvania	40	23.0	35.0	5.5	56	19	14	2.16
U. of Missouri, Columbia	26	17.0	2.0	69.5	56	22	15	2.11
U. of Oregon	34	58.0	79.0	15.5	45	32	16	2.11
U. of Wisconsin, Madison	36	16.0	9.0	15.5	97	4	17	2.10
U. of Rochester	28	36.0	22.0	43.0	52	24	18	2.09
U. of California, Santa Barbara	25	50.0	36.0	39.0	40	37	19	2.09
Rutgers, The State U.	87	6.0	65.0	30.5	63	8	20	2.04
Northwestern U.	28	25.0	7.0	27.5	52	28	21	2.02
Columbia U.	55	39.0	107.5	39.0	45	25	22	1.97
U. of Notre Dame	13	83.0	10.0	123.5	19	80	23	1.92
Indiana U.	40	40.0	67.5	15.5	69	17	24	1.86
U. of Connecticut	44	34.5	63.0	33.5	49	33	25	1.85
Washington U., St. Louis	26	56.0	46.0	56.5	28	63	26	1.85
Purdue U.	63	10.0	49.0	30.5	68	20	27	1.77
Emory U.	20	84.5	55.0	82.5	24	73	28	1.70
U. of California, Berkeley	40	28.0	44.0	5.5	101	9	29	1.69
State U. of New York, Binghamton	19	47.0	8.0	65.0	22	77	30	1.68
U. of Massachusetts	54	26.0	78.0	39.0	66	23	31	1.67
State U. of New York, Stonybrook	41	27.0	47.0	23.5	45	45	32	1.67
U. of Delaware	20	95.5	77.0	99.5	36	55	33	1.63
Bryn Mawr College	7	120.0	31.5	105.5	15	100	34	1.58
U. of Mississippi	11	128.0	107.5	139.5	17	94	35	1.56
U. of California, San Diego	22	60.5	37.5	10.0	56	35	36	1.56
U. of Washington, Seattle	61	2.0	14.0	15.5	104	11	37	1.56
U. of Nebraska	21	106.0	117.0	94.0	52	43	38	1.53
U. of Texas, Austin	46	11.5	20.0	20.0	111	10	39	1.53
Duke U.	33	64.0	85.0	23.5	45	48	40	1.53
U. of Minnesota[b]	58	7.0	26.0	7.5	133	5	43	1.50
U. of California, Los Angeles[b]	68	1.0	11.0	7.5	184	2	52	1.32
U. of Chicago[b]	60	13.0	52.0	10.0	44	51	64	1.12
U. of Michigan[b]	111	5.0	75.0	3.5	156	12	74	1.00

[a] Two schools (University of Georgia and State U. of New York, Albany) were among the top 10 in adjusted productivity in Jones et al. (1982) but failed to make the top 40 on adjusted productivity in the present study.
[b] These four schools ranked in the top 10 on reputation and/or unadjusted productivity but did not appear in the top 40 on adjusted productivity—in part because of the very large number of APA members among their faculties.

cally, several schools enjoyed high rankings on reputation yet were ranked fairly low on our adjusted productivity index: the University of Michigan, the University of California, Los Angeles, and the University of Minnesota.

Summarizing Table 5, we note that rankings for individual institutions can vary considerably depending upon the nature of the index. For example, Johns Hopkins University was ranked 76th by Jones et al. (1982) on productivity and 27th in our study. However, when adjusted for faculty size, these rankings leapt to 16th and 1st, re-

spectively. Of course, one reason for such discrepancies for this particular institution may be the presence of highly productive individuals outside the psychology department. However, across all institutions included in the study, there is strong consistency between various measures of overall productivity. As shown earlier in Table 2, the correlation between productivity as defined by Jones et al. and by us was a substantial .88 for 148 institutions, despite differences in defining productivity. Similarly, the relationship between overall productivity total and adjusted productivity was .85 in the present study.

Summary and Conclusions

The rating of institutions on productivity and reputation in psychology is an undertaking fraught with problems. First, one's operational definitions of the various indexes may affect the resulting rank order of institutions considerably. For example, we did not include books or book chapters in our review. Also, only the 13 APA journals previously reviewed by Cox and Catt (1977) were considered. Second, the rank order of certain institutions may be affected by a wide variety of factors that may not be of interest to the prospective graduate school applicant. In some cases, the addition or attrition of a single very productive faculty member could alter a school's ranking. Also, changes in journal editorships or the emergence of new popular areas of research could affect some schools more than others—especially on the single-journal indexes. Clearly, discretion is needed in the interpretation of these results.

Indeed, these very issues may serve as new avenues for future productivity research. The choice of productivity indexes could be examined via generalizability studies, such as those conducted earlier (Howard, 1983; Howard et al., 1985; Maxwell & Howard, 1986), but in different subfields. Also, the new APA journals (e.g., *Psychology and Aging*) could be examined—perhaps in the next productivity review. Similarly, the *Journal of Experimental Psychology* could be subdivided into its four components to yield an even finer-grained analysis. Finally, perhaps nonjournal productivity could be included as yet another index.

Mindful of these possibilities, one can approach the current data in several ways. By considering both past and present indexes of reputation (Jones et al., 1982; Roose & Andersen, 1970) and research productivity (Cox & Catt, 1977; Jones et al., 1982; and the present study), one can evaluate various institutions from two distinct but related perspectives. In addition, changes over time on both dimensions can be tracked. Further, by adjusting the productivity ratings for faculty size, it can be seen that a number of small institutions, while they cannot match the larger institutions in faculty numbers, have prolific individual faculty members at work.

One of the most interesting differences between our results and those reported by Cox and Catt (1977) is that we generally found a much higher correlation between productivity and reputational ratings. For example, the correlation between our overall productivity index and reputation as defined by Jones et al. was .84 (using pairwise deletion). Such a value stands in stark contrast to Cox and Catt's (1977) correlation of only .35 between their measure of productivity and reputation as defined by Roose and Andersen (1970). An even larger discrepancy emerges when productivity is examined in terms of individual journals. Cox and Catt failed to find a single statistically significant correlation coefficient between productivity in any of the 13 APA journals and reputational rating. Indeed, only five of the journals even had a positive correlation. The largest positive correlation was .15 for the *Journal of Personality and Social Psychology.* Our results, as shown earlier in Table 4, convey a totally different picture. We found statistically significant correlation coefficients for each of the 13 journals and reputation as defined by Jones et al. (1982). Thus, our results imply a much stronger correspondence of reputation to productivity than that suggested by Cox and Catt (1977).

Of course, we can only speculate as to why we found a much stronger relationship between reputation and productivity than did Cox and Catt, both for overall productivity and for productivity in individual journals. The most plausible explanation is that Cox and Catt's sample for individual journals consisted of only the top 32 institutions on productivity or reputation, whereas our correlations are based on 148 institutions. The restriction in range in Cox and Catt's sample would be expected to produce a lower correlation. In addition, all schools in Cox and Catt's data that failed to reach the top 32 were apparently assigned a tied rank, a procedure that meant some potentially valuable information was lost. It should be noted that Roose and Andersen's (1970) reputational ratings were available for a smaller sample than were the Jones et al.'s (1982) ratings and that these earlier reputational ratings provided only coarse groupings beyond the top schools, resulting in a loss of precision and many tied scores. In addition, Roose and Andersen's (1970) reputational data were collected in 1969, but the Cox and Catt (1977) survey did not begin until 1970. A "reputational lag" would lower the correlation found by Cox and Catt. Nevertheless, our overall productivity measure correlated more highly with 1970 reputation than did Cox and Catt's overall productivity measure (see Table 2). Most important, our productivity measure even correlated significantly with 1970 reputation for 11 of the 13 individual APA journals (see Table 4). Thus, "reputational lag" is an unlikely explanation for the lack of correlations found by Cox and Catt. One other difference between our productivity measures and theirs is that ours are based on 10 years instead of 6 years. The longer time period is likely to increase the reliability of institutional productivity ratings, especially for individual journals. This increased reliability is likely to have produced larger correlations than would be obtained with less reliable measures.

Insofar as research productivity ratings in the various subareas of psychology are used to suggest "where the action is" in those domains, the remarkably low correlations between Cox and Catt's (1977) data for each sub-

area with the results obtained in the present study suggest that Cox and Catt's (1977) findings are now quite dated. In every subarea surveyed, several schools that were poorly rated in the 1977 study made dramatic moves in the late 1970s and early 1980s to assume positions of leadership in those content areas. However, it must also be realized that ratings for individual journals may be rather unreliable, so that some apparent shifts across time may reflect random fluctuations as much as true change. This problem is likely to be less serious for those journals in which a relatively large number of articles have been published. Also, these apparent changes within a subarea should be interpreted in the context of a finding of high stability for overall productivity across the 13 journals. It is our hope that the present findings will serve to acknowledge the strides that have already been made by such emerging institutions and will be used to apprise future graduate students of the institutions most vigorously pushing forward knowledge in each of the targeted subareas.

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