DOCUMENT RESUME

ED 125 952 SO 009 233

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TITLE Brahman and Untouchable: The Transactional Ranking of American Geography Departments. Discussion Paper No. 10.
INSTITUTION Syracuse Univ., N.Y. Dept. of Geography.
PUB DATE Dec 75
NOTE 44p.
AVAILABLE FROM Discussion Papers Editor, Geography Department, 343 H. B. Crouse Hall, Syracuse University, Syracuse, New York 13213 ($1.00 paper cover)

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS Academic Rank (Professional); Comparative Analysis; *Departments; Educational Status Comparison; *Geography Instruction; Graduate Surveys; Human Geography; Job Placement; Personnel Data; *Personnel Selection; Social Science Research; Social Sciences; Socioeconomic Status; *Status; *Universities

ABSTRACT

The ranking of university geography departments based on hiring transactions is compared to the ranking of Indian village castes based on food transactions. Fifty-one geography departments were examined for the period 1960-1974 when 326 hiring transactions occurred. A study of caste ranking in a north Indian village by McKim Marriott and existing surveys of the academic standings of geography departments are used to demonstrate the relationship. Measures of department status, based on the production of Ph.D. graduates and journal articles written by department members, are reviewed and compared. An algorithm is described which ranks Ph.D. graduates according to their job placement in geography departments, and its results are compared with the other measures. Findings indicate that, as in the case of Indian castes where ranking is determined by food transactions, geography departments belong to a hierarchy based on personnel transactions. (ND)

DISCUSSION PAPER SERIES

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BRAHMAN AND UNTOUCHABLE: THE TRANSACTIONAL RANKING OF AMERICAN GEOGRAPHY DEPARTMENTS

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Number 10

December, 1975

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Abstract

Marriott's demonstration that a matrix of observed food transactions makes possible a ranking of Indian village castes that is close to a consensual ranking suggests that the status of academic departments may be elicited from hiring transactions. Existing surveys of the academic standings of geography departments and a variety of surrogate measures of status based on the production of Ph.D.'s and journal articles are reviewed and compared. An algorithm to be used in ranking departments according to the placing of their Ph.D.'s is described and demonstrated, using geography departments, and its results are compared with the other measures. Transaction ranks are found to correspond closely to consensus ranks and can be derived quickly and cheaply. Some refinements of the analogy between Indian castes and American academic departments are proposed.

BRAHMAN AND UNTOUCHABLE: THE TRANSACTIONAL RANKING OF AMERICAN GEOGRAPHY DEPARTMENTS

Introduction

In Boston, as everyone knows, the Lowells talk to the Cabots, and the Cabots talk only to God.[1] This familiar epigram provides a neat illustration of the way in which social transactions appear to "act out" consensus regarding status, and thereby to maintain or strengthen the consensus. In ostensibly open societies, where protocol does not offer a guide, the pattern of certain kinds of social exchange can disclose the existence of widespread agreement regarding social rank. It is, of course, extremely difficult to read such indications in large complex systems with any confidence, and those wishing to ascertain status on a broader scale have had to use other means.

A common method is to record or elicit opinion in order to discover what the consensus is. The defects of this method are well known: idealization, confusion of fame or notoriety with prestige, and the ego-aggrandizement effect. Another common method is to look for measurable attributes that are thought to confer status and to use one or more of these as guides to what the actual consensus may be. Such is the frequently used measure of Socio-Economic Status (usually abbreviated as SES), made up of varying parts of income, education, and occupation measures. As the use of such indicators becomes a matter of course, status becomes what status measures measure. Not only is it difficult to tell just what the measures

mean, a problem is also created by the fact that the conventional attributes can be manipulated or simulated to make otherwise unsupported claims to status.

In certain circumstances, at a somewhat constricted scale, the third method that we have already alluded to may provide the best solution. A superbly executed demonstration of its usefulness and feasibility has been given recently by the anthropologist McKim Marriott in a study of caste ranking in a North Indian village.[2] While castes everywhere in India form a hierarchy, there is, within certain broad limits, considerable regional variation and even local variation in the number of castes, the relative position of individual castes, the sharpness and elaboration of the stratification, and its stability over time. One cannot then tell with certainty what the caste structure of a particular village will be.

The question Marriott addressed was this: how might one discover the local hierarchy? The alleged attributes of high caste status, such as land ownership, vegetarianism, and cleanliness of occupation, did not provide an adequate or consistent basis for ranking. The next step was to elicit opinion as to rank, and this was found to be on the whole precise, consistent, and in considerable agreement. Informants often cited food transactions to support their opinions, although a great variety of other acts could be adduced as support. For example, a Brahman might enter the house of a Leatherworker unannounced to call him to work, but a Leatherworker intruding unbidden into a Brahman courtyard might be beaten, a vivid acting out of the universal consensus that Brahmans are socially superior to Leatherworkers.

Marriott found observations of food transactions most useful for his purpose because they occur in a variety of contexts: in agricultural work, domestic service, in visiting, as a way of seeking religious merit, and in the giving of feasts. Although transactions may be between individuals, they stand as transactions between castes, defining caste status. The cardinal principle governing the transactions is that givers are superior to receivers. There is a further elaboration: different kinds of food are distinguished by their relative immunity to pollution (that is, pollution of a mythic kind). Thus, parched grain, cooked with fire, is "safer" and therefore more acceptable than food cooked with water. It is the nature of the transaction and not the caste per se of the participants that matters. As Marriott puts it: the main concern of the villagers is "to see that a previously enacted order of castes is currently reenacted."[3]

Marriott then proceeded to record the circumstances of several hundred food transactions and to rank castes, for each category of food, according to the net balance between giving and receiving. His final ranking by this method was found to agree very well with the consensus ranking ascertained earlier, especially at the major lines of division. Because of common misconceptions, it must be stressed that the caste structure of Indian society is not a rigid one, and, in fact, the re-enactment of the order mentioned by Marriott can be thought of as involving a continual renegotiation of roles. In his village Marriott found that Goatherds had moved upward within a generation across a major dividing line between so-called "dirty" and "clean" castes. They had had an opportunity to buy good land cheaply, and to

lend money, and through their new economic power had been able to induce several other castes to take food from them. Marriott thinks that transaction-based rank may run ahead of opinion. Thus, the Carpenters emerge in the food transaction analysis as second only to Brahmans, and superior to the Jat grain cultivator, the Merchant, and the Scribe, but are classed in a group as no more than equals of these by the villagers.

Academic Status

Marriott concludes his study by suggesting that similar matrix representations of giving and taking might be adapted not only to the study of actual systems of stratification, but also to competitive behavior generally, both corporate and other. The aim of this paper is to try to do just that in the particular case of academic departments. It is a commonplace of sociological literature for the academic community to be seen as a set of strata with little mobility between and an elite in control of the whole system. D. Shichor notes that however it may contradict the academic ideal, ascriptive as well as achievement criteria are used to judge individuals in the academic community.[4] A new man "is evaluated not according to his performance alone, but to a large extent according to the graduate school which granted his degree."[5]

So widely accepted has this notion been that Caplow and McGee's seventeen-year old study, The Academic Marketplace, which is still the major work on the subject, carries through the analysis of individual professorial prestige and mobility from the basic assumption, without much discussion of it, that academic institutions do occupy

identifiable ranks or levels in a hierarchy.[6] They introduce at the outset the memorable designations "major league," "minor league," "bush league," and "academic Siberia," simply because, as they say, there are such "large familiar sectors of the academic world" that have no common names.[7] We shall not follow their practice here, but readers may find it useful to keep in mind such analogues as "Brahmans" and "Untouchables," drawn from the popular conception of the Indian caste system.

The Academic Marketplace and work by other sociologists show that institutional ranking corresponds to caste ranking in a number of ways.[8] It should be noted first of all that whenever Caplow and McGee, or the informants they cite, appear to be speaking of universities as the source and destination of faculty people, the unit of reference intended is the department. Consensus ranking of departments within disciplines is preserved in the American Council on Education ratings of graduate programs.[9] These rankings of different disciplines show time and again that while top universities, which may be identified by the number of top departments they have, will by this definition have highly rated departments in many disciplines, they may have inferior departments in some, while in almost every discipline, one or another superior department will be located at an inferior university. Use of the terms "superior" and "inferior" has, of course, no reference to the actual quality of an institution, but only to relative position on some consensual scale of ranking. In any case, within a discipline it is the prestige of the department and not the university that matters, although the former is not likely to

be altogether unaffected by the latter.

The cardinal principle that allows some form of Marriott's transaction analysis to be applied to academe was stated by Logan Wilson in 1942, and is cited by Caplow and McGee: the academic recruit cannot expect placement in an institution of higher prestige than the one from which he is graduated.[10] Just as the food transaction among castes implies the superiority of the giver, the hiring transaction involving the new Ph.D. implies the superiority of the department that produced him. But in practice, just as Brahmans do accept certain pure foods from other high ranked castes, topmost departments must take Ph.D.'s from other presumably prestigious departments. In fact, the authors of The Academic Marketplace suggest that there may even be some tactical advantage in hiring from a slightly weaker department.[11]

In the later stages of a career, movement from minor to major league entails costs that must be traded off, while movement upward from the bush leagues to the majors is "unheard of."[12] When hiring, inferior departments would be expected to screen a larger number of applicants from a wide range of departments and were found to do so, just as inferior castes take food from a great number of castes and give to few. Because inferior departments reported as much success in getting desired job candidates as did superior departments, Caplow and McGee argue that the quality of the product from superior departments, who were usually the largest producers, must have declined the farther down the scale it was sent, just as increasingly "unsafe" food will be accepted by castes of low status as the transaction

spans an increasing s cial distance.[13] The extreme expression of this rule in the Indian village is that the "Untouchable" Sweeper will even take garbage or leavings from the hands of the Brahman, but we do not have the means here to look into the possibility of a corresponden e in the academic world. A corollary should be noted: in neither system does the downward transmittal adversely affect the standing of the giver.[14]

These observations, if assumed to be representative of departmental behavior in hiring transactions, can be used to construct a ranking algorithm based on the identification of the departments whose Ph.D. products are most acceptable to similar departments.

Ranking of Geography Departments

Before we do so, let us look at the results of surveys assessing the prestige of geography departments, comparing them at the same time with surrogate measures that are based on presumed attributes of academic status. Two well-known surveys, conducted under the auspices of the American Council on Education in 1969 (hereafter referred to as "Roose and Andersen") and an earlier one in 1964 (hereafter: "the Cartter report") have been widely discussed and used despite their evident shortcomings; their ranking of geography departments is presented here (Table 1).[15]

In a foreword in Roose and Andersen, Logan Wilson notes some criticism of the earlier report: "a minority" felt that it perpetuated hearsay and historical bias, and one writer dismissed it as "a compendium of gossip."[16] One might well question the selection of res-

TABLE 1.--GEOGRAPHY DEPARTMENTS BY RATED QUALITY OF GRADUATE FACULTY[a]

A. 1969 SURVEY (ROOSE AND ANDERSEN)[b]		B. 1964 SURVEY (CARTTER)[c]	
Rank	Institution	Rank	Institution
1	Chicago	1	Wiscon in
2	Michigan	2	Chicago
3	Minnesota	3	Berkeley
3	Wisconsin	4	Washington
5	Berkeley	5	Syracuse
6	Washington	6	Northwestern
7	Ohio State	7	Minnesota
8	Penn State	8	UCLA
8	Syracuse	9	Michigan
10	[illegible]	10	Louisiana State
10	Ka.. as	11	Penn State
10	Northwestern	12	Indiana
13	Clark	13	Iowa
13	Iowa	14	Johns Hopkins
15	Johns Hopkins	15	Kansas
16	Georgia	16	Michigan State
16	Illinois	17	Ohio State
16	Louisiana State	18	Illinois
16	Michigan State	19	Clark
16	Oregon	20	Pittsburgh
16	Texas	21	Columbia
22	Cincinnati	21	Nebraska
22	Columbia	21	Texas[y]
22	Florida		
22	Indiana		
22	Maryland[x]		

[a]Criteria for a department's inclusion in either survey were (1) the institution to which it belonged had awarded at least one hundred Ph.D.'s; (2) the department itself had awarded at least one Ph.D. in the decade before the survey date.

[b]Source: Kenneth D. Roose and Ch s J. Andersen, A Rating of Graduate Programs (Washington: rican Council on Education, 1970), p. 60.

[c]Allan M. Cartter, An Assessment of Quality in Graduate Education (Washington: American Council on Education, 1966), pp. 36-37.

[x]Altogether, thirty-four doctoral departments were the object of this survey. For the purposes of this analysis, Nebraska and Pittsburgh, which appear in Column B, are both assigned Rank 27 in Column A.

[y]Altogether, thirty doctoral departments were the object of this survey. For the purposes of this analysis, Cincinnati, Florida, Georgia, Maryland, and Oregon, which appear in Column A, are assigned Rank 24 in Column B.

pondents, which was heavily weighted in favor of older faculty and long-established departments with a large roll of completed doctorates--in a word, toward "the establishment."[17] The bias in selection appears to have been reinforced by differences in the response rate (one can calculate that this was 100 percent for geography chairmen, 83 percent for the rest). Caplow and McGee find a strong bias toward one's own department in the assignment of status ("the chairmen of 51 percent of the departments sampled believed their departments to be among the top five in the country in their disciplines").[18] We may presume that academics also manifest, as a rule, a strong bias in favor of the "parental" department, which gave them the Ph.D. These biases, which Caplow and McGee call "the aggrandizement effect," seem to be analogous to the strong and consistent tendency to rate one's own locality high that shows up in Gould's studies of place preference.[19]

Keeping this bias in mind, Beaumont undertook to compare Roose and Andersen's ranking of 21 departments with his own ranking of them by the number of their Ph.D.'s serving on the faculties of the 51 American geography departments granting the Ph.D. in 1970.[20] After scanning several tables, Beaumont concluded that if the faculty of all 51 departments were to be surveyed and each member were to rate his parental department high, the survey would yield results remarkably similar to those published in Roose and Andersen, and commented, a touch invidiously: "Perhaps somewhat surprisingly quality and quantity appear to be closely correlated in American graduate education."[21]

One discerns the outline of tongue in cheek but the comment is not altogether just, and statistical analysis suggests that the relation-

ship is in fact quite complex (ref. Table 2, row 5). For one thing, Beaumont is not using mere quantity of Ph.D. production, as he might have done, but production that has been subject to at least some selection for quality through appointment to the faculty of graduate and doctoral departments.[22] More to the point, the correlation between Beaumont's and Roose and Andersen's ratings is not particularly strong, especially when only the fourteen top departments are considered, but the relationship becomes truly "close" when the top fourteen departments of the Cartter report are substituted for Roose and Andersen's. We may then accept the existence of a strong correspondence between quantity of production of Ph.D.'s employed in American doctoral departments and what was reputed several years earlier to be quality in geography departments! Implied in these findings is a shift in consensus regarding departmental status, although there is good overall correspondence between the two survey ratings, less so among reputed "major" departments (Table 2, rows 1 and 2). By way of comparison, the 1964 and 1969 rankings of twenty-one major sociology departments have an r_s of .819, while in mathematics, status in 1969 was very much quo ante: $r_s = .956$ ($N = 27$).

Production of Ph.D.'s and several ratios based on it do not then appear to measure status in geography with much reliability, certainly not if we are concerned only with the more prestigious departments (Table 2, rows 5 to 9). There are some very large deviations between the consensual rank and rank ordered on the variables related to Ph.D production: Michigan (2, in Roose and Andersen) is seventeenth in its chances of having its 1960-74 Ph.D.'s placed in a doctoral department; Minnesota

1. [illegible] and Andersen [illegible] departments	1	[illegible]	.837	[illegible]
2. [illegible] and Andersen [illegible] departments	[illegible]	1	[illegible]	n.a.
3. Cartter [illegible] departments	.837	[illegible]	1	n.a.
4. Cartter [illegible] departments	[illegible]	[illegible]	n.a.	1
[illegible] number of [illegible] in doctoral departments [illegible] 23 departments	.658	[illegible]	.657	.854
6. Number of Ph.D. [illegible] 1974 24 departments	.641	[illegible]	.604	.724
7. Number of Ph.D. [illegible] 1974 24 departments	.642		.615	
8. Estimated probability [illegible] 1960-1974 Ph.D. being located in a doctoral department in 1974 24 departments	[illegible]	[illegible]	[illegible]	[illegible]
9. Estimated probability of a graduate student being placed in a doctoral department 24 departments	.579	[illegible]	[illegible]	[illegible]
10. Volume of current staff and student publication in major journals 2[illegible] departments	.788	[illegible]	.658	[illegible]
11. Mean volume of publication by current faculty in major journals 28 departments	.714	[illegible]	.730	[illegible]
12. Volume of Ph.D. and graduate student publication in major journals 28 departments	.633	[illegible]	.744	.796
13. Mean volume of publication by Ph.D.'s in major journals 28 departments	.516	[illegible]	.720	[illegible]

Note. Because the number of observations used in deriving the correlation coefficients varies substantially, the probability P that the correlation occurs by chance is computed in each case and symbolized in the following manner

1,2,3	P<.001
1.2.3	.001<P<.01
1 2 3	.01<P<.05
1 2 3	"insignificant," i.e., low significance to virtually none P>.05

n.a not applicable

Notes to TABLE 2

[a]The correlation coefficients in this table are of two kinds. Spearman's rho or r_S, is used when the full set of 28 departments, or as many for which data are available, are ranked (Column A, except for row 4; Column C, except for row 2). Where, for example, data on one variable are available for 24 departments only, the ranks of the other variable are compressed from the set of 28 to 24. In this ranking, shared ranks are averaged. When the subset of 14 departments is used, correlation is with the ranks computed for the use of r_S, which are not collapsed to 14, and the coefficient obtained is thus Pearson's r. Although the subset of 14 happens to be half the size of the full set, it is used chiefly for convenience: some of the data used in these analyses (e.g., those needed to compute the scores in rows 6 to 13) are missing for the department ranked fifteenth in Roose and Andersen, namely, Johns Hopkins, as well as for several lower-ranked departments.

[b]The fourteenth ranked department in the Cartter report, Johns Hopkins, has been omitted for lack of certain data (see preceding footnote), and has been replaced by the fifteenth, Kansas.

[c]Source: Peter Beaumont, "On the Origin and Dispersal of Professional Geographers," The Professional Geographer, 23:2 (April 1971), p. 156.

[d]Sum of (1) number of Ph.D.'s "surviving" in 1969, according to Directory (Washington: Association of American Geographers, 1969), as compiled by John Fraser Hart, Manpower in Geography: An Updated Report. Association of American Geographers Commission on College Geography Publication No. 11. (Washington: Association of American Geographers, 1972), p. 19; and (2) sum of annual departmental record of Ph.D.'s granted, academic years 1970 to 1974, based on Guide to Graduate Departments of Geography in the United States and Canada, 1970-71 [et seqq.] (Washington: Association of American Geographers, 1970 [et seqq.]). This annual publication will be cited henceforth for convenience as "the Association Guide," and the previously cited directory will be cited as "the Association Directory," together with the appropriate year when relevant. Note that the two sets of Ph.D.'s in (1) and (2) are not exactly the same, since some of those in (2) may not have maintained membership in the Association, whereas all those in (1) had done so in 1969 but might not have equaled in sum the total departmental production of Ph.D.'s in the corresponding years.

[e]See footnote d for sources of data.

[f]Ratio of 1960-1974 Ph.D.'s serving in 1974 as full-time doctoral department faculty to all "surviving" 1960-1974 Ph.D.'s (row 6). Source of number of Ph.D.'s in doctoral departments: Association Guide, 1974-75.

[g]Probability of a Ph.D. being located in a doctoral department (row 8) multiplied by a probability of a graduate student earning a Ph.D., that is, by the ratio of mean annual Ph.D. production in 1960-1971 to the mean annual graduate student body size from 1967 to 1974. Source of mean graduate student body size: Association Guides, 1967-68...1973-74.

[h]Number of "major articles" by current departmental staff and students in three journals, 1964-1973 inclusive. See text for further explication.

[i]Ratio of number of "major articles" (row 10) to mean number of full-time professorial faculty in three academic years: 1968-69, 1970-71, 1974-75. Source: Association Guides for corresponding years.

[j]Source of place of Ph.D. origin of authors: index to Association Guides for various years and, that failing, Association Directories for various years.

[k]Ratio of publication by Ph.D.'s (row 12) to number of Ph.D.'s "surviving" in 1974 (row 6).

(3) is fourteenth in number of Ph.D.'s still "surviving" in 1974, and Kansas (10) is twenty-first; Clark (13) is first in number of surviving Ph.D.'s, and fifth in 1960-74 production. First in the recent production of Ph.D.'s is tenth-ranked UCLA, which is twenty-first in the chances of those recent doctorates finding positions in doctoral departments. Northwestern, whose Ph.D.'s and graduate students have by far the best chance of doing so, is ranked tenth in Roose and Andersen.

A set of measures based on "publication in major journals" shows somewhat better correspondence with consensual ranking, but is almost entirely unreliable as a guide to rank among prestigious departments (Table 2, rows 10 to 13). Consensus surveys having the scope of those conducted by the American Council on Education are expensive, laborious, and infrequent, and sociologists have therefore looked to the publication record in order to measure both individual and institutional prestige although the procedures usually followed are by no means sparing of labor. E. T. Lightfield claims to have found that quantity of publication is indeed a measure of a scholar's quality, at least in the discipline of sociology.[23] By counting cross-references to the work of some 200 sociologists in fifteen years' worth of publication in a major journal, and then postulating that the "quality" of a scholar's work can be measured by the frequency with which it is cited, Lightfield found that quality, by this rather odd definition, had a correlation of .75 with quantity of publication. Another writer argues that the publication record can be used as "an objective criterion" of departmental prestige because "publication in the leading journals places the name of the institution in the public eye, and it is from continually seeing the

name of the institution that others grant it high prestige."[24]

Be that as it may in sociology, it would seem that things are not at all so cleanly ordered in American geography. With all such would-be measures of status, the choice of "major journals" and the period to be analysed are open to question. Here only "major" articles (excluding reviews, research notes, letters, editorials, etc.) that appeared in the ten-year run (1964-1973) of three American journals--The Annals, Association of American Geographers; Economic Geography; The Geographical Review--have been used.[25] Numbers of articles (and fractions in the case of joint authorship involving different departments) were counted by author's place of contemporary departmental affiliation as given in the journal article and by his place of Ph.D. origin (or of contemporary graduate study in the case of students), the latter information having to be extracted, laboriously, from the indexes of Association Guides and from various Association Directories.

Given the dispersal of thematic interests in geography and the diversity of its links with other disciplines, it seems highly probable that the record of publication in the three journals analysed can only be a small fraction of the total American disciplinary production, even when one leaves books and monographs out. The recent appearance of a commemorative volume containing the publication record of Berkeley Ph.D.'s allows us to make some pertinent computations, which are tabulated here (Table 3).[26] The annual rate of publication per Ph.D. is seen to change little in the course of time, but publication in the major journals drops steadily (Table 3, row 3, and rows 1 and 4, respectively).[27]

TABLE 3.--CHRONOLOGICAL PATTERN OF PUBLICATION BY BERKELEY PH.D.'S.

Annual Rate of Berkeley Ph.D. Publication of "Major Articles": Number of Articles ÷ (Number of Ph.D.'s × Span in Years to 1972)[a]

	Year Ph.D. Awarded		
	1950-1954	1958-1962	1966-1970
	(A)	(B)	(C)
1. Publication in the three major journals of geography	.181	.106	.067
2. Publication elsewhere	.398	.418	.460
3. Publication in all journals (row 1 + row 2)	.579	.524	.527
4. Publication in the major journals (row 1) as a percentage of all publication (row 3)	31.26	20.23	12.71

[a]The time span is calculated in years from the mid-point of the respective five year Ph.D. awarding span to 1972, inclusive; the spans are thus 20.5, 12.5 and 4.5 years for columns A, B, and C respectively. Production of articles, however, is life time production as reported in James J. Parsons, ed., 50 Years of Berkeley Geography 1923-1973. Supplement to: The Itinerant Geographer, (Berkeley: Department of Geography, University of California, 1973). Identification of a "major article," apart from those published in the three major geographic journals, is necessarily imprecise.

The latter trend may be a general one, and to the extent that it indicates slightly easier access to major journals, or preference for publication in them, on the part of older scholars of prestigious academic parentage, it would help to explain the very high correlation between publication by a department's Ph.D.'s and the earlier (1964) status ranking of departments, even when the fourteen top ones are considered alone (Table 2, row 12). Faculty with Ph.D.'s from the top dozen departments in Roose and Andersen together with their graduate students were the authors of 40 percent of the articles surveyed, 958 in all, while those from the next dozen departments accounted for 17

percent. When a correction for size of the respective Ph.D. populations is made, giving a crude index of individual Ph.D. productivity as measured by publication in major journals, Ph.D.'s from the first set of departments are found to be, in the aggregate, half again as productive as those from the second (Table 2, row 13). The productivity of doctoral department faculty and students is expectably higher, and again the most prestigious departments display in the aggregate greater productivity: that of faculty and students in the top dozen is three times greater than in the remaining thirty-nine.

It would be misleading if these statistics were to convey an impression that major departments or their Ph.D.'s dominate the major disciplinary organs: the authors of roughly three out of five articles are not on the faculty of any American doctoral department of geography, being at other graduate departments of geography, at foreign universities, in other disciplines, or outside academe altogether. Moreover, extraordinary deviations from the consensual ranking appear when departments are ranked on publication-related variables. Thus, in the productivity of its Ph.D.'s and of its faculty, Michigan (2) ranks fifteenth and twenty-fifth, respectively; Minnesota (3) places sixteenth and fourteenth; Johns Hopkins (15) is among the eight doctoral departments that had no article by staff or student in any of the three journals during the decade surveyed. But unrated Wisconsin-Milwaukee, Hawaii, and California-Davis appear in fifth, tenth, and fourteenth place in volume of publication by current staff and students, with positions shifting on the scale of faculty productivity to eighth, seventeenth, and second--out of fifty-one departments. However it may affect individual fortunes in

geography, conspicuous publication by departmental entities or the lack of it do not appear to create by themselves a standing for the home department or the parental one, not, at least, in the short term. Rather, the correlations seem to suggest publishing productivity is itself a function of prestigious academic parentage.

Transaction Ranking

As an alternative both to opinion surveys and to attribute measures, which appear to be uncertain and are laborious to compile, we propose a ranking based on the principle that placing Ph.D.'s gives prestige according to the rank of the taker. Some improvisation was required in devising a suitable "transaction ranking" algorithm, which is displayed in Table 4, and several specifications require brief comment. (A step-by-step demonstration of the operation of the ranking algorithm is provided in the Appendix.)

1. Since we are interested in the traffic in Ph.D.'s we consider only those geography departments in the United States that grant the degree, of which there were 51 listed in the latest Association Guide available, 1974-75, when the research was conducted.[28]

2. Persons who are not full-time faculty in such departments, with the rank of assistant professor or higher, and who are not Ph.D.'s of some other department of geography in the 51-member set, are excluded. The appointment of visiting and part-time faculty, lecturers, instructors, etc. is assumed to have no significance for the prestige of the parent institution, and we are not concerned here with whatever prestige might be transmitted to the donor departments in the case of Ph.D.'s on the regular faculty who come from other disciplines or from foreign

TABLE 1.--PROCEDURES FOLLOWED IN TRANSACTION RANKING OF ACADEMIC DEPARTMENTS

1. The analysis involves only the set of departments granting the Ph.D. in the discipline.

2. For each such department, regular faculty with the rank of assistant professor and above, and having the Ph.D., are listed, with the name of the department where the Ph.D. was obtained and the year it was awarded.

3. Ph.D.'s from any department not in the set, and Ph.D.'s teaching in the same department that awarded the degree, are excluded.

4. For each donor department, the location of all Ph.D.'s as recorded above among the faculty of the other departments in the set is then compiled.

5. Ranking. This proceeds in two stages. The first stage (steps A, B, and C below) ranks departments in groups or sub-groups, proceeding by successive elimination from the bottom upwards. All departments, whether of different rank or not, that are not separated by a line of some sort in the ranking schema, belongs to the same sub-group. The second stage (steps D and E below) ranks the departments occurring within groups on the basis of the results of the first stage.

FIRST STAGE

A The lowest rank is assigned to departments that have given no Ph.D.'s to any other department in the full set of departments.

B The next rank above is assigned to those departments that give their Ph.D.'s to departments no higher than in the rank below. A solid line (————)is used to indicate that the departments in the group immediately above the line give to no department of higher rank than the one immediately below.

C The procedure of identifying and ranking departments that give to departments no higher than those immediately below continues as long as possible, with the solid line below a department signifying that it is in this category.

The procedure ends, if only temporarily, when all the departments remaining give to at least one other department within the remaining group. When this occurs, the departments remaining are separated from the rank below by another line (————). Note that only the number of different receiving departments is considered; the number of Ph.D.'s given by the donor department to the same receiving department has no effect on the ranking.

The lowest group of departments among the remainder comprises those giving to no more than one other department. A department that gives only to another in this low group is placed in a lower sub-group within the group and is separated from them by another line ( ).

Should at any time all the remaining departments give Ph.D's to at least two other departments, they are separated from the departments immediately below by another line (). In this case, the lowest group comprises those giving their Ph.D.'s to no more than two other departments.

SECOND STAGE

D When all departments have been placed in ranks individually or in groups, departments within groups, or sub-groups, are ranked in the order of the highest ranked department to which each of them gives a Ph.D.

E Departments below the lowest of either of the two lines (———— ;) i.e. that do not give to a higher-ranked department, cannot be ranked more precisely in this way.

universities.

3. Faculty with Ph.D.'s from the same department in which they are teaching are excluded. Caplow and McGee refer to the presence of such faculty in a department as "inbreeding," and say that it is "commonly disapproved but widely practiced."[29] Another writer claims that it is more frequent among the more prestigious departments, who follow the logic that they cannot risk their prestige by hiring a large number of Ph.D.'s from lower-rated departments.[30] So, too, in India, poor travellers of high caste who wish to maintain caste orthodoxy must cook their own food since they cannot be sure that food in public eating-places has been prepared by someone of a suitably high caste. But the practice by itself does not indicate that the solitary eater is of high caste, since it may simply reflect a fear of pollution by strangers in general. In geography, as it happens, it is true for both high and low ranked departments that some practice inbreeding and some do not. While it may be safe for one's image of oneself, as well as convenient, for the purpose of transaction ranking, inbreeding tells us nothing and is to be ignored.

4. Multiple donations of Ph.D.'s from one department to another are assumed not to enhance the prestige of the giver, since this was established by the first of these transactions.

Fifty-one American doctoral departments of geography were ranked in this way, using the location in 1974-75 of faculty who had received the Ph.D. in the period from 1960 to 1974.[31] The fifteen-year span involved seemed to provide enough cases for the algorithm to work reasonably well, but not to go so far back in time that losses among older faculty might distort the pattern in a significant way. Altogether, 326 hiring transactions were involved in the analysis.[32]

The results are presented in Table 5. The lower levels in the schema are marked off cleanly through a sequence of eliminations, as a result of which each department from Maryland down gives at least one Ph.D. to a department in the level immediately below, but not above. Above a certain level (~~~~~) the situation is less clear, and some apparently anomalous transactions, involving very large upward exchanges (e.g., Colorado to Wisconsin) can occur. (While the various line symbols used in this and the following schemata are interesting in that they show the overall structure of ranks, they may be disregarded when the tables are being read simply for the rankings themselves.) At the upper level, a boundary appears (||||||||||||||||||) above which all eleven departments give Ph.D.'s to at least two others in the set; following our Indian analogy we might refer to these departments as "the twice-born" (although "twice-delivered" would be more accurate).

The correlation of the results with the Roose and Andersen and Cartter rankings and with the attributes previously considered shows transaction ranking to have much closer correspondence with the Roose and Andersen survey than do any of the tentative status surrogates, and this holds when the ranks of just the fourteen top departments in Roose and Andersen are correlated with their ranks in the 1974 transaction ranking (Table 6). Nevertheless, a few departments undergo quite marked displacement: Hawaii, unranked in Roose and Andersen, is fifteenth in our ranking; Louisiana State drops from a group of six departments that share sixteenth place in Roose and Andersen to thirtieth, and Oregon moves from equal rank with Louisiana State to the lowest category in the transaction ranking. Transaction ranking on the whole correlates more poorly than the survey ranking with the quantity of Ph.D. production, perhaps indicating that it is

TABLE 5. TRANSACTION RANK OF DOCTORAL DEPARTMENTS OF GEOGRAPHY, BASED ON THE LOCATION IN 1974-75 OF PH.D.'S BETWEEN 1960 AND 1974

Rank	Institution
1	Michigan
2	Washington; Wisconsin
4	Chicago
5	Minnesota
6	Northwestern
7	Kansas
8	Iowa
9	Berkeley; Penn State; Syracuse
12	Illinois
13	Michigan State
14	Ohio State
15	Indiana
16	Hawaii
17	Johns Hopkins
18	UCLA
19	Georgia
20	Clark
21	Colorado
22	Pittsburgh
23	SUNY-Buffalo
24	Southern Illinois
25	Texas
26	Florida
27	Columbia; Oklahoma
29	Maryland
30	Louisiana State; Texas A & M
32	Nebraska; North Carolina; Oregon State; Tennessee
36	Sixteen remaining doctoral departments

TABLE [illegible]. CORRELATION [illegible] 1974 TRANSACTION RANKS [illegible] DEPARTMENTS [illegible], WITH [illegible] AND [illegible] STATUS MEASURES[a]

Variable	1974 Transaction Ranking All Departments [illegible] A	14 top Departments B
1. Rose and Andersen	.842	657
2. Rose and Andersen 14 top departments	.643	n.a.
3. Cartter	.787	555
4. Cartter 14 top departments	n.s.	n.s.
5. Beaumont ranking number of graduates serving in 1970 as full-time professorial faculty of doctoral departments of geography	445	.711
6. Number of Ph.D.'s "surviving" in 1974	.595	[illegible]
7. Number of Ph.D.'s "born" in 1969-1973 and "surviving" in 1974	.686	[illegible]
8. Estimated probability of a 1969-1974 Ph.D. being located in a doctoral department in 1974	.557	[illegible]
9. Estimated probability of a graduate student being placed in a doctoral department	.780	404
10. Volume of current staff and student publication in major journals[b]	.678	[illegible]
11. Mean volume of publication by current faculty in major journals[c]	.678	.521
12. Volume of Ph.D. and graduate student publication in major journals	.602	482
13. Mean volume of publication by Ph.D.'s in major journals	.542	319

[a]See Table 2 for explanation of variables and symbols, numbered rows contain the same variables in both tables.

[b]Ranks are available for 51 departments. r_s = .634

[c]Ranks are available for 51 departments: r_s = .573

somewhat freer of the establishment bias implied in Beaumont's article, while showing closer correspondence with ratios estimating the chances of Ph.D.'s and graduate students being employed in graduate departments, which would seem to have more to do with actual status. Taking only the fourteen top ranked departments in transaction ranking, however, rank according to Ph.D. production variables provides little significant correlation, with the striking exception of Beaumont's ranking. This is no doubt because Beaumont ranked departments by the number of their Ph.D.'s in all doctoral departments, while the procedure followed in transaction

ranking then tends to eliminate departments producing small numbers of Ph.D.'s from the upper levels. But very large producers of Ph.D.'s need not rank high: UCLA, the largest producer in the period 1960-74, ranks eighteenth, based on the academic location of those Ph.D.'s in 1974. Publication-related variables tend to correlate with transaction-derived ranks much as they do with survey ranks.

Since comparison of the two American Council on Education surveys with each other and with the surrogate status measures yielded some suggestive results, transaction ranking was carried out on another set of data, the location of Ph.D.'s produced in 1953-67, as recorded in the 1968-69 Association Guide, that is, for a similar fifteen-year span set seven years earlier than the 1974 ranking. The results of this ranking and the correlations between them and the variables previously considered are presented here (Tables 7 and 8, respectively).

In each of the two temporal pairings, a remarkably close correlation is found between the results of consensual and transaction ranking. Also, where differences are found in the strengths of correlations between earlier and later consensual rankings and the several surrogate status measures, the same differences appear, perhaps more strongly accentuated, between the earlier and later transaction ranking correlations with the surrogate measures. With both kinds of ranking, it is the earlier of the two that shows the stronger correlation with rank according to the publication volume and productivity of a department's Ph.D.'s. Departments in the upper levels of both early rankings undergo widespread displacement in rank in the 1974 transaction ranking, as the low correlation coefficients indicate (Table 6, row 4, column A; Table 8, row 14, column B). It would seem that not only are the two types of status measurement producing

TABLE 7. TRANSACTION RANKS OF DOCTORAL DEPARTMENTS OF GEOGRAPHY, BASED ON THE LOCATION IN 1968-69 of PH.D.'S PRODUCED BETWEEN 1953 and 1967[a]

Rank	Institution
1	Berkeley ; Chicago; Washington
4	Wisconsin
5	Louisiana State
6	Michigan; Syracuse
8	Iowa; Kansas
10	Minnesota
11	Northwestern
12	Indiana
13	UCLA
14	Illinois; Johns Hopkins
16	Clark; Maryland
18	Columbia; Georgia; Penn State
21	Michigan State
22	Ohio State
23	North Carolina; Oregon State; Tennessee; Texas
27	Twenty-one remaining doctoral departments

[a]Michigan data obtained from Association Guide...1969-1970.

broadly similar rankings, they are also uncovering similar internal changes that have taken place in the course of a few years. As a demanding test of this possibility, the residuals from the regression of the later ranking on the earlier one for each type of ranking were themselves correlated. The coefficient had a value of .458 ($.01 > p > .05$),

TABLE [illegible]

Variable	1[illegible] Transaction Ranking, 28 departments where available	1[illegible] Transaction Ranking, 14 top departments
	A	B
1. Roose and Andersen	.745	.603
2. Roose and Andersen 14 top departments	.643	n.a.
3. Cartter	.842	.669
4. Cartter 14 top departments	.585	n.a.
5. Beaumont ranking, number of graduate serving in 19[illegible] as full-time professorial faculty of doctoral departments of geography	.671	.649
6. Number of Ph.D.'s "surviving" in 19[illegible]	.477	.[illegible]
7. Number of Ph.D.'s "born" in 1[illegible] and "surviving" in 19[illegible]	.540	.[illegible]
8. Estimated probability of a 19[illegible] - Ph.D. being located in a doctoral department in 19[illegible]	.565	.[illegible]
9. Estimated probability of a graduate student being placed in a doctoral department	.600	.[illegible]
10. Volume of current staff and student publication in major journals[b]	.568	.[illegible]
11. Mean volume of publication by current faculty in major journals[c]	.587	.[illegible]
12. Volume of Ph.D. and graduate student publication in major journals	.721	.615
13. Mean volume of publication by Ph.D.'s in major journals	.790	.658
14. 19[illegible] transaction ranking: 28 departments[d]	.801	.[illegible]
15. 19[illegible] transaction ranking, 14 top departments	.725	n.a.

[a]See Table 2 for explanation of variables and symbols; rows numbered 1 to 13 contain the same variables in both tables.

[b]Ranks are available for 51 departments: r_s = .629

[c]Ranks are available for 51 departments: r_s = .603

[d]Ranks are available for 51 departments: r_s = .811

supporting the proposition that the temporal changes in the rank of departments as ascertained by the two methods tend to be the same and of the same relative magnitude as well.

While these correlations would appear to validate the use of the technique, it is well to consider critically certain aspects of its operation. One defect is that it is incomplete, leaving a large number of departments at the lowest status level unsorted by rank. As an experiment, these were assigned ranks on the basis of the highest rank of the departments from which their faculty came, on the principle, noted earlier, that for an institution at some distance from the top, some prestige is transmitted downward by a Ph.D. from a donor of high status. Application of the method produced results which suggested that either our own impression of the reputation of these departments was faulty, or the principle is ineffective at the level involved, a conclusion that is supported by the lack of fit between the results obtained and those of consensus ranking in the few cases where comparison is possible.[33]

Another shortcoming is that transaction ranking can be extraordinarily volatile, as indicated by the turn in fortunes of the Louisiana State department from the 1967 ranking to the 1974 one and by the appearance of a fairly new doctoral department like Hawaii in sixteenth place in the 1974 ranking. There appear to be two reasons for this. First, the number of transactions involved, 326, is scarcely large enough to prevent a good deal of random "noise" from blurring the outline of a hierarchy involving fifty-one members. The hiring rate is too slow, given the size of the discipline, for the method to work at its best.

Second, much can depend in this method on a few critical hiring decisions made by the departments that emerge at the top. Some of the appointments do not last long for one reason or another, and many a new Ph.D. at a prestigious address will have moved two or three years later, in turn cancelling the prestige that had in principle been transmitted

back to the donor department by his earlier hiring. That there has been a brisk turnover of persons at the assistant professor rank, especially in high-rated departments, during the past decade is common knowledge that can be supported by a scanning of the Association Guides for several different years.[34] One way to control the effect of such transitory shifts in "credit" could be to exclude from the analysis Ph.D.'s earned less than three years before the date of the Association Guide used to perform the analysis.

These drawbacks notwithstanding, the method does have the advantage of being extraordinarily simple and cheap to use. A few man-hours of not very skilled work, requiring no machines, would make possible an annual updating. Because Canadian graduate departments are listed in the Association Guides, it was the work of an hour or two to rank them by the transaction method (Table 9). Intuitively, one would judge the results to be sound on the whole, despite the fact that the analysis was based exclusively on transactions in Ph.D.'s from Canadian departments; these made up only 23.5 percent of the 1974 faculty of doctoral departments who had obtained their degrees between 1960 and 1974. The remainder, 76.5 percent, had received Ph.D.'s in the United States, Britain, and elsewhere, in contrast to the United States, where only one in ten of the comparable group in geography have foreign academic parentage.

Coda

What insights, if any, can we derive from this enquiry? As is the case with Indian castes, geography departments are seen to comprise a hierarchy that is based on transactions. Moreover, the analogy with Indian castes is not as strained as some superficial differences might

TABLE 9. TRANSACTION RANKS OF CANADIAN DOCTORAL DEPARTMENTS OF GEOGRAPHY, BASED ON THE LOCATION IN 1974 OF PH.D.'S PRODUCED BETWEEN 1960 AND 1974

Rank	Institution
1	McMaster
2	British Columbia; McGill
4	Toronto
5	Alberta; Laval
7	Ottawa; Saskatchewan
9	Seven remaining doctoral departments[a]

[a]These are, in alphabetical order: Calgary, Manitoba, Queens, Simon Fraser, Victoria, Waterloo, Western Ontario.

suggest. The apparently fluid status of certain departments is not without its analogue in the Indian caste world. Is it not simply a difference in time scales that distinguishes the processes of change in the two systems? Recalling the Goatherds who, Marriott showed, had managed to move upward across a significant boundary in a generation, we can see a parallel in the rise of a department like Colorado from being unranked in the 1967 transaction analysis to a modestly respectable position, twenty-first, in 1974, because of the acceptability at a prestigious level that its Ph.D.'s had acquired in the interim.

We might ask whether this fluidity, which seems at some variance with the common sociological model of academe, is not perhaps peculiar to the discipline of geography, which we know to be peculiar in other ways. We have some evidence that sociology, for one, may have a tighter academic structure, and that its departments evince more rigid caste behavior. A recent article by G. R. Gross reports the following: of positions held in the twenty top departments of sociology (as rated in

the Cartter report) both before and since 1960, between 2 and 3 percent were occupied by Ph.D.'s either from foreign universities or from lower ranking departments.[35] The comparable figure in geography, using Roose and Andersen, is 15 percent. Most of these came from abroad, but 2.5 percent of the total came from inferior departments alone. The idiosyncratic character of geography as a discipline is also seen in the discrepancy between the discipline's ranking of departments and the aggregate rank of the corresponding universities, based on the rank of all departments in rated disciplines.[36] Might not this departure from the normal pattern among other disciplines also allow or encourage some deviation from the more caste-like behavior that may mark the ethos of departments in those disciplines?

The question arises as to which ranking procedure, survey or transaction, is "better." The ranks derived by the transaction method clearly have no more to do with the true "quality" of departments than do the ranks generated by the surveys of the American Council on Education. We are not inclined ourselves to endorse a sociologist's measure of quality that is hardly to be distinguished from one of notoriety, nor do we think that "quality" and "reputation among departments of good standing," which we <u>can</u> claim to have uncovered, are necessarily in close agreement. Indeed, if the Cartter report could be criticized as "a compendium of gossip," we must concede that the acts that constitute the basis of transaction ranking, namely, hiring decisions, are by no means uninfluenced by the "gossip," accurate or not, that is retained in the heads of departmental chairmen and selection committees. When we compare the 1974 transaction ranking with Roose and Andersen's 1969 survey, what we are matching is, on the one hand, the acting out, over a period of fif-

teen years, of somewhat localized and certainly changing opinion about the standing of departments, and on the other, a general opinion, although one weighted on the side of "the establishment," that was ascertained at a single point in time.

Which of these methods, we may then ask, is the more sensitive in monitoring changing opinion? Marriott, it will be recalled, thought that his transaction ranking might be running ahead of village consensus, but the transactions he observed spanned only a few months, compared to our fifteen years, and were virtually contemporary with his survey of opinion. Yet when our transaction and survey rankings are compared, the striking geographic pattern that emerges appears to suggest an answer (Figure 1).

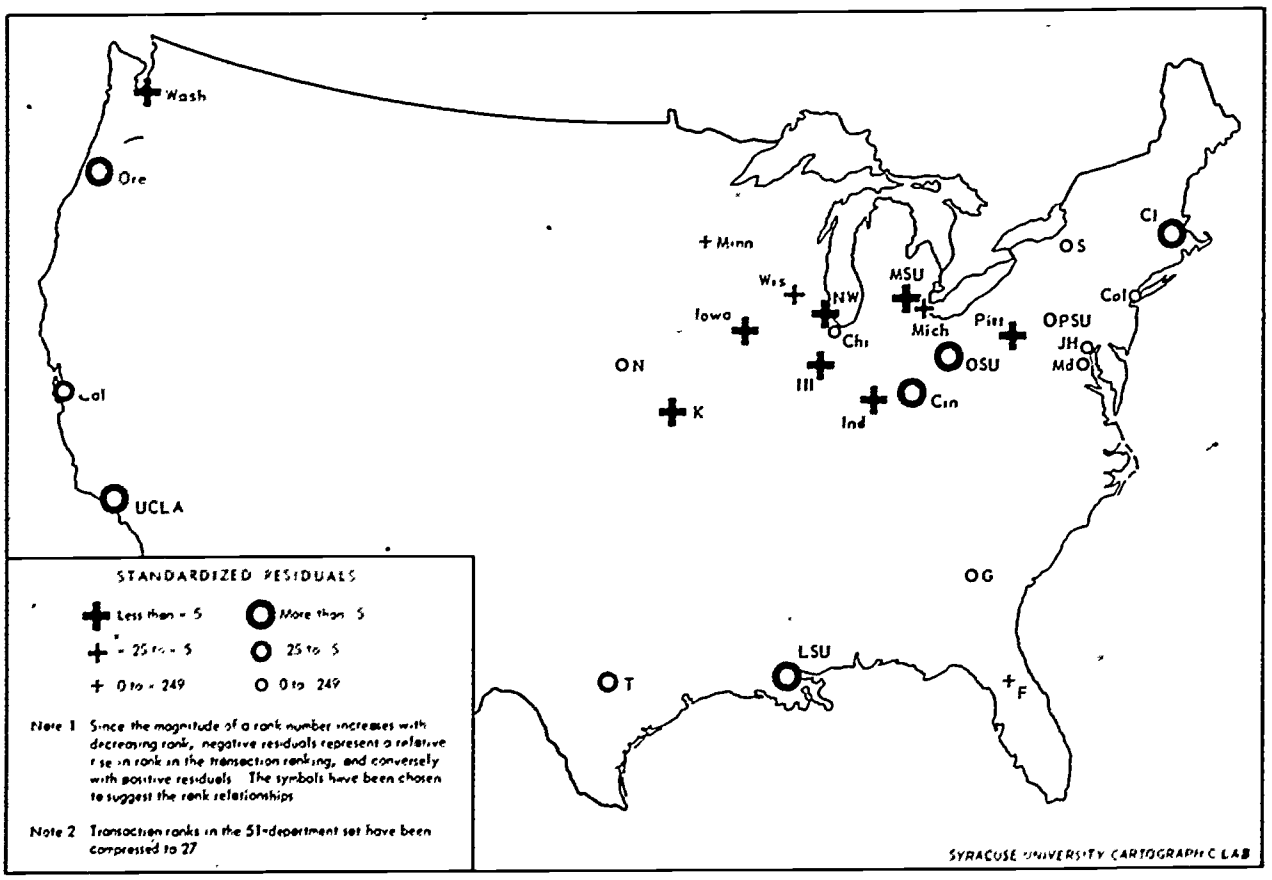

Fig. 1. Residuals of ranks based on 1960-1974 hiring transactions regressed on 1969 American Council on Education consensus ranks (Roose and Andersen).

The map presents the residuals of twenty-seven compressed departmental ranks derived from the 1974 transaction ranking regressed against the Roose and Andersen rating; positive signs denote that departments have moved, relative to total movement, to a higher rank in the transaction ranking, circles denote that departments have moved down. Strong areal clustering is undeniably present, and apart from one or two exceptions, the pattern can be read as a contrast between "core" and "periphery."[37] Two perhaps complementary interpretations may be entertained. One is that the establishment-weighted consensual ranking of 1969 was indeed running behind the informed opinion that was being acted upon in hiring transactions in the late 60's and 70's, so that departments involved in successful disciplinary innovations in the 60's were still being "underrated" to some extent in Roose and Andersen.[38] But set against this largely cultural explanation is what might be called a "spatial interactionist" one: physical proximity favors social connectedness; potential candidates at distant institutions, that therefore tend to be poorly connected, will be less successful than those better placed, ceterus paribus, in competing for positions.[39] This effect would have special importance in a "closed market," such as is no longer permitted: connections, after all, are at the heart of the closed market operation, and prestige is then a matter of who is connected to whom, which brings us round full circle to nineteenth-century Boston.

* * *

Our enquiry began in a casual conversation about the quality and reputation of a number of American geography departments. It has led to a demonstration that is of considerable theoretical interest: Marriott's notion that members in a hierarchy might be ranked by using

a transaction matrix has been successfully adapted to a new situation. In doing this we have perhaps also succeeded in holding a mirror up to the academic structure of American geography--a mirror that may then have something more to tell than the answer it gives, not without a certain Delphic ring, to that unacademic question often asked in academe: "Who is fairest of them all?"

APPENDIX

Hypothetical Application of the Transaction Ranking Algorithm

To illustrate the operation of the algorithm, let us simulate the hiring transactions of faculty with Ph.D.'s earned within a certain time period. Suppose that the set involved consists of ten Ph.D. granting departments.

The matrix (Table A) is compiled by entering Directory data by departments in the respective columns. Thus, the Directory information for Farwest U. (Column 1) shows that four full-time regular faculty with the rank of assistant professor or above received Ph.D.'s from one of the other nine departments in the period under consideration. Three received their Ph.D.'s from Farwest itself, and the fourth from Northcentral. Ivy also has four faculty who qualify, their Ph.D.'s having been received from Metropolitan, Mill City, Northcentral, and Tallcorn (Column 2). And so forth.

Ranking: First Stage

Transactions along the diagonal ("inbreeding") do not count, and therefore the cells along the diagonal may be deleted.

Reading along the rows, then, two departments (Midstate and Oldsouth) are seen to give no Ph.D.'s to any of the other nine departments in the set. They therefore share the lowest rank, Rank 9 (Table B). Their respective rows and columns, 4 and 9, can thus be deleted from the matrix.

Noah Webster (Row 7 in the matrix) gives only to departments in this lowest rank, and therefore is placed in the next rank above,

TABLE A. SIMULATED MATRIX OF PH.D. HIRING TRANSACTIONS FOR TEN DEPARTMENTS

Givers \ Takers	(1) FARWEST	(2) IVY	(3) METROPOLITAN	(4) MIDSTATE	(5) MIDWESTERN	(6) MILL CITY	(7) NOAH WEBSTER	(8) NORTHCENTRAL	(9) OLDSOUTH	(10) TALLCORN
(1) FARWEST	3			1				2	1	
(2) IVY					1					
(3) METROPOLITAN		1		1		1	1	1	1	
(4) MIDSTATE										
(5) MIDWESTERN			1		2	1		1		2
(6) MILL CITY		1	1	1		1	1	2	1	
(7) NOAH WEBSTER				1						
(8) NORTHCENTRAL	1	1		2	1	1			2	
(9) OLDSOUTH									1	
(10) TALLCORN		1		1						

Rank 8. Row 7 and Column 7 can thus be deleted.

Each of the remaining seven departments gives a Ph.D. to at least one other department among the seven. A line (⌒) is therefore drawn above Noah Webster in Table B to indicate this. Of the seven departments, three (Farwest, Ivy and Tallcorn) give to no more than one other among the seven, and these three therefore form the next group in rank. Note that the two Ph.D.'s that Farwest gives to Northcentral count only as a single interdepartmental trans-

TABLE B. TRANSACTION RANKING OF TEN DEPARTMENTS BASED ON SIMULATED MATRIX (TABLE A).

1.	MIDWESTERN
2.	NORTHCENTRAL
3.	METROPOLITAN; MILL CITY
5.	IVY
6.	FARWEST
7.	TALLCORN
8.	NOAH WEBSTER
9.	MIDSTATE; OLDSOUTH

action. In this three-member group, Tallcorn gives only to a department within the group, Ivy, and is therefore separated from the other two by a line (----------) as Rank 7. Ivy and Farwest occupy the next two ranks above but not in that order necessarily for the moment. Rows 1, 2, and 10 and the corresponding columns can now be deleted.

The four remaining departments each gives to at least two others among the four, and are therefore separated from the ranks below by another line (||||||||||||||||||). Metropolitan, Mill City, and Northcentral each gives to no more than two and thus form one group. Midwestern, which gives to all three of the others, is ranked above them and therefore first in this case; it is separated from them by a solid line (——————).

Second Stage

Of the group of three ranked below Midwestern, only Northcentral gives to first-ranked Midwestern, and is therefore ranked above the

others (Rank 2). Since Metropolitan and Mill City each gives to the other and also to Northcentral, they share the next rank (Rank 3). In the upward-directed transactions of the two-member group below, consisting of Farwest and Ivy, Farwest gives to Northcentral in Rank 2 and Ivy gives to Midwestern in Rank 1. Ivy is therefore allotted Rank 5 and Farwest Rank 6.

NOTES AND REFERENCES

1 John Collins Bossidy, toast offered at Holy Cross Alumni Dinner, Boston, 1910.

2 McKim Marriott, "Caste Ranking and Food Transactions: a Matrix Analysis," in Milton Singer and Bernard S. Cohn, eds., Structure and Change in Indian Society (Chicago: Aldine Publishing Company, 1968), pp. 133-171.

3 Marriott, op. cit., footnote 2, p. 145.

4 D. Shichor, "Prestige and Regional Mobility of New Ph.D.'s in Sociology," American Sociologist, 8:4 (November, 1973), 180-86.

5 Shichor, op. cit., footnote 4, p. 181.

6 Theodore Caplow and Reese J. McGee, The Academic Marketplace (New York: Basic Books, Inc., 1958).

7 Caplow and McGee, op. cit., footnote 6, p. 14.

8 L. Hargens, "Pattern of Mobility of New Ph.D.'s Among American Academic Institutions," Sociology of Education, 42 (1969), 18-37; D. H. Shamblin, "Prestige and the Sociology Establishment," American Sociologist, 5:2 (1970), 157-60.

9 Allan M. Cartter, An Assessment of Quality in Graduate Education, Washington, D. C.: American Council on Education, 1966); Kenneth D. Roose and Charles J. Andersen, A Rating of Graduate Programs (Washington, D. C.: American Council on Education, 1970).

10 Caplow and McGee, op. cit., footnote 6, p. 181, citing Logan Wilson, The Academic Man: Sociology of a Profession (London: Oxford University Press, 1942), p. 49.

11 Caplow and McGee, op. cit., footnote 6, p. 130.

12 Caplow and McGee, op. cit., footnote 6, p. 127.

13 Caplow and McGee, op. cit., footnote 6, p. 130.

14 Caplow and McGee, op. cit., footnote 6, p. 130.

15 See footnote 9 for full source citations. Each of these surveys presented two tables grouping departments, one by "rated quality of graduate faculty," the other "by rated effectiveness of doctoral program." Only the first table assigned specific ranks to a substantial proportion of the departments considered, and it is this one of the two ratings that is referred to here, as indeed it is conventionally, as "the ranking" provided in each report.

16 Roose and Andersen, op. cit., footnote 9, p. ix.

17 Of 128 respondents who rated geography departments in 1969, 56 percent were full professors; only 20 percent ranked as assistant professors, and one respondent was classified as "Instructor and Other"; Roose and Andersen, op. cit., footnote 9, p. 30. Nonetheless, the aggregate rating by junior scholars had a .99 correlation with that of all raters of geography departments, compared to a .98 correlation attained by the chairmen's aggregated rating; Roose and Andersen, op. cit., p. 34.

18 Caplow and McGee, op. cit., footnote 6, p. 37.

19 Peter Gould and Rodney White, Mental Maps (Harmondsworth, England: Pelican Books, 1974).

20 Peter Beaumont, "On the Origin and Dispersal of Professional Geographers," The Professional Geographer, 23:2 (1971), 154-57. The author confined this analysis to 20 of the 26 doctoral departments that are given some sort of rank in Roose and Andersen, in addition to Harvard, which was not ranked in the 1969 survey and is not included in this analysis. For convenience, a department that awards the Ph.D. will be called a "doctoral department" here.

21 Beaumont, op. cit., footnote 20, p. 157.

22 That departments ranked by number of surviving Ph.D.'s (Table 2, row 6) and by Ph.D.'s employed in doctoral departments (Table 2, row 5) do not exhibit an extremely close correlation is demonstrated by an r_s between the two variables of only .701 ($P < .001$), for 19 departments.

23 E. T. Lightfield, "Output and Recognition of Sociologists," American Sociologist, 6:2 (1971), 128-33.

24 L. S. Lewis, "On Subjective and Objective Ranking of Sociology Departments," American Sociologist, 3:2 (May 1968), 129-31. The passage cited is on p. 131.

25 The same choice of journals is made in Placido LaValle, Harold McConnell, and Robert G. Brown, "Certain Aspects of the Expansion of Quantitative Methodology in American Geography," Annals, Association of American Geographers, 57:2 (June 1967), 423-36.

26 James J. Parsons, ed., 50 Years of Berkeley Geography 1923-1973. Supplement to: The Itinerant Geographer. (Berkeley: Department of Geography, University of California, 1973).

27 A pattern made by three data-points alone is not likely to be entirely convincing.

28 One department awarded the D.A. in geography.

29 Caplow and McGee, op. cit., footnote 6, p. 41.

30 Shamblin, op. cit., footnote 8, p. 157.

31 Almost all the information needed to carry out this transaction ranking is provided in the Association Guide, 1974-75. Faculty are usually listed by rank and by place and date of academic birth, so to speak, that is, of acquisition of the Ph.D. When this information was not provided by a department, it was obtained from recent Association Directories. In general, it was either known or assumed that the Ph.D. was obtained from a department of geography. In a few cases, evidence seemed to suggest that the Ph.D. was obtained in another discipline, and absence of the faculty member concerned from the Association Directory was taken to confirm this.

32 The "hiring transaction" may actually telescope several academic moves, since it involves only the location in 1974-75 of a faculty member of a particular academic parentage and ignores any intermediate position that may have been held after the Ph.D. was awarded. This necessary abbreviation calls for the occasionally unrealistic assumption that the standing given an individual by his academic place of birth cannot be enhanced by subsequent events in his career or that such enhancement is automatically transmitted to the parent institution.

33 Ranking by this method in the 1974 transaction ranking, counting only Ph.D.'s awarded in the period 1960-74, yields the following order for the lowest category of doctoral departments (ranks 36 to 51): Arizona State; Northeastern Illinois; Kent State; Utah; Rutgers; Boston; Indiana State; Wisconsin, Milwaukee; Kentucky; Denver; California, Riverside; Arizona; Cincinnati; Oregon; Northern Colorado; California, Davis.

34 For example, of the assistant professors with American Ph.D.'s listed in the 1970-71 Association Guide as being in the twelve departments rated highest in Roose and Andersen, 43 percent were no longer in the same department four years later (according to the 1974-75 Association Guide); almost exactly the same turnover rate was found for assistant professors who lacked the Ph.D. at the earlier date.

35 G. R. Gross, "The Organization Set: a Study of Sociology Departments," American Sociologist, 5:1 (1970), 25-29.

36 At least seven of the twelve top-ranked geography departments in Roose and Andersen, and five of the twelve in the 1974 transaction ranking, are at universities that are not generally considered to be of the first rank.

37 There are no doubt some who will prefer to see this as more truly a contrast between "the heartland" and "the frontier."

38 See LaValle, et al., op. cit., footnote 25. Figure 2a, p. 427, "Ph.D. Granting Geography Departments Offering Quantitative Methods Courses, 1961" is of special interest: six of the eight departments that gained most in relative rank through transaction ranking are among the ten departments for which we have comparable data (one, Southern Illinois, is excluded) that are shown as offering at least one quantitative methods course by 1961.

39 LaValle, et al., op. cit., footnote 25, invoke proximity and diffusion in suggesting an explanation of the clustered patterns they find; pp. 423-36.

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