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Reputational Ratings of Doctoral Programs

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Undoubtedly the best-known efforts to assess the quality of doctoral programs in recent years have been the collection of prestige or reputational ratings by the American Council on Education (ACE) in 1964 (*1*) and 1969 (*2*). In those surveys the ACE obtained from samples of university faculty members ratings of the quality of graduate faculties in their own fields at other U.S. institutions. In addition to serving their primary purpose in the graduate education community, these surveys produced data that have been used to gain a better understanding of the meaning of reputational ratings, particularly how they are related to other characteristics of doctoral programs. As a result, we have learned that the reputational ratings—often called peer ratings—tend to be fairly highly related to program size (*3, 4*) and various indices of research productivity (*4, 5*), though the magnitude of these relationships varies considerably across disciplines. In particular, it appears that the ratings are more highly correlated with various traditional measurements (for example, number of Ph.D.'s produced, levels of funding) in the biological and physical sciences than in the social sciences or the humanities. One plausible explanation for this is that in the biological and physical sciences there tends to be greater consensus about accepted knowledge and standards (*6*).

There has been a good deal of concern about the use of reputational ratings in making judgments about program quality. The chief objections have been (i) that the ratings are unfair to doctoral programs which do not place primary emphasis on doing research and preparing their students to do research; (ii) that there is a strong halo effect, the ratings of a department being unduly affected by the prestige or reputation of the university of which it is a part; (iii) that there is a time lag, that is, the ratings are usually based on impressions of what a department used to be like, not on knowledge of its current strengths and weaknesses; and (iv) that the rating information seldom makes for a better understanding of a specific program's strengths and weaknesses and therefore is not useful for program improvement.

It was largely in response to some of these dissatisfactions with reputational ratings that the Council of Graduate Schools (CGS) and Educational Testing Service (ETS), in 1975, conducted a multidimensional study of quality in doctoral programs in three disciplines (*7*). This project was designed primarily as a study of the feasibility of employing information about a wide variety of characteristics in making judgments about the quality of programs. An important feature of the project was the idea that a single ranking is too simplistic, that it does not allow for the possibility that doctoral programs relatively strong in one respect (such as publication rates of the faculty) might be less strong in another (such as the quality of their teaching). A major procedural characteristic was that most of the information collected from respondents had to do with their own departments; for example, faculty members reported their own publication rates or journal-refereeing activities, students their opinions about the quality of teaching they received, alumni their dissertation experiences, and so on. These reports were obtained from students, faculty, and alumni by means of questionnaires. A general conclusion of the study was that such reports can be obtained without great difficulty, are usually reliable, and augment the description of characteristics relevant to appraisals of doctoral program quality.

Though they were not a crucial element in the CGS/ETS study, peer ratings were also obtained from the faculty respondents, each of whom was asked to rate the quality of the faculties of the other departments in his or her discipline which participated in the study. This aspect of the CGS/ETS study paralleled the two earlier ACE surveys, and it is this aspect of the CGS/ETS study that is the focus of this article.

The primary reason for obtaining the peer ratings was to examine their relationship to the broader array of program characteristics reported in the main part of the survey, a line of inquiry that was not possible with either of the earlier ACE studies. But interest in peer ratings per se remains strong. The Conference Board of the Associated Research Councils convened a planning conference, in the fall of 1976, to investigate issues involved in conducting another peer rating survey (*8*). In spite of ACE's announced intention of refraining from further efforts of this kind, it appears likely that some agency concerned with graduate education in the United States will conduct some kind of reputational rating survey in the not too distant future. Our interest in an improved understanding of the nature and meaning of peer ratings therefore goes beyond pure intellectual curiosity.

This article draws on the data gathered in the CGS/ETS study (*7*) and the two earlier ACE studies (*1, 2*) to address

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three questions pertaining to peer ratings of doctoral program quality: (i) their stability; (ii) the feasibility and usefulness of subdiscipline ratings; and (iii) the relation of the ratings to program characteristics.

Procedure

The CGS/ETS data were collected in the fall of 1975. The disciplines of chemistry, history, and psychology were selected for study because they represent different major areas of academic endeavor and their professional associations showed strong interest in the project. Twenty-five universities with doctoral programs in each of these three disciplines were asked to cooperate. The institutions were so selected as to constitute a heterogeneous sample with respect to such characteristics as size, location, and 1969 ratings. One chemistry and one psychology department were not able to participate. The final sample therefore consisted of 25 departments of history, 24 of chemistry, and 24 of psychology (Table 1).

Questionnaires were sent to the department chairpersons, with the request that they be completed by faculty members with graduate-level responsibilities. Some chairpersons distributed questionnaires to all such faculty members, others to only a sample of them. The response rates, based on chairpersons' reports of the number of questionnaires they distributed, averaged 80 percent in chemistry, 78 percent in history, and 72 percent in psychology.

Note that the peer ratings in this study were made by many respondents (Table 1) from each of the 25 universities and that they were rating the doctoral programs in their disciplines at only those same 25 institutions. In contrast, the data in both ACE studies were collected from a much smaller number of faculty members at each of a much larger number of universities, who rated almost every Ph.D.-granting program in their disciplines.

Each of the 25 universities participating in the survey was listed alphabetically in the questionnaire and, as in the two ACE surveys, respondents were asked to rate two separate aspects of the programs at the listed institutions: the quality of the faculty and the attractiveness of the doctoral program. The latter rating was intended to include such departmental features as accessibility of faculty to students, the nature of the curriculum, the quality of the students, and so on. As was also the case in both ACE studies,

Table 1. Institutions included in the CGS/ETS survey of doctoral programs in chemistry, history, and psychology in 1975 and number of faculty respondents in each department.

Institution	Number of faculty respondents		
	Chemistry	History	Psychology
Boston College	12	10	15
California, Berkeley	38	30	16
California, Davis	21	27	17
California, Los Angeles	26	38	41
Colorado	24	23	34
Emory	11	16	18
Florida State	26	25	39
Indiana	21	28	20
Iowa	18	22	26
Kansas	20	30	32
Louisiana State	30	19	18
Maryland	24	29	32
Michigan	18	29	61
Minnesota	22	36	59
Missouri, Columbia	16	18	17
New York University	17	16	18
Northwestern	26	18	15
Oklahoma State	17	14	9
Pennsylvania		15	16
Princeton	20	37	
Stanford	16	24	22
Toledo	8	10	11
Utah	24	19	21
West Virginia	20	18	19
Wisconsin, Madison	36	33	22
Total	511	584	598
	*Response rate (%)**		
Average	80	78	72
Median	85	71	74
Minimum	46	48	38

*Number of questionnaires completed/number distributed to faculty members by department chairperson (see text).

Table 2. Comparison of ranking of faculty quality in doctoral programs in 1964 (A), 1969 (B), and 1975 (C). Data for 1964 and 1969 are from ACE surveys, for 1975 from the CGS/ETS survey. Only departments rated in all three surveys are included.

Chemistry				History				Psychology			
Institution*	A	B	C	Institution*	A	B	C	Institution*	A	B	C
P	1	1	1	P	1	1	1	U	1	1	1
U	2	2	2	T	2	3	5†	M	2.5	2	2
T	3	4	3	Q	3	2	2	P	2.5	3	3
W	4	3	4	U	4	4	3	G	4.5	6	4
Q	5	5	5	M	5	5	4	T	4.5	5	5
F	6.5	6	6	W	6	6	6	N	6	11	12†
G	6.5	7	9	F	7.5	7	9	W	8	7	6
M	8	9	7	D	7.5	8.5	7	E	8	9	10
E	9	8	8	E	9.5	8.5	10	D	8	4	7†
V	10	10	13†	G	9.5	10	8	F	10	10	11
D	11	12.5	10	N	11	11	11	Q	11	12	8†
X	12.5	11	12	K	12	12	12	K	12	13	13
B	12.5	12.5	15	L	13	13	15	X	13	8	9†
N	14.5	17	16	C	14	15	13	B	14.5	15	14
Y	14.5	14	11†	X	15.5	16.5	17	C	14.5	17	17
I	16	15	14	B	15.5	14	14	A	16	19	15†
O	17.5	16	18	O	17	16.5	18	V	17	14	16†
A	17.5	18	17	A	18	18	16	L	18	18	18
K	19	19	19	Y	19	19	19	Y	19	16	19†
L	20	20	21	H	20	20	20	O	20	20	20
C	21	21	20					J	21	21	21
J	22	22	22								
H	23	23	23								
			Spearman rank-order correlation								
$\rho_{AB} = .99$			$\rho_{AC} = .98$	$\rho_{AB} = .99$			$\rho_{AC} = .98$	$\rho_{AB} = .93$			$\rho_{AC} = .95$
$\rho_{BC} = .99$				$\rho_{BC} = .99$				$\rho_{bc} = .99$			

*Data in the CGS/ETS survey were obtained with assurances of institutional anonymity. Therefore identification letters were assigned randomly to universities in the study. †Change of three or more places between any two rankings.

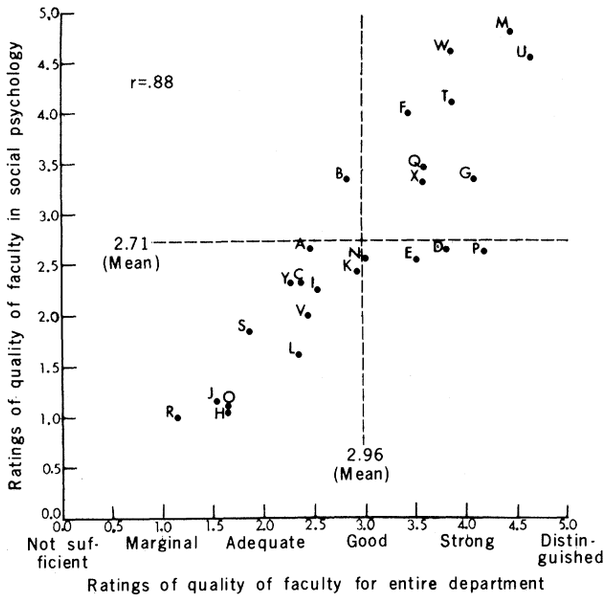

Fig. 1. Mean ratings of faculties in the subspecialty social psychology plotted against mean ratings of the psychology departments to which they belong.

however, the data obtained from the two questions were nearly identical, the product-moment correlation between ratings of faculty quality and ratings of departmental attractiveness being .99 for all three disciplines. It would therefore appear that either the raters were unable to distinguish between the quality of a program's faculty and its attractiveness for graduate students or, more likely, that they saw the conceptual distinction but considered faculty quality to be the most important factor in a program's attractiveness for students. For this reason, we have chosen to use the faculty quality ratings in our analyses, though clearly either set of ratings could be used with virtually identical results.

Faculty quality was rated on a scale ranging from "distinguished" to "not sufficient for doctoral training." There was also a space for indicating that the respondent did not have enough information to provide a rating. Thus the scale was identical to that used in both ACE surveys. As was also the case with both ACE studies, "not enough information" responses were not included in calculating departmental mean ratings. The frequency of "not enough information" responses was highly correlated with the mean ratings of the departments; they were rare for departments rated high but fairly common for departments of less prestige (*7*).

Stability of the Ratings

The reputational ratings data obtained in the 1969 survey were strikingly similar to those from the 1964 survey in practically all the 29 fields that were included in both studies (*2*). The correlation between ratings exceeded .90 in 26 cases and was below .80 in only one (.79 for pharmacology).

The ranking of departments which were included in all three studies (Table 2) is also very similar (*9*). In chemistry, where 1964, 1969, and 1975 rating data were available for 23 departments, the correlation between 1964 and 1975 rankings was .98. One department's 1975 rating was three ranks higher than in 1969 and another's three ranks lower. All others were either identical or within one or two ranks over the 11-year period. In history, where 1964, 1969, and 1975 data were available for 20 departments, the stability of the rankings was even greater. One department slipped three rank positions; no other history department ranking changed by more than two positions during the 11-year period.

Only in psychology was there some sign of significant changes in the rankings, and even there the overall picture was one of general stability, as evidenced by rank-order correlations of .93, .95, and .99. Department N, ranked sixth in the 1964 ratings, dropped to eleventh in 1969 and to twelfth in the 1975 survey. This was the largest single change for any department in any of the three disciplines.

The fact that the ETS rankings are so similar to those obtained in the two ACE surveys is even more notable when one considers the previously described differences in the nature of the raters. There can be little doubt that there is substantial agreement among different raters, and at different points in time, about the quality of the faculty in various doctoral programs in a field. This does not mean that upward or downward movement along the continuum of perceived quality is not possible, for as indicated in Table 2, the positions of a number of departments, particularly in psychology, rose or fell by three or more ranks.

Table 3. Correlations of ratings of subspecialties with ratings of total programs, CGS/ETS survey 1975. All ratings pertain to quality of faculty.

Discipline and subspecialty	Range in number of raters*	Pearson *r*
Chemistry		
Analytical	15–33	.40
Biochemical	11–39	.94
Inorganic	35–63	.94
Organic	80–121	.98
Physical	70–151	.98
History:		
Ancient	8–23	.94
Medieval	15–35	.91
Modern	52–131	.99
American	75–169	.98
Third World	24–68	.95
Psychology		
Educational	1–4	.79
Measurement	1–6	.91
Personality	6–19	.88
Developmental	9–40	.85
Experimental	64–168	.98
Organizational	7–18	.54
Clinical	26–97	.78
Social	21–72	.88

*Refers to the number of ratings supplied by respondents for the subspecialty faculty of a given institution. Thus the analytical chemistry faculty of one institution was rated by 33 respondents, of another by 15.

Subspecialty Ratings

The ACE surveys had not obtained reputational ratings of the faculty in discipline subspecialties. In 1975 each faculty respondent was asked to indicate not only his or her discipline but also the one subspecialty with which he or she identified most closely, and to rate the quality of the faculty in that subspecialty at all the universities in the study, according to the same format as that used to rate the faculty of whole departments. The number of subspecialties varied by discipline (Table 3).

In history all subspecialty faculties received about the same ratings as the total program faculties; all intercorrelations exceed .90. In the eyes of historians, then, subspecialty faculties that are of high quality are virtually always found in departments with strong faculties over-

all. In chemistry departments, a close relation between subspecialty faculty ratings is also the usual case, but there is one glaring exception—analytical chemistry. In psychology the correlations are more variable but still generally high; the lowest is for organizational psychology.

Taken together the data in Table 3 do not make a very good case for attempting to improve the precision of reputational ratings of total programs by including ratings of subspecialties. The correlations are generally so high that separate ratings would appear to be unnecessary. Also, there is a serious logistical difficulty in subspecialty ratings that makes the procedure questionable. Certain subspecialties received ratings by only a very small number of respondents (Table 3). For example, the educational and measurement subspecialties of some psychology departments were given only one rating. Sometimes this occurred because there were not many faculty members who identified themselves with the subspecialty, sometimes because those in the same subspecialty felt they did not know enough about subspecialty faculties at some of the other universities. In addition, it would be hard to estimate the effect of departmental halo on subspecialty ratings.

This should not be taken to mean that information about the reputation of subspecialties is not important or not worth pursuing. Social psychology provides an interesting case. The correlation of .88 (Table 3) between social psychology ratings and psychology department ratings might suggest that very little is to be learned from the subspecialty ratings that is not evident from the total department ratings. The scattergram (Fig. 1) depicting this relation suggests otherwise. Department P, for example, has an overall faculty rating of approximately 4.2 (slightly above "strong") and is ranked third among the 24 psychology departments in this regard, but the rating of its social psychology faculty is approximately 2.6 (between "adequate" and "good"), a rating that is below the mean of the 24 social psychology faculties rated.

The point of this is to suggest that, in some fields at least, disciplinary subspecialties are important and may need to be considered when making judgments about the quality of individual programs, but that attempts to include subspecialty ratings in national surveys will probably not result in data that are sufficiently reliable or sufficiently different from departmental ratings, in most cases, to be worth the trouble.

Relation of Ratings to Other Program Characteristics

How peer ratings of faculty quality correlate with some other characteristics of doctoral programs is presented in Table 4. These data suggest that the programs whose faculties receive the higher peer ratings might be described as follows: They tend to be large, to pay their full professors the higher salaries, to have faculty members who received their Ph.D.'s from other high-rated departments, to be successful in bringing in research money from nonuniversity sources (at least in chemistry and psychology), to make more contributions to the scientific and other scholarly literature (especially in chemistry), to have better physical and financial resources available, to emphasize the training of researchers (rather than, for example, of future teachers or practitioners), to be heavily involved in such other research activities as journal refereeing and editorships, and to produce graduates who tend to go on to careers in research-oriented universities and, in chemistry and psychology, who also publish more than the average in their early postdoctorate years.

Some of these relationships confirm other research findings, particularly those pertaining to size, research productivity, salaries, and adequacy of physical resources. Others have not been reported on before, such as those pertaining to perceived emphasis on preparing researchers and to the performance of alumni. All the relationships discussed so far, however, confirm the popular notion that departments with high peer ratings are ones which value and reward research rather than teaching.

Other doctoral program characteristics are not closely related to peer ratings. For example, peer ratings appear to be unaffected by graduate student completion rates, student perceptions of the quality of teaching or degree of faculty concern for students, or the degree of departmental effort toward the career development of junior members of the faculty (with the possible exception of chemistry). Such data are useful in draw-

Table 4. Correlations of 1975 reputational ratings with characteristics of doctoral programs as reported in the 1975 survey by their own faculty members, students, and alumni.

Characteristic	Pearson *r*		
	Chemistry	History	Psychology
Size: number of Ph.D.'s awarded annually during recent 3-year period	.85	.72	.69
Mean salary of full professors	.78	.54	.48
Percentage of faculty with Ph.D.'s from departments rated 3.0 or higher in 1969 ACE survey	.68	.74	.80
Percentage of faculty with research grants from nonuniversity sources	.64	.46	.84
Research dollars per faculty member from nonuniversity sources	.77	−.07	.81
Number of journal articles and book reviews per faculty member published in last 3 years	.90	.50	.47
Adequacy of university's overall physical and financial resources (faculty rating)	.61	.67	.61
Degree of departmental emphasis on preparing researchers (faculty rating)	.87	.87	.75
Faculty research activity (journal editorships, research awards, and so on)	.73	.78	.86
Percentage of recent alumni who hold academic appointments at Ph.D.-granting universities	.79	.70	.51
Mean number of publications by recent alumni since earning degree	.37	−.06	.37
Faculty-student ratio	−.79	−.73	−.37
Student degree-completion rate	−.14	.11	.16
Degree of faculty concern for students (reported by students)	−.15	−.39	.08
Quality of faculty-graduate student relations (reported by faculty)	.21	−.09	−.02
Quality of teaching (student ratings)	.09	.00	.52
Program experience as good preparation for career (alumni ratings)	.58	−.05	.39
Satisfaction with dissertation experience (reported by alumni)	.14	.28	.57
Degree of departmental effort toward career development of junior faculty (reported by faculty)	.46	.23	−.08

ing our attention back to what the ratings are—peers' judgments of the quality of the department's faculty based largely on scholarly publications. They say little or nothing about the quality of instruction, the degree of civility or humaneness, the degree to which scholarly excitement is nurtured by student-faculty interactions, and so on. In brief, the peer ratings are not ratings of overall doctoral program quality but, rather, ratings of the faculty employed in those programs, reflecting primarily their research records. No claim has ever been made that the ratings are more than this, but they have often been interpreted as being more by those who used them.

Summary

Peer ratings of the quality of doctoral program faculties were obtained in a 1975 national survey of chemistry, history, and psychology programs. The ratings were then compared to those obtained 6 and 11 years earlier by the American Council on Education. In general, the rankings obtained from the ratings proved to be highly stable over the 11-year period, particularly in chemistry and history.

Some ratings were also obtained for subspecialties within the three disciplines. Though it is clear that variations in quality among subspecialty faculties do exist and are important for individual program evaluations, it is unlikely that such subspecialty ratings would be feasible or useful in national surveys of the reputations of doctoral programs.

The ratings were found to be highly related to a number of research-oriented variables of departments (such as size, productivity, percentage of alumni holding academic positions at Ph.D.-granting universities), but unrelated or very weakly related to such features as the student-reported quality of teaching and degree of faculty concern for students, or faculty-reported degree of departmental effort toward the career development of junior members of the faculty.

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9. The mean ratings in 1965 and 1969 of the departments that participated in the 1975 study were converted into rankings. We thank the American Council on Education for providing us with the necessary data.

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NEWS AND COMMENT

Scientists Dispute Book's Claim That Human Clone Has Been Born

On Friday, 3 March, the New York *Post* proclaimed the news in one and a half inch type across the front page: "BABY BORN WITHOUT A MOTHER, HE'S THE FIRST HUMAN CLONE." Thus the *Post* reported the forthcoming publication of a book by an author named David Rorvik who claims that a baby boy born some 14 months ago is a clone—an exact genetic copy—of his millionaire "father." It was a sensational birth announcement.

Although the *Post*'s page one story was not the first news account of the controversial book that many scientists already have denounced as a probable hoax, it did catapult *In His Image, The Cloning of a Man* to national attention. David Rorvik and the alleged baby clone were reported coast to coast on the Friday evening news, though neither author nor clone was available to cameramen.

The next morning, the story appeared in the *New York Times*, a.k.a. the "old gray lady," where it was discreetly placed on page 19 under a gray headline that said, "Scientists Skeptical About Book On Baby Created in Laboratory." By now, it has been in nearly every paper in the country.

And always the question is the same: Could it possibly be true? More than a dozen knowledgeable researchers queried by *Science* say "No," although most agree that human cloning is theoretically possible. Rorvik, in hiding but speaking through his publisher— J. B. Lippincott Company—says, in effect, that he won't tell and asks us just to take his word for it. In a formal statement Lippincott acknowledges that corroborating evidence of Rorvik's astonishing claim will be withheld indefinitely. "To protect the child from harmful publicity and other participants from certain controversy, Rorvik refuses to divulge names or places even to his publisher," it said in the statement that leaves the company just a bit shy of fully supporting its man. "David Rorvik assures Lippincott that it [the story] is true. Lippincott does not know."

In His Image was originally scheduled for publication in June, but Lippincott will start the presses early. The book will be out on the 31st of March, at which time Rorvik is expected to emerge from seclusion to begin a "national author tour."

From what *Science* has been able to learn, the gist of *In His Image* is this: Sometime in 1973, Rorvik was approached by a West Coast millionaire in his sixties who wanted to leave posterity a clone of himself. The man was prepared to spend millions. He asked Rorvik to find the scientists who would be willing to give it a try. ("My decision to recruit the medical talent required to clone a human being came after a long period of soul-searching," Rorvik informed the public in a recent statement released through his publisher.*) The alleged cloning took place somewhere outside of the United States in a land "beyond Hawaii," where, according to persons who have seen the manuscript, all experimentation leading up to the successful clone was done with human cells. In order to accomplish its mission, the cloning team would need three things: a large supply of human ova, donor cells from the millionaire to serve as the vehicle of cloning, and a surrogate mother ready to carry the clone to term. It is said that ova were collected from women who, in the belief that they were helping infertile women bear children, submitted to a minor surgical procedure

*Thus far, Rorvik has refused to speak to the press but on 7 March he issued a statement through Lippincott, his publisher. Quotes attributed to Rorvik are taken from that statement.

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