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THE GATEKEEPERS OF SCIENCE: SOME FACTORS AFFECTING THE SELECTION OF ARTICLES FOR SCIENTIFIC JOURNALS

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The norms of scientific behavior as described by Merton¹ include the prescription that scientific achievements are to be judged without reference to scientists' social characteristics. This article will attempt to assess the extent to which this norm is followed with respect to the evaluation of articles by scientific journals.

Merton's discussion refers to the possibility that a scientist's "personal or social attributes" such as "race, nationality, religion, class and personal qualities" might interfere with the objective evaluation of his work. Recent studies suggest that it is more probable that a scientist's position in the social structure of science itself may affect the evaluation of his scientific work. One aspect of the social structure of basic science is the fact that basic scientists are located in institutions of varying prestige. The scientist's location in the academic stratification system affects his scientific career. For example, several studies have shown that productivity of scientists is related to the prestige of their university affiliations.² One study also found that highly productive scientists were more likely to receive recognition if they were located at major universities.³

Since scientific rewards are based on publications, the ease with which he can publish his work is of great impor-

tance to the scientist. If the academic stratification system controls opportunities for publication and distributes them differentially to scientists differently located in the system, the system is inhibiting some scientists from performing their scientific roles and possibly also the diffusion of scientific ideas. De Grazia has suggested that journal editors are the "gatekeepers" of science, screening the information which is permitted to circulate widely among members of the discipline.⁴ He claims that they tend to support the currently orthodox views in their fields and that their receptivity to new ideas is variable. The possibility of an "establishment" in scientific disciplines has been suggested but never empirically confirmed.

There is some evidence from previous studies which suggests that the evaluation of scientific articles may not always be entirely objective. A number of studies have shown that a large proportion of the articles appearing in scientific journals are contributed by scientists from major universities.⁵ There is also some indication that the selection of articles by journals may be influenced by knowledge of the academic affiliations of the authors. A study of the articles published by three economics journals found that journals edited at a particular university tended to publish a higher proportion of articles by authors at the same university.⁶

A study done in 1945 found that articles by authors from minor universities were rejected more frequently by the *American Sociological Review* than articles by authors from major universities.⁷ Finally, recent studies of citation practices have shown that articles by authors from departments which have been rated highly by members of a discipline are more frequently cited than articles by authors from other departments. This finding held even when ability (as measured by intelligence tests administered during adolescence) was held constant.⁸

It seems likely that knowledge of an author's academic affiliation has some effect on the evaluation of his work by referees. An author's academic affiliation may cast a kind of "halo" effect over his work which impedes objective evaluation.⁹ Since a few scientific journals evaluate manuscripts anonymously, this article will attempt to assess the influence of editors' awareness of scientists' locations in the academic stratification system upon their selection of articles for publication. Characteris-

⁶ Pan A. Yotopoulos, "Institutional Affiliation of the Contributors to Three Professional Journals," *American Economic Review*, 51 (1961), pp. 665-670.

⁷ Dorris West Goodrich, "An Analysis of Manuscripts Received by the Editors of the *American Sociological Review* from May 1, 1944 to September 1, 1945," *American Sociological Review*, 10 (1945), 716-725.

⁸ Alan E. Bayer and John Folger, "Some Correlates of a Citation Measure of Productivity in Science," *Sociology of Education*, 39 (1966), pp. 381-390. See also Stephen Cole and Jonathan R. Cole, "Scientific Output and Recognition: A Study in the Operation of the Reward System in Science," *American Sociological Review*, 32 (1967), pp. 377-390.

⁹ An analogous phenomenon in another area is the well-known placebo effect which has led to the extensive use of "double-blind" tests in the scientific evaluation of new drugs. See Walter Modell, "Placebo Effects in the Therapeutic Encounter," in W. Richard Scott and Edmund H. Volkart (eds.), *Medical Care: Readings in the Sociology of Medical Institutions*, New York: John Wiley and Sons, 1966, pp. 368-380.

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¹ Robert K. Merton, "Science and Democratic Social Structure," in *Social Theory and Social Structure*, Glencoe, Illinois: The Free Press, 1957, p. 553.

² Bernard Berelson, *Graduate Education in the United States*, New York: McGraw-Hill, 1960, p. 127; Paul F. Lazarsfeld and Wagner Thielens, Jr., *The Academic Mind*, Glencoe, Illinois: The Free Press, 1958, p. 30; Jerome G. Manis, "Some Academic Influences upon Publication Productivity," *Social Forces*, 29 (1951), pp. 267-272; Nicholas Babchuk and Alan P. Bates, "Professor or Producer: The Two Faces of Academic Man," *Social Forces*, 40 (1962), pp. 341-348.

³ Diana Crane, "Scientists at Major and Minor Universities: A Study of Productivity and Recognition," *American Sociological Review*, 30 (1965), pp. 699-714.

⁴ Alfred de Grazia, "The Scientific Reception System and Dr. Velikovsky," *American Behavioral Scientist*, 7 (1963), 38-56.

⁵ Berelson, *op. cit.*, pp. 127, 273-274; Frank R. Cleary and Daniel J. Edwards, "The Origins of the Contributors to the A.E.R. During the Fifties," *American Economic Review*, 50 (1960), pp. 1011-1014; Charles A. Kraus, "The Present State of Academic Research," *Chemical and Engineering News*, 28 (1950), pp. 3203-3204. A recent article in the *American Sociologist* indicates that a high proportion of authors of articles appearing in the *American Sociological Review* had received their doctoral degrees from a small group of universities. See Jules J. Wanderer, "Academic Origins of Contributors to the ASR, 1955-1965," *American Sociologist*, 1 (1966), pp. 241-243.

tics of scientists whose articles were accepted for publication on the basis of anonymous evaluation will be compared with the characteristics of scientists whose articles were selected without such controls against bias.

Undoubtedly, however, a number of factors limit the effectiveness of anonymous evaluation. There are always referees who recognize the work of friends. The identity of well-known authors is often recognizable from their style or theoretical orientation. In some fields, the "invisible college" may be so effective that most scientists are aware of the research which their colleagues are doing.¹⁰

Since anonymity is seldom complete, it will be necessary to examine other variables which may be influencing the publication opportunities of scientists. It seems likely that the academic backgrounds of journal editors have an indirect effect upon their selection of articles for publication. First, doctoral training may influence editorial readers to respond favorably to certain aspects of methodology, theoretical orientation and mode of expression in the writings of those who have received similar training. Secondly, both doctoral training and academic affiliations probably influence the personal ties which a scientist forms with other scientists and these in turn may affect his evaluation of scientific work. Since most scientific writing is terse, knowledge of details not usually included in journal presentations may influence the reader's response to an article. Thirdly, professional age (number of years past Ph.D.) may affect an editor's evaluation in both of these ways, by influencing the types of material to which he responds favorably and his personal ties with other scientists. In this article, academic backgrounds of editors will be examined in relation to the academic backgrounds of authors whose papers have been selected for publication.¹¹

The Data

A survey of 50 journals published by national professional associations in

seven disciplines¹² found 9 journals (8 of them in sociology) which required that the authors' names and institutional affiliations be concealed from referees. One of the journals which evaluates articles anonymously is the *American Sociological Review*. The procedure was instituted in 1955.¹³ In order to find out whether anonymous evaluation of articles has any noticeable effect on the distribution of academic characteristics of authors of articles selected for publication, university affiliations, doctoral origins, and professional ages (number of years since Ph.D.) were examined for 1322 authors of articles published in the *American Sociological Review* during the ten years preceding and succeeding 1955. In addition, the characteristics of 294 contributors to the *American Economic Review* were compared with the contributors to the *American Sociological Review*.¹⁴ The *American Economic Review* was chosen because it does not evaluate articles anonymously, it is the publication of the major professional association of another social science discipline, and its contributors do research under conditions approximately similar to those in sociology. Thus comparisons between the two publications are appropriate. Educational origins were examined, as well as academic affiliations at the time of publication, in order to see if anonymous evaluation has the indirect effect of diversifying educational backgrounds of contributors. Similarly, professional age was examined to see if younger (and probably less eminent) authors are more likely to be selected under a

¹² The disciplines were biology, chemistry, economics, physics, psychology, sociology, and statistics.

¹³ According to a personal communication, November 9, 1966, from Leonard Broom, then editor of the *American Sociological Review*, the first articles were circulated anonymously in June, 1955 but it was not until April, 1956 that an entire issue of anonymously evaluated articles appeared. For this reason, the following issues of the *American Sociological Review* have been excluded from the analysis: August, October, and December, 1955 and February, 1956.

¹⁴ Only articles which could have been circulated anonymously were included in the analysis. For this reason, the following materials were excluded: presidential addresses, MacIver Award lectures, book reviews and review articles, official reports, memorials, and comments on articles previously published. Comments are not circulated anonymously, according to a personal communication from Norman B. Ryder, Editor, *American Sociological Review*, November 9, 1966.

system of anonymous evaluation of articles. The same information was collected for the editorial boards of these journals during the same periods.

Institutional affiliations of authors and editors were coded using Berelson's categories of university prestige.¹⁵ Berelson based his classification of American universities on the quality ratings obtained by Keniston in 1957.¹⁶ The first category (here described as major universities) included the top 10 universities in Keniston's study with two major technological schools added. The second category (here described as "high minor universities") included the next 10 schools in the Keniston ratings. The remaining 70 universities are grouped together here as "low minor universities."¹⁷

The universities from which the authors and editors obtained their Ph.D.s were classified in the same way. Biographical information was obtained from *American Men of Science*, 1956 and 1962 editions and from the 1964 *Handbook of the American Economic Association*. Authors were coded as having no Ph.D. if at the time of publication of the article concerned they had not yet obtained a Ph.D.¹⁸ It was not possible to locate biographies for authors of 9 to 22% of the articles in any year (since this proportion is higher for the last three years, 1963 to 1965, these years are excluded from the analysis of doctoral origins). Since academic affiliation at time of publication is given in the journal articles, this information is complete for virtually the entire sample.

In order not to give undue weight to academic affiliations of authors of collaborative articles, collaborators' academic affiliations were given fractional credit and thus not permitted to total more than one for a single article.

¹⁵ Berelson, *op. cit.*, pp. 126-127.

¹⁶ Hayward Keniston, *Graduate Education and Research in the Arts and Sciences at the University of Pennsylvania*, Philadelphia: University of Pennsylvania Press, 1959.

¹⁷ The ratings by Allan M. Cartter were not used since they are probably too recent to apply to the entire period under consideration. However, for both economics and sociology, there is considerable agreement between the Keniston ratings and the Cartter ratings. See Allan M. Cartter, *An Assessment of Quality in Graduate Education*, Washington, D.C.: American Council on Education, 1966, pp. 35, 43.

¹⁸ A few authors had advanced degrees other than the Ph.D., for example, doctorates of business administration, education, law and medicine. These were treated as comparable to the Ph.D. for the purposes of the study.

This procedure was used in classifying academic affiliations and the universities from which authors had obtained their Ph.D.s.

Professional age was obtained by calculating the number of years between the date of the author's Ph.D. and the date of publication of his article. In the case of an editor, his professional age was the number of years between his Ph.D. and the final year of his editorship. On both journals, most editors serve for three-year periods. Since the range of ages was quite large, the median was used to describe the distributions of professional ages. In this instance, collaborators were included as individuals rather than fractionally.

The Effects of Anonymous Evaluation

When the academic affiliations of contributors to the *American Sociological Review* between 1956 and 1965 are compared with the academic affiliations of contributors to the *American Economic Review*, the principal difference is the higher representation of authors from the low minor universities in the *American Sociological Review*. Differences between the two journals in the proportions of authors with other types of affiliations were slight.

In order to assess the true influence of anonymous evaluation of articles, it is necessary to compare the contributors to the *American Sociological Review* after anonymous evaluation was begun with those who were selected under the previous system. When the total number of articles published during the two periods is examined, the proportion of articles by authors from both the major

universities and the low minor universities have increased during the later period.

In both the *American Sociological Review* and the *American Economic Review*, the proportion of authors with doctorates from minor universities is much lower than the proportion of authors with doctorates from major universities. However, the proportion of authors with doctorates from minor universities is higher in the *American Sociological Review*.¹⁹ When the *American Sociological Review* during the period of anonymous evaluation of articles is compared to the earlier period, there is an increase in the proportions of authors with doctorates from major universities and from low minor universities. The number of authors without Ph.D.s decreases. The latter may simply reflect the fact that the Ph.D. has become a basic requirement for most university teaching positions.

Does anonymous evaluation of articles tend to favor younger authors? The median professional age of authors of articles in the *American Sociological Review* between 1956 and 1962 is 5.3,²⁰

¹⁹ The proportions of doctorates awarded by minor universities are very similar in the two disciplines. Between 1953 and 1962, 59% of the doctorates in sociology were awarded by minor universities. During the same period, 57.5% of the doctorates in economics were awarded by minor universities. These figures were computed from data contained in Allan M. Cartter (ed.), *American Universities and Colleges*, 9th edition, Washington, D.C.: American Council on Education, 1964.

²⁰ Since the proportion of authors for whom the date of Ph.D. is unknown increases substantially after 1962, these years were not included in this part of the analysis.

During the same period, the median professional age of authors of articles in the *American Economic Review* is 7.3. The median professional age of authors is 9.1 for the *American Sociological Review* during the first six years of the earlier period. However, it drops to 4.0 during the four years prior to the commencement of anonymous evaluation of articles. Since the editorship of the *American Sociological Review* changed at the point when the decline begins, median age during those years may reflect editorial policy.

Academic Characteristics of Editors and Contributors

While there do appear to be some differences in the characteristics of authors whose articles are selected by means of anonymous evaluation as compared to those whose articles are selected by the other system, it seems likely that other factors may be influencing the findings. An obvious possibility is the characteristics of the journal editors who are the most usual choice for referees. The *American Economic Review* had a small group of editors (eight in number) and its chief editorship changed only once during the period, 1956 to 1965. The institutional location of the chief editorship did not change.

By contrast, during the same period, the *American Sociological Review* had a board of 12 editors from 1956 to 1958. The number was increased to 15 from 1959 to 1962 and to 20 from 1963 to 1965. There were four chief editors and four different institutional locations of the journal during the period. Prior to 1956, the board of editors was somewhat smaller (between 6 and 8) although the chief editorship and institutional location of the chief editorship changed regularly. There were three chief editors and three institutional locations during the earlier period.

The institutional affiliations of the editors of the *American Sociological Review* were considerably more diverse than those of the editors of the *American Economic Review*. Editors from minor universities represented 65% of the editorship of the *American Sociological Review* during the earlier period, 61% of the editorship during the later period, and only 29% of the edi-

sis. Younger authors are less likely to be included in biographical directories and thus a high proportion of individuals for whom biographical information is unavailable is likely to raise the median professional age.

TABLE 1. PRESTIGE OF ACADEMIC AFFILIATIONS OF AUTHORS SELECTED BY ANONYMOUS AND NON-ANONYMOUS EVALUATION *

	Type of evaluation:		
	Not Anonymous <i>American Sociological Review</i> 1946-55	Anonymous 1956-65	Not anonymous <i>American Economic Review</i> 1956-65
Percentage of authors at:			
Major universities	26	33	36
High minor universities	21	14	18
Low minor universities	26	34	20
Colleges	10.5	7	7
Non-academic positions	14	8	11
Foreign positions	2	4	7.66
Affiliation unknown	.5	0	.33
Total	101 **	100	100
Total number of papers:	(712)	(610)	(294)

* Since the entire population of articles during relevant periods was selected for examination rather than a random sample, tests of significance are not applicable.
** Rounding error.

TABLE 2. PRESTIGE OF DOCTORAL ORIGINS OF AUTHORS SELECTED
BY ANONYMOUS AND NON-ANONYMOUS EVALUATION

	Type of evaluation:		
	Not Anonymous	Anonymous	Not anonymous
	<i>American Sociological Review</i>		<i>American Economic Review</i>
	1946-55	1956-62	1956-62
<i>Percentage of authors with doctorates from:</i>			
Major universities	40	45	60
High minor universities	17	18	8
Low minor universities	11	14	3
Foreign degrees	3	1	9
Graduate school unknown	15	16	13
No Ph.D.	14	6	7
Total	100	100	100
Total number of papers:	(712)	(446)	(202)

torship of the *American Economic Review*.

The doctoral origins of editors of both journals were less diverse than their academic affiliations. However, the editors of the *American Sociological Review* during both periods were more likely to have received their doctorates from minor universities than the editors of the *American Economic Review*.

These figures, juxtaposed with the previous findings regarding the academic affiliations and doctoral origins of contributors to these journals, suggest that diversity in the academic characteristics of journal editors may be an important factor contributing to the selection of articles by authors from varied academic backgrounds. It is possible that bias in the selection of journal articles may be prevented in two ways: anonymous evaluation of articles and the use of staffs of editors with diverse academic backgrounds. During the period, 1956 to 1965, the *American Sociological Review* had both types of controls while the *American Economic Review* had neither. From 1946 to 1955, the *American Sociological Review* had only one of the two, diverse

editorship. This control by itself appears to have been effective.

Analysis of the academic affiliations of contributors to a journal which represents the fourth possibility, anonymous evaluation coupled with a staff of editors primarily from the major universities, is necessary to test the effectiveness of anonymous evaluation. *Sociometry* began to evaluate manuscripts anonymously in 1956 when it became an American Sociological Association publication.²¹ From 1956 to 1958, 24 (59%) of the editors were from major universities and 8 (20%) from minor universities; 9 (22%) were located in non-academic settings. From 1959 to 1961, the number of editors from major universities declined to 18 (45%) while the number of editors from minor universities increased to 12 (31%). Nine or 23% were in non-academic settings. Finally, between 1962 and 1965,

²¹ According to Leonard S. Cottrell, Jr. (personal communication, April 5, 1967) who was editor of *Sociometry* during that period, all articles which appeared in the journal, beginning with the March, 1956 issue, had been evaluated anonymously.

TABLE 3. PRESTIGE OF ACADEMIC AFFILIATIONS OF EDITORS OF THE
AMERICAN SOCIOLOGICAL REVIEW, 1946-65, AND THE
AMERICAN ECONOMIC REVIEW, 1956-65

	<i>American Sociological Review</i>		<i>American Economic Review</i>
	1946-55	1956-65	1956-65
<i>Percentage of editors at:</i>			
Major universities	23	34	55
High minor universities	18	19	13
Low minor universities and colleges	47	42	16
Non-academic positions	0	0	16
Affiliation unknown	12	5	0
Total	100	100	100
Total number of editors:	(34)	(67)	(31)

13 (26%) of the editors were from major universities and 24 (48%) from minor universities (11 or 22% were in non-academic settings and information was unavailable for 2 or 4%).

If anonymous evaluation of manuscripts has an effect on the selection of articles, it ought to be noticeable if the institutional backgrounds of authors of articles in *Sociometry* between 1956 and 1958 (the period when the academic affiliations of the editors were least diverse) are compared with the institutional backgrounds of authors of articles appearing in the *American Economic Review*. Since the editorship of the *American Economic Review* was least diverse between 1956 and 1962, this period was chosen for comparison.²² The institutional affiliations of authors of articles appearing in the two journals are very similar. However, the doctoral origins of the editors of the two journals were different with corresponding effects upon the doctoral origins of the contributors.²³

These findings suggest that anonymity does not produce the expected results. That diversity in the academic backgrounds of editors rather than anonymous evaluation of manuscripts is the more important factor influencing the selection of manuscripts can be seen in the fact that the proportion of articles by authors from minor universities increases in *Sociometry* as the proportion of editors from these institutions increases, although the manuscripts were evaluated anonymously during the entire period.²⁴

²² Between 1956 and 1962, 12 (52%) of the editors of the *American Economic Review* were from major universities and 6 (26%) from minor universities. Between 1963 and 1965, 6 (46%) were from major universities and 5 (38%) from minor universities. The remainder were in non-academic settings.

²³ From 1956 to 1958, 29 (71%) of the editors of *Sociometry* had doctorates from major universities; 10 (24%) had degrees from minor universities; doctoral origins of 2 editors could not be ascertained. From 1959 to 1961, 27 (69%) had degrees from major universities, 10 (26%) from minor universities and the doctoral origins of 2 could not be ascertained. Between 1962 and 1965, 32 (64%) had degrees from major universities, 16 (32%) from minor universities and doctoral origins of 2 could not be identified. See Table 4 for the doctoral origins of the editors of the *American Economic Review*.

²⁴ Doctoral origins of editors of *Sociometry* changed only slightly in the direction of increasing diversity between 1956 and 1965. Doctoral origins of contributors also changed very moderately in the same direction during the same period. However,

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TABLE 4. PRESTIGE OF DOCTORAL ORIGINS OF EDITORS OF THE
AMERICAN SOCIOLOGICAL REVIEW, 1946-65, AND THE
AMERICAN ECONOMIC REVIEW, 1956-65

	<i>American Sociological Review</i>		<i>American Economic Review</i>
	1946-55	1956-65	1956-65
<i>Percentage of editors with doctorates from:</i>			
Major universities	56	66	71
High minor universities	20	24	6
Low minor universities	9	4	3
Foreign universities	3	0	16
Graduate school unknown	12	4	0
No Ph.D.	0	2	3
Total	100	100	99 *
Total number of editors:	(34)	(67)	(31)

* Rounding error.

TABLE 5. PRESTIGE OF ACADEMIC AFFILIATIONS OF AUTHORS
BY TYPE OF EVALUATION AND ACADEMIC AFFILIATIONS
OF EDITORS

	<i>Type of evaluation:</i>	
	Anonymous	Not anonymous
<i>Percentage of editors at minor universities:</i>		
	20%	26%
	<i>Sociometry</i>	<i>American Economic Review</i>
	1956-58	1956-62
<i>Percentage of authors at:</i>		
Major universities	37	38
High minor universities	13	16
Low minor universities	27	17
Colleges	2	9
Non-academic positions	21	11
Foreign positions	0	9
Total	100	100
Total number of papers:	(75)	(201)

TABLE 6. PRESTIGE OF DOCTORAL ORIGINS OF AUTHORS BY TYPE OF
EVALUATION AND DOCTORAL ORIGINS OF EDITORS

	<i>Type of evaluation:</i>	
	Anonymous	Not anonymous
<i>Percentage of editors with doctorates from minor universities:</i>		
	24%	9%
	<i>Sociometry</i>	<i>American Economic Review</i>
	1956-58	1956-62
<i>Percentage of authors with doctorates from:</i>		
Major universities	56	60
High minor universities	21	8
Low minor universities	8	3
Foreign universities	0	9
Graduate school unknown	8	13
No Ph.D.	7	7
Total	100	100
Total number of papers:	(75)	(202)

A similar relationship between the academic affiliations of editors and the academic affiliations of contributors to the *American Economic Review* can also be seen although the differences are not as pronounced. Between 1963 and 1965, when the editorship became more diverse, there was an increase in the proportion of articles by economists from minor universities. It might be argued that these findings reflect the increase in the amount of research being conducted at minor universities during this period and hence in the number of articles being submitted from these institutions rather than changes in the academic affiliations of editors. However, the fact that a large proportion of the articles published by the *American Sociological Review* between 1946 and 1955 were by authors from minor universities contradicts this argument.²⁵

It appears that the academic characteristics of authors of articles selected for publication by scientific journals are similar to the characteristics of the editors of the journals and that anonymity does not affect this relationship. This relationship is seen quite clearly when the findings from the several journals discussed here are juxtaposed. These tables show that diversity in the academic affiliations of editors is related to diversity in the academic affiliations of contributors; diversity in the doctoral origins of editors is related to diversity in the doctoral origins of contributors.

Another characteristic of editors which might also be reflected in their selection of articles is professional age. There is some indication that editors prefer the work of contributors who are closer to their own professional age.²⁶

although the doctoral origins of editors of the *American Economic Review* did not become more diverse during this period, the doctoral origins of authors did broaden to some extent. This shift in the doctoral origins of *American Economic Review* authors suggests the importance of personal ties based on academic affiliations since the academic affiliations of editors did become more diverse during this period.

²⁵ It is also possible that the number of articles submitted by scientists at minor universities is a function of the number of editors from minor universities since personal ties with editors may increase the likelihood that an author will submit an article to a particular journal.

²⁶ Since the percentage of authors whose doctoral origins could not be ascertained increases substantially after 1962, data for all contributors for the years 1963, 1964 and 1965 were not included in this part of the analysis.

TABLE 7. PRESTIGE OF ACADEMIC AFFILIATIONS OF AUTHORS
(SELECTED BY ANONYMOUS EVALUATION)
BY PRESTIGE OF ACADEMIC AFFILIATIONS OF EDITORS

	Percentage of editors at minor universities:		
	20%	31%	48%
	Sociometry		
	1956-58	1959-61	1962-65
<i>Percentage of authors at:</i>			
Major universities	37	30	26
High minor universities	13	10	12
Low minor universities	27	38	47
Colleges	2	1	3
Non-academic positions	21	18	9
Foreign positions	0	3	3
Total	100	100	100
	(75)	(91)	(134)
Total number of papers:			

TABLE 8. ACADEMIC AFFILIATIONS OF AUTHORS BY ACADEMIC AFFILIATIONS OF EDITORS

	ASR		Sociometry		Sociometry		Sociometry	
	1946-55	1956-65	1962-65	1963-65	1959-61	1956-62	1956-58	
<i>Percentage at minor universities, colleges:</i>								
Editors	65	61	48	38	31	26	20	
	N (34)	(67)	(50)	(13)	(39)	(23)	(41)	
Authors	57.5	55	62	52	49	42	42	
	N (712)	(610)	(134)	(92)	(91)	(201)	(75)	

TABLE 9. DOCTORAL ORIGINS OF AUTHORS BY DOCTORAL ORIGINS OF EDITORS

	Sociometry		ASR		Sociometry		AER	
	1959-65		1956-62		1946-55	1956-58	1956-62	
<i>Percentage with doctorates from minor universities:</i>								
Editors	30		31		29	24	9	
	N (74)		(45)		(34)	(41)	(23)	
Authors	35		32		28	29	11	
	N (225)		(446)		(712)	(75)	(202)	

TABLE 10. MEDIAN PROFESSIONAL AGES OF AUTHORS BY
MEDIAN PROFESSIONAL AGES OF EDITORS

	AER		ASR		Sociometry		ASR	
	1956-62		1946-55		1956-62		1956-62	
<i>Median professional age:</i>								
Editors	16.2		13.0		10.4		10.4	
	N (20)		(30)		(63)		(43)	
Authors	7.3		6.4		5.8		5.3	
	N (178)		(594)		(251)		(481)	

However, since the majority of authors tend to be relatively young (due partly to the steady increase in the numbers of scientists entering these fields and partly to the decline in scientific productivity with increasing age), the effect is not as large as it might be otherwise. On the other hand, the finding does provide some insight into the ways in which generational styles and orientations toward scientific work are perpetuated.

Summary and Conclusion

Examination of the academic characteristics of contributors and editors of three scientific journals indicates that the distribution of characteristics such as academic affiliation, doctoral origin and professional age of contributors to scientific journals is similar to the distribution of these same characteristics among journal editors. Anonymous evaluation of articles does not change this relationship.

It appears that the evaluation of scientific articles is affected to some degree by non-scientific factors. At least two interpretations of the role of the latter are possible: (1) As a result of academic training, editorial readers respond to certain aspects of methodology, theoretical orientation and mode of expression in the writings of those who have received similar training; (2) Doctoral training and academic affiliations influence personal ties between scientists which in turn influence their evaluation of scientific work. Since most scientific writing is terse, knowledge of details not usually included in journal presentations may influence the reader's response to an article. Professional age affects the reader's evaluations in both of these ways.

The data presented here supports the first of these interpretations more strongly than the second. In all three journals, the majority of authors and editors have degrees from major universities. This suggests that editors and contributors share common viewpoints based on training, rather than on personal ties.²⁷ However, as the academic affiliations of editors become more diverse, the academic affiliations of authors become more diverse also. This

²⁷ Wanderer found that 41% of the articles and reports in the *American Sociological Review* between 1955 and 1965 were written by authors with doctorates from four major universities. 58% of the editors during that period had degrees from those same four universities.

suggests that personal ties may play a secondary role.

Any such interpretation must of course be tentative pending further investigation of these relationships. The analysis presented here suggests that disciplines vary in the extent to which articles by authors from diverse institutional backgrounds are selected for publication in their principal journals. Both the factors producing these differences and their consequences for the progress of the field are difficult to trace. It appears that during a decade when the amount of research and the

number of doctorates being produced in low minor universities has been increasing, the *American Sociological Review*, due to the academic backgrounds of its editors, has been more receptive to the publications produced in these settings than the *American Economic Review*. It may not be entirely a coincidence that an economist, Martin Bronfenbrenner, in discussing "trends, cycles, and fads" in economic writing, described the history of economics, including the present period, in terms of its reigning orthodoxies which he saw as being capable of interfering for

a time with the progress of the discipline.²⁸ These elusive problems comprise an important area for future investigation in the sociology of science.

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²⁸ Martin Bronfenbrenner, "Trends, Cycles, and Fads in Economic Writing," *American Economic Review*, 56 (1966), pp. 538-552.

NOTICE

All manuscripts and communications to the Editor for forthcoming issues of *The American Sociologist* should be addressed to:

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