ABSTRACT

          Despite 30 years of affirmative action, the full-time tenured
professoriate, especially at research universities, is composed almost
entirely of white males. In fact, 91% of full professors at research
universities are white, and 75% are male. Of part-time faculty, 85% are
white, and 64% are male. Illuminating these data makes some policymakers,
administrators, and faculty defensive, which might explain, in part, why data
play a relatively limited role in decision-making about faculty employment
policies. Perhaps anecdote and rhetoric about tenure and faculty abound
because the data are not defensible. This paper reveals employment data, from
many sources, about faculty race and gender, and examines what data providers
and data users might do differently in order to increase the import of such
information in policymaking. (Contains 12 tables and 30 references.) (SLD)

What Do We Have To Hide?
Data and Diversity

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Abstract

Despite 30 years of affirmative action, the full-time tenured professoriate, especially at

research universities, is comprised almost entirely of white males. Illuminating these data

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part, why data play a relatively limited role in decision-making about faculty employment

policies. Perhaps anecdote and rhetoric about tenure and faculty abound because the data

are not defensible. This paper reveals the employment data about faculty race and gender,

and examines what data providers and data users might do differently in order to increase

the import of such information in policymaking.

Data about faculty are available to us from the Integrated Postsecondary Education Data System (IPEDS) and the National Center for Education Statistics (NCES) by the ream and gigabit. These statistical compilations provide us with numbers and percentages of faculty with respect to race, gender, highest degree, tenure status, and a wide variety of other measures. Various scholars (Baldwin and Chronister, 2001; Finkelstein, Seal, and Schuster, 1998; Fairweather, 1996) then distill these data sets into useful volumes. Michael Middaugh (2001) at the University of Delaware sifted through and made sense of multitudes of data about faculty productivity and instructional costs. The problem is not a lack of data—the problem is the lack of data *use* in decision- and policymaking on campuses.

While two fundamental principles of the academy are to ground arguments in data and to draw conclusions from systematic analysis, ironically, both the literature on the use of data in organizations, as well as actual practice in academe, suggest that policy discussions and decisions only sometimes honor these core tenets. When faculty employment, work life, or productivity is under consideration, anecdotes, impressions, and dogmatic beliefs are far more likely than data to serve as catalysts and rationales for policy deliberation and formulation. When race and gender are added into the mix, the stakes are raised and the situation intensifies.

The data about the participation of women and minorities on the faculties of U.S. four-year institutions over the past century is revealing, startling, and show that little progress has been made. The academy remains a white male milieu, despite 30 years of affirmative action policies and practices.

- 94% of full professors in science and engineering are white; 90% are male.

- 91% of the full professors at research universities are white; 75% are male.

- 85% of the full-time faculty are white; 64% are male.

- 5% of the full professors are African American, Hispanic, or Native American.

- The gap between the percentage of tenured men and the percentage of tenured women has not changed in 30 years.

Women in the Academy

Degrees. In 2000, women earned over half of the bachelor's (56%) and master's degrees (57%) and 44% of the doctoral degrees awarded nationwide. The percentage of women with advanced degrees has increased steadily for 30 years (Table 1). The trouble for women is not the lack of numbers in the pipeline; the problem is their progress in the academy, typically, is slow and their standing is low.

Table 1. Total Degrees Conferred and Percent to Women

Total Degrees (% to Women)	1900	Mid-1970s	2000
Baccalaureate	27,410 (19%)	917,900 (46%)	1,185,000 (56%)
Master's	1,583 (19%)	311,771 (46%)	430,164 (57%)
Doctoral	382 (6%)	34,064 (23%)	41,368 (44%)

Sources: U.S. Department of Education (1993, 2002).

Female faculty representation. While women have experienced significant growth in numbers within the academy, they accounted for just over one third (36%) of the full-time and nearly half (45%) of the part-time faculty, and only one quarter of the full-time faculty at research universities in 1998. (See Table 2).

Rank and institutional type. Women are more likely than men to hold lower academic ranks and work at less prestigious institutions. Even though the proportion of men decreased across all ranks from 1980 to 2000 (Table 3), men still occupy the majority of positions at senior ranks.

The disparities between men and women become more pronounced as one ascends the academic career ladder. And although the percentage of female full professors overall has

Table 2. Percent Faculty, by Gender, 1972 and 1998

| | 1972 | | 1998 | |
	Women	Men	Women	Men
Total Faculty	21%	79%	41%	59%
Full-Time Faculty	25%	75%	36%	64%
Part-Time Faculty	34%	66%	45%	55%
Full-Time Faculty at Research Universities	18%	82%	25%	75%
Tenured (among full-time faculty)	38%	58%	39%	59%
Full Professors	10%	90%	24%	76%
Full Professors in Science & Engineering	2.5%	97.5%	10%	90%

Sources: Chamberlain (1988); Chronicle of Higher Education (2001); U.S. Department of Education (1998).

Table 3. Faculty, By Gender and Rank, 1980 and 1998

| | Men | | Women | |
	1980	1998	1980	1998
Professor	90%	76%	10%	24%
Associate Professor	79%	61%	21%	39%
Assistant Professor	66%	55%	34%	45%
Instructor	57%	41%	48%	59%
Lecturer	57%	45%	43%	55%

Source: Babco (2000).

increased substantially, women comprise only 31% of the faculty at doctoral institutions, compared with 47% at two-year colleges. (Table 4)

In fact, the more prestigious the institution, the higher proportion of male faculty overall, and, of course, the reverse is true for women. The gap between males and females by rank is widest at the most esteemed institutions. Nearly one half of male faculty members at doctoral institutions are full professors—*five times* the representation of women; at two-

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Table 4. Percentage of Faculty, By Rank, Gender, and Institutional Type, 2001-2002

	Doctoral-Level		Comprehensive		Baccalaureate		Two-Year Colleges	
	Men	Women	Men	Women	Men	Women	Men	Women
Professor	33.1	6.7	24.1	7.9	22.2	7.8	16.2	11.7
Associate	17.8	8.9	16.6	10.5	16.6	11.8	13.6	12.7
Assistant	13.3	9.8	15.5	14.5	16.7	15.9	12.5	12.5
Instructor	1.9	2.6	2.7	4.1	2.7	3.8	8.1	8.4
Lecturer	2.3	2.6	1.4	1.9	0.8	1.0	1.0	1.2
All	68.9	31.1	60.7	39.3	59.5	40.5	52.7	47.3

Source: AAUP (2002).

year colleges, one third of male faculty members are professors, while one quarter of women faculty members have attained that rank.

Tenure status. Nor have women reached parity with men in terms of tenure. As if set in concrete, the proportion of women with tenure lags the rate for men by 20-27 percentage points across all types of institutions, with the greatest imbalance at universities (Table 5).

A study by the Commission on Professionals in Science and Technology revealed that among those in academe with doctorates in science and engineering, only one quarter of women had been awarded tenure, compared to one half of men (Table 6). The share of faculty positions in science and engineering with tenure has been quite constant for both men (80%) and women (56% to 60%) between 1975 and 1995. Four times as many men as women with science and engineering doctorates held full-time faculty positions. Women were less likely than men to be employed full-time: 75% of men v. 60% of women. Across all academic disciplines, women are more likely than men to be employed part-time (45% v. 34%); in fact, women constituted a larger portion of the part-time than the full-time faculty in 1999.

Table 5. Tenure Status, By Gender and Institutional Type, 1980 and 1995

	1980		1995	
	Men	Women	Men	Women
All institutions	70.0	49.7	71.3	50.3
Four-Year	68.3	44.0	70.2	45.3
University	70.0	41.0	74.0	45.7
Other Four-Year	67.0	45.5	67.5	45.1
Two-Year	78.8	66.6	78.2	67.1
Public institutions	72.8	54.0	74.0	53.6
Four-Year	71.1	47.5	73.0	47.4
University	71.3	42.8	76.0	47.6
Other Four-Year	70.9	50.2	70.6	47.3
Two-Year	79.3	67.5	78.2	67.3
Private institutions	62.2	37.2	64.8	41.7
Four-Year	62.2	37.2	64.6	41.4
University	66.3	36.5	68.9	41.3
Other Four-Year	59.8	37.4	62.2	41.5
Two-Year	57.3	39.5	75.8	57.3

Source: Babco (2000)

In the humanities, in 1995 women made up one third of the faculty, with 49% tenured versus 71% for men; in the social sciences, women constituted 29% of the faculty, of whom just one fifth had tenure. Eighteen percent of women, versus 10% of men, are employed at institutions without tenure, and 37% of women, versus 24% of men, are employed in non-tenure-track positions (Babco, 2000).

Table 6. Science and Engineering Doctorates, 1993

	Women	Men
Number holding full-time faculty positions	41,800	169,200
Number holding part-time faculty positions	28,000	55,300
Likelihood of being employed full-time	60%	75%
Likelihood of being employed part-time	40%	25%
Percent awarded tenure	26%	51%
Percent employed on one-term contracts (non-tenure-track)	54%	34%
Percent employed by public, two-year colleges	37%	25%
Percent employed by universities and four-year colleges	29%	43%
Biological sciences	26%	62%
Chemistry	18%	59%
Environmental sciences	32%	60%
Physical sciences	25%	49%

Source: NSF (2000)

Salary. At all ranks—across all disciplines and institutional types—female faculty members earn lower salaries than men do (Table 7). Furthermore, the inequities are progressive: that is, the disparity widens from assistant to full professor. "Women faculty averaged 83% of men's salaries ($45,524 vs. $54,990). The range: 77% in public universities to 92% in public two-year institutions" (Clery and Lee, 2002, p. 13).

Table 7. Average Salary by Gender, Rank, and Institutional Type, 2001-02

	Doctoral		Comprehensive		Baccalaureate		Two-Yr Colleges	
	Men	Women	Men	Women	Men	Women	Men	Women
Professor	96,249	87,530	74,423	70,709	67,887	64,459	62,553	58,376
Associate	66,360	62,150	58,959	56,252	52,270	50,418	48,875	46,991
Assistant	57,820	52,114	48,325	46,511	43,486	42,290	43,321	42,015
Instructor	39,018	37,191	37,614	35,981	35,734	34,503	35,901	34,959
Lecturer	46,944	41,468	38,901	36,422	39,898	37,642	41,661	41,709

Source: AAUP (2002)

Faculty of Color in the Academy

In the case of faculty members of color, the academy does have a stubborn, supply-side problem. On the other hand, minorities in professorial careers, like women, are concentrated in lower-status positions.

Degrees. Minorities earned 16% of the master's degrees and 18.6% of the doctorates awarded in the United States in 2000. Whites accounted for 79.3% of all earned doctorates in 2000, followed by Asians at 7.8%; other minority groups combined accounted for 10.8% (Table 8).

Table 8. Percentage of Doctoral Degrees, By Race, 2000

	All	Business	Education	Engineering	Humanities	Life Sciences	Physical Sciences	Prof'l Fields	Social Sciences
Native American	0.6	0.6	0.9	0.3	0.4	0.4	0.5	0.2	0.7
Asian American	7.8	9.5	3.1	17.5	4.3	11.4	10.5	5.7	5.4
African American	5.9	5.9	12.4	3.2	3.7	3.7	2.8	9.5	6.5
Hispanic	4.3	2.9	5.0	3.1	4.7	4.0	3.4	3.7	5.0
White	79.3	78.9	77	73.5	84.4	78.5	80.5	79.3	80

Source: Hoffer et al (2001)

Faculty of color representation. Still, the relative scarcity of persons of color with doctorates does not entirely explain the lack of progress for faculty of color. The *number* of faculty of color increased considerably between 1983 and 1993—by 44%. But the *percentage increase* was much less dramatic—from 9.3% to 12.2%, mostly attributable to gains by Asian Americans. The proportion of African American faculty at predominantly white colleges and universities today—2.3%—is virtually the same as in 1979. Even in fields with relatively ample supplies of scholars of color, such as education and psychology, the proportion of African American and Hispanic faculty positions at predominantly white institutions barely

approximates the percentages of nonwhites who hold doctorates or professional degrees in those fields. Persons of color have experienced some improvement in their numbers in the academic profession, they accounted for just 17% of the total faculty in 1997, 13% of the full-time faculty, and 9% of the full-time faculty at research universities. (See Table 9).

Table 9. Faculty, By Race, 1989 and 1997

	1989		1997	
	Persons of Color	Whites	Persons of Color	Whites
Total Faculty	10%	90%	17%	83%
Full-Time Faculty	11%	89%	13%	87%
Part-Time Faculty	10%	90%	13%	87%
Full-Time Faculty at Research Universities	8%	92%	9%	91%
Tenured (among full-time faculty)	NA	NA	43%	54%
Full Professors	8%	92%	11%	89%
African Americans, Hispanics, Native Americans	4%	96%	5%	95%
Full Professors in Science & Engineering	NA	NA	24%	76%
African Americans, Hispanics, Native Americans	NA	NA	6%	94%

NA=Not Available
Sources: Chronicle of Higher Education (2001); Harvey (2001); National Science Foundation (2000); U.S. Department of Education (1998).

Rank and institutional type. Men and women of color hold lower academic ranks than whites. The representation of faculty of color is low at each rank, but has increased overall from 1989 to 1997 (Table 10). Still, minorities accounted for only 11% of the full professors in 1997. Women of color made greater progress than men of color in attaining full professor status (23.2% versus 9%). Despite this progress, however, women of color are only 2.5% of full professors and men of color only 8%; 17% are white women, and 72% are white men.

Table 10. Faculty, By Race and Rank, 1989 and 1997

	Faculty of Color		White Faculty	
	1989	1997	1989	1997
Professor	8%	11%	92%	89%
Associate Professor	10%	13%	90%	87%
Assistant Professor	14%	17%	86%	83%
Instructor	13%	15%	87%	85%
Lecturer	14%	14%	86%	86%

Source: Harvey (2001)

Persons of color, meanwhile, are more likely than whites to work at less prestigious institutions. The highest percentages of African American faculty members are found at public comprehensive universities (9.1%) and public two-year colleges (6.2%). Asian Americans make up 9% of the full-time faculty at private research and 7.1% at private doctoral universities (Table 11).

Table 11. Percent Full-Time Faculty, By Race and Institutional Type, 1992

	Total	Public Research	Private Research	Public Doctoral	Private Doctoral	Public Comp	Private Comp	Private L. Arts	Public 2-Yr
White	86.5	88	83.7	87.5	84.1	82.7	91.3	90	85.5
African American	5.2	2.8	5.0	3.1	4.9	9.1	3.5	5.4	6.2
Hispanic	2.6	2.2	2.1	2.5	3.7	2.6	1.3	4.1	1.4
Asian American	5.2	6.9	9.0	6.1	7.1	5.1	3.3	2.8	3.3
Native American	0.5	0.1	0.2	0.8	0.2	0.5	0.2	0.5	1.0

Source: U.S. Department of Education (1998)

Tenure status. Faculty of color are less likely to be tenured than whites. With the exception of Native Americans, however, the percentage-point difference is not as great between tenured minority men and women as between all men and women (consistently 20

or more percentage points). The proportion of tenured faculty of color increased three percentage points from 1989 to 1997, but the increase was entirely for males of color; the proportion of females of color actually dropped one percentage point. (Table 12)

Table 12. Percent Tenured Faculty, By Race, 1989 and 1997

	1989			1997		
	Total	Men	Women	Total	Men	Women
Total	71	75	59	73	77	63
White	72	76	60	75	80	64
Total of Color	61	63	57	64	68	56
African American	61	63	59	61	64	57
Hispanic	64	66	58	64	68	59
Asian American	60	61	54	66	70	54
Native American	67	71	57	63	71	51

Source: Harvey (2001)

Faculty Employment Data Use in the Academy

Realizing that these aggregate data may lack specific relevance locally, a project team worked with academic officers and institutional researchers from ten institutions to design and pilot a data template to track and report important faculty personnel actions over a five-year period. Categorized by gender and ethnicity, the template included data on type of appointment (e.g., full- and less-than-full-time; non-tenure-track, tenure-track, tenured), tenure decisions, turnover, age, retirement projections, and the outcomes of post-tenure reviews. Study participants identified a wide range of intended uses for the data that included plans to: 1) revise faculty employment policies, 2) prepare trend analyses, 3) inform discussions of flexible hiring policies, 4) benchmark against peer institutions, and 5) clarify, confirm, or refute current beliefs and perceptions on campus about how women and faculty

of color fare. In autumn 1999, researchers visited the pilot institutions to meet with faculty, administrators, staff, and in some cases trustees and legislators, to discuss the actual collection and use of data on campus.

Finding #1: Political readiness is crucial. When undertaking a data collection process of this sort, political readiness is a vital element. Political readiness is largely determined by the who and the why. Who wants the data? For what purpose? Is senior leadership in charge of or at least supportive of the effort? This concept was wonderfully described by a provost who said, "Data don't just get up and walk around by themselves. If they don't align with some higher will, they'll just sit there. Those data are impotent, and they only become potent when somebody in charge wants something to happen."

The role of senior leaders varied widely among the ten institutions, ranging from coach to quarterback to spectator. At institutions where the president and/or provost led the process, the demand for the template data was higher than at institutions where senior administrators were only tangentially involved. In some cases, a senior leader (e.g. chief academic officer) actually made the case for collecting the data, presented the template data to campus constituents, and linked the information to policy formulation and decision-making.

In a few cases, however, no data from the template were actually presented during the site visit; as a result, most constituents were unknowledgeable about what data were collected or how they might be used in campus policy development or decision-making. In these instances, senior leaders were chiefly spectators. Data appeared to be relatively unimportant to leaders and unlikely to be used in decision-making.

Particularly on campuses with no tradition of data-driven decisions, the very act of collecting data can provoke concerns and suspicions, and little trust was expressed about the collection and use of the template data. At one site, doubts were repeatedly mentioned about

whether the central administration *could* actually collect accurate data on faculty employment issues and decisions. At another institution, there were concerns about how the data might be used, leading one faculty member to note, "We don't normally collect these data because too many people figure that it could only be harmful, never helpful, to do so." Without trust, intention, and leadership—the three elements of political readiness—the probability that data will matter drops precipitously.

Finding #2: Technical and operational readiness is vital. Technical readiness—an institution's technological capacity to collect the data—is another vital element. What sorts of software are available for data collection and analysis? Are there staff members with the requisite expertise? Operational readiness—the quality and accuracy of existing data on faculty employment, both current and historical—is also essential.

Technical and operational readiness differed greatly among the pilot institutions. The information systems and databases from which data were generated were questionable at several sites. In addition, the staff varied in size, competence, and available time. At some institutions "the data just weren't there;" at others, data on faculty were collected and maintained in multiple systems, in different formats, and in several locations (e.g., central administrative offices, school/college deans' offices, specific departments).

In one extreme case, the provost's office lacked ready access to accurate data on a broad range of faculty employment issues. Instead, one administrator allowed, "data were all over the place." Some information was stored on a mainframe employee database, other data were maintained on personal computers by deans and department chairs, and still other records, on paper, were filed in the provost's office. As a result, officers could not determine the actual number of tenured and tenure-track faculty appointed in the various colleges and departments in the most recent academic year. The provost speculated that the dearth of data might reflect a

subconscious concern about what the data might indicate as well as a level of institutional indifference to data as a prerequisite to decision-making.

At another institution, the data collection challenges were more operational, but just as significant. In this instance, the problem was that changes in the institution's human resource data systems resulted in different data files and formats across the five years covered by the template. Consequently, some of the variation in the data was as much a result of data systems as actual changes in faculty appointment policies and practices.

This example points to an important data collection issue: Many faculty data systems focus primarily on operational and administrative details (e.g., payroll, benefits, and employment status) rather than on data and analysis for policy development and decision-making. Consequently, gathering policy-relevant data on key faculty employment and work life issues presents substantial challenges for many institutions. These difficulties explain in part why key data on faculty appointments are not readily available to decision-makers. Of course, having technology, staff, and readily available data does not ensure that the data will be used; that depends on political readiness, as previously discussed.

Finding #3: Definitions are problematic. Faculty employment issues are inherently complex, not only for professors and administrators, but especially for constituents with less frequent and direct campus contact (e.g., trustees, legislators). As a result, definitions matter, lest terminology further cloud an already complicated policy arena. Without a common vocabulary, meaningful comparisons across departments, schools, and institutions are unattainable. Accurate data based on clear categories and precise definitions are crucial to generate and analyze useful faculty employment data.

Agreeing on definitions presents an early and sometimes insurmountable challenge to data collection efforts. The very definition of what constitutes data is sometimes unclear. Data

on faculty employment issues can include anecdotes, descriptive statistics, subjective judgments, comparative or inter-institutional data, benchmark analyses, descriptions of normative and nonstandard policies and practices, surveys, focus group feedback, financial and budget reports, and evaluation studies. Furthermore, some data are "official" or formal, and other data are "unofficial" or informal, yet both may matter, although not always with the same constituents.

The use of national or peer-group data on faculty employment can be limited because important terms and definitions were not sufficiently discussed and refined by decision-makers and data providers. One academic vice president noted, "What looks relatively simple gets quickly convoluted when you're not using similar definitions." "This is crucial," agreed a research university president. "Most discussions of faculty issues get bogged down by definitional problems, so that if you don't agree to terms you've got an unsolvable problem." The inability to achieve common definitions for important terms strengthens the ability to resist change. As one faculty member observed: "One sure way to maintain the status quo is to say that something is indefinable; then it cannot be measured."

Finding #4: Data on faculty employment practices generates a desire for more.
Consistent with the literature on data as catalyst for further data collection (Feldman and March 1981; Weiss 1991b, 1999), as these data were produced, faculty, administrators, and sometimes board members requested additional data and finer-grained analysis. Most users wanted to "get behind" the numbers, to find out what they really meant. In all cases, the dissemination of quantitative data produced a desire for qualitative data to explain the findings and trends. For example, once differences between the number and percentage of women and minorities compared with white males who persist to tenure was known, additional questions emerged: Why is the persistence rate different? Why do women and faculty of color drop out on their way to tenure? Were they considered tenurable when they left, or were they likely to have been

denied tenure? Are they leaving for better offers elsewhere? Did they leave academe altogether? Was there a chilly climate on campus? In order to effect change on campus through policy enhancements, faculty and administrators needed a lot more than just raw numbers. However, the numbers themselves offered clues about what additional information was needed.

In some cases, data that could be viewed as unfavorable produced demands for more data to clarify, justify, or refute the original information. The demand for additional data can be a challenge to "wrong" data, a way to filibuster, or even a way to disprove an unfavorable conclusion, much as objectionable research findings produce challenges to methodology. Even when the data are not disputed, demands for more data can arise because discussion of the extant data lead people to say, "Now that we know this, wouldn't it be great to know that?"

In a few cases, the template data neither confirmed nor refuted common beliefs or popular perceptions, but they generated more questions anyway. At an institution where the data disclosed that no one was denied tenure during the past five years, faculty and staff proposed a number of possible explanations. Could it be that the tenure criteria were faulty? Perhaps the administration was unwilling to make tough decisions? Maybe the institution has a highly effective "weeding out" process? Was it possible that the market was so favorable that the institution could pick and choose the very best junior faculty? Should the institution reconsider its tenure and promotion policies? No attempt was made, at least during this meeting, to resolve these widely divergent and apparently conflicting hypotheses. Provosts, deans, department chairs, and faculty wanted additional comparative data that would help the institution understand norms for certain policies, practices, and trends. In still other cases, the aggregated, institution-wide data from the template led to interest in data disaggregated by department, school, and/or discipline, and by race and ethnicity beyond the two categories necessary in this study to protect the anonymity of the relatively few persons of color at small institutions.

Finding #5: What is measured becomes what matters. The very compilation and dissemination of these data place certain faculty issues into play. As Schein (1992), among others, has recognized, what gets measured is what matters. Data make certain problems, like the percentage of women and persons of color in tenured and tenure-track positions, harder to ignore. In about half of the cases, the template data catalyzed campus discussions of specific, problematic policy issues.

How the data are gathered, which distinctions are made, and how they are presented determine how they will be used. Because the template required institutions to report data by gender and race, certain differences were spotlighted. Had we, instead, asked for data by department, but not by gender and race, departmental differences would have been highlighted and gender/race issues would have been obscured. The template data by gender and race identify possible disproportionate effects of faculty employment policies.

While typically not articulated, the use of faculty employment data is clearly symbolic and acts as a signal to convey what is important at an institution. One provost said, "The very fact that we are collecting and disseminating these data signals the campus community that we are interested in faculty work life and factors that effect it." Said another chief academic officer, "This process is symbolic as well as rational. It shows that we are concerned about how women and minorities fare here." For at least three institutions, the process of collecting these data allowed administrators to bring faculty employment data together in one central location and provided a rationale for why this should be done.

Finding #6: Data are rarely directly linked to decisions. Consistent with most prior research on the subject, we did not find direct links between data and policymaking. The literature presents a mixed picture of the value and role of systematic data and analysis for purposes of decision-making and policy development. Carol Weiss (1999) observed:

Policy does not take shape around a single table. In democracies, many people have a hand in defining the issues, identifying the perspective from which they should be addressed, proffering policy solutions, and pressing for particular policy responses. Legislators[,] … civil servants, constituency groups, pressure groups, party leaders, potential beneficiaries of new policy, taxpayers, intellectuals . . . all take part in supporting and opposing new definitions, conceptual frames, and policy proposals. Almost never does the choice of policy hinge on the presence or absence of information. (p. 195)

Further, since decisions usually occur by "accretion," rather than at an official time and place (Weiss 1991a, 1999), no one can be certain which data, if any, affected which decisions.

Similarly, Feldman and March (1981) determined that "the link between decisions and information is weak" because:

- Much of the information gathered and communicated by individuals and organizations bears little relevance to the decision.

- Much of the information used to justify a decision is collected and interpreted after the decision has in effect been made.

- Much of the information gathered in response to requests for information is overlooked when making the decision for which it was requested.

- Regardless of how much information is available at the time a decision is first considered, more information is requested.

- The relevance of the information provided is less conspicuous than is the insistence on information (p. 174).

Although tangible links between data and decisions are uncommon, data often do play a role—rarely the lead role—in decision-making and policy formulation. At the very least, the

presence or absence of data can influence how leaders and other parties frame problems and determine which issues to highlight or mute in policy discussions. Data thus can be used for various purposes. In this study, data functioned to catalyze, compare, identify/warn, illuminate/enlighten, influence, inform, monitor, orchestrate, signal, symbolize, socialize, and substantiate. Three were particularly prominent in the pilot project on faculty employment data: monitor, compare, and substantiate.

One very important role played by data collected over time is to help organizations evaluate policies and practices, to *monitor* progress, and to make "marginal adjustments in strategies currently in use" (Weiss 1981, p. 188). Throughout our site visits, faculty and administrators discussed how important it is to have trend data—for example, on the number of part-time faculty. On one campus, an administrator discussed how the decision to hire part-time faculty was not made centrally. "Rather," he said, "the growth in numbers of part-time faculty was the cumulative impact of hundreds of separate decisions in separate departments. Snapshot data only provide one part of the picture. The trend data allowed us to see the cumulative picture and will allow us to continually monitor the situation." A provost put it this way, "You have to keep adjusting the compass."

Data also help place the institution's policies and practices in a broader or different context and counter insularity and parochialism by allowing institutions to *compare* data. In this fashion, data provide a window into a world that faculty and staff might not otherwise view. Faculty, and maybe to a lesser extent administrators, tend to be rather uninformed about policy and practice elsewhere, except by anecdotes swapped among colleagues in one's discipline. Dissemination of the template data heightened the curiosity of constituents about faculty appointment practices elsewhere and comparable data from peer institutions. As one administrator noted, "I'd like to see some comparative data so I can address the question: 'Are

we as good as we think we are or as bad as we think we are?'" This question begs the follow-on questions: Compared to whom and to what? Based on what reference point in time?

Administrators and faculty from several institutions wanted to obtain comparative data from peer institutions to ascertain normative trends and conditions and to consider whether the institution's policies and practices were outside the norm. This is consistent with data as reorientation (Weiss 1981). As a dean observed, "We know a lot about ourselves since we are a small institution, but we don't know whether our numbers are higher, lower, or the same as those at peer institutions." Said one provost, "We don't want to be all that different from everybody else on most of these measures. If we are, who are we different from and in what ways?" While several institutions in the pilot group seek comparative data from peer institutions, they do so only on an ad hoc basis. Participants felt that having the template will help them more systematically collect these data on an ongoing basis.

At most institutions, the template data clarified, confirmed, or refuted what many campus constituents had known intuitively about faculty employment trends at the institution, thus allowing decision-makers to *substantiate* opinions, claims, and beliefs. An administrator stated, "This is so much better than the usual anecdotal stuff; it's very helpful because it provides a reality check." A data provider said, "We need these data as proof that we are doing what we say we are doing, to defend our faculty practices to external constituents like legislators and board members." A state legislator acknowledged, "We all harbor perceptions, or misperceptions, as the case may be. Data like these can provide a reality check to test these perceptions," and to create a new impression or to correct a misimpression.

Constituents at several institutions appeared to take the insights derived from the template data quite seriously. In this sense, one could argue that data play an important role as objective evidence of the actual impact of faculty employment policies (e.g., How many and

what percentage of faculty are awarded tenure? How many faculty resign prior to the tenure decision?). Hard data make it more difficult to initiate misperceptions or perpetuate myths. Data have the power to separate fact from fiction and rumor from reality. In a data vacuum, misperceptions can flourish easily. Even with data, rumors may abound; however, they are less likely to persist and prevail. When asked to talk about what the template data revealed, a faculty member at one institution noted, bemusedly, "The data show that we tenure everyone who comes up, period," a powerful and irrefutable data-based conclusion.

Finding #7: Stories may outweigh statistics. Anecdotes about faculty employment issues play a significant role on campuses and are often cited by lawmakers to support proposed legislation. Frank Schmidtlein (1977) described reliance on informal information from trusted sources, past experience, and the power of anecdote, "Even with the advances made in modern systems of data collection and analysis, most of the information brought to bear on decisions continues to come from personal experience and knowledge obtained from sources other than formal data systems" (p. 37).

In the legislative arena, policymakers often depend more on informal sources of information and anecdotes than on systematic data and analysis about faculty employment. The power of a vivid story conveyed in a well-timed telephone call, from a well-placed source cannot be understated, especially for policymakers deluged by information on a myriad of issues and problems. A state legislator tersely characterized his approach as follows, "When my phone rings, I write bills; when I write bills, I effect change; when I effect change, I get re-elected." This legislator emphasized the advantage of linking legislation, whenever possible, to an actual person (e.g., the Brady bill) or event (e.g., Columbine) because such connections are so much more memorable than dry data.

A lobbyist for one institution remarked, "Anecdotes are more powerful than formal data

for many policymakers." In the same vein, a longtime institutional researcher from a system that gathers extensive data on faculty employment policies and practices declared, "The legislators in my state actually say, 'I don't care about the data. I don't want it.'" Indeed, a "don't confuse me with the facts" attitude characterizes many policymakers. If one constituent had a bad experience in college, there may be sufficient political reason to act, regardless of overall data. In these cases, a sample size of one suffices to pass judgment and even legislation. In some states, compulsory post-tenure review was triggered by powerful stories about relatively few allegedly deadwood professors.

Finding #8: Data use differs by constituent group. The farther removed the constituency, the more the data need to be limited and targeted. Most legislators and trustees want headlines and punch lines, and data in small doses, if at all. The few with a proclivity for data want the information presented in a fashion that tells a simple story, embellished with pie charts and bar graphs. Legislators want data that prove a point. In short, legislators want ammunition. If the data are unavailable, ambiguous, or complicated, they will be replaced by anecdotes.

On matters of data usage, trustees resemble legislators. Many board members expressed greater interest in what the data mean than all the nuances of the data numbers and methodology. One trustee complained that discussion of the template data focused more on "the mechanics of the data" than on the import of the data. He had two key questions: How can you link these data to efforts to improve the quality of education, and how can these data help the institution do a better job? Trustees want less information with more meaning.

Presidents and provosts used data to shape an agenda, to provide support for hunches, to demonstrate accountability, to make comparisons with peer institutions, to change culture, and to make a case to board members or legislators. Those presidents and provosts with an

appetite for data were more likely to use the template data in a variety of venues with many constituents, although this also depended on the issue and the executive's leadership style.

Deans and department chairs especially valued data that apply specifically to their discipline or profession. Many expressed reservations about the utility of institution-wide template data, preferring instead data disaggregated by school and department so as to reflect the culture and market in the various disciplines. One department chair observed, "Most of my actions with faculty are individual ones. We like to think that we're all exceptions, so at first blush, the template data are not very helpful." Another department chair remarked, "I need help solving problems involving individual faculty, not more data." A number of department chairs wanted data by department, gender, and race/ethnicity. One chair stated, "It is important to identify those departments where women and minorities are not faring well and encourage improvement." On a somewhat more pragmatic level, a department chair desired data to argue for additional money for his unit. Convinced that his unit was more productive and efficient than others, he remarked, "We argue for positions every year; we could use the template data to make the case for more faculty lines."

Faculty are often involved on campus committees and task forces charged with policy review and, in that capacity, are sometimes asked to draft faculty handbook language. Members of faculty welfare and promotion and tenure committees were particularly interested in faculty employment data. Frequently faculty comprise, for example, the campus committee on the status of women and minorities. Their interest in data would typically be tied to involvement with such groups or with disciplinary associations where faculty employment issues were under review. Not unexpectedly, faculty with leadership roles in campus governance, senates, and unions tended to have more interest in the template data.

Finding #9: There is no single "owner" of faculty data. This project revealed that there

were clearly data providers and data checkers, and usually data users (although not always readily identifiable), but no data "owners." Where should these data reside? Who "owns" these data? Who will insure that they are captured in the future in a systematic way? Is it the responsibility of the provost's office, where many institutions place faculty personnel matters? Or should it lie with the institutional research office where other institutional reporting lies? Does the human resources office bear responsibility for housing these data? Even beyond where the data reside lie the questions of who owns the data and who is ultimately responsible for insuring that the academic institution has viable, accurate, and ongoing faculty appointment data. In the words of a vice provost, "Regardless of the technical, structural, and organizational issues surrounding data collection and use, there still remains that issue of a data owner who speaks up and says, 'This is the kind of long-term data that I need.' Provosts and presidents are like corporate CEO's who want to know what the next quarter shows rather than what the company is going to be like in five years. In fact, the tenure of senior leadership is not long, so it is rare that you get a long-term perspective in terms of data." As noted, it is sometimes difficult to find data users, let alone data owners, in many academic institutions. With all the urgent matters at hand every day, most data get lost, and data about faculty appointments, for example, can easily be placed on the back burner and forgotten entirely until an issue where it is required comes into play.

Implications for Practice

While there are a number of problems and challenges endemic to the use of data on faculty employment policies and practices, decision-makers and data providers can mitigate some of these difficulties, discussed next.

Be careful what data you ask for. The very fact that a leader or decision-maker asks for certain data can raise suspicion or anger. When those data concern faculty employment, the potential for trouble increases. However innocent the motives may be, demands for such data

elicit questions such as, "Who wants to know?" "Why?" and "What is this all about?" Faculty anxieties rise proportionate to administrative requests for employment data.

Remember that data are not neutral. C.O. McCorkle (1977) wrote, "We must always bear in mind that none of the information, neither the judgmental elements nor the quantitative 'factual' information, is neutral. Although we sometimes might like to think otherwise, the information we use to analyze…is subjective, reflecting the opinions and biases of the individuals who gathered and analyzed the data" (pp. 4-5). Oftentimes, there are no neutral data elements, and the parties involved cannot agree on the "facts."

Clarify your data and analysis needs with data producers prior to the collection and display of data. Lack of data is rarely a problem on most campuses; however, ill-defined demands for data are common and problematic. Data providers at several institutions expressed frustration about having the data but not knowing how best to present it to those who ask for it. When the requests are vague, data providers may spend an inordinate amount of time producing reams of information that will never be used.

Be clear about what policy questions you are trying to address and about the data you want. "Data become informative only when we have specific policy questions that need illumination and resolution. The kind of policy question that is asked dictates information requirements" (McCorkle 1977, p. 3). In other words, the answer depends, in large part, on the question. At several institutions, specific policy questions were not linked intentionally to the data being collected. As a result, opportunities were missed to use data to enlighten policy discussions and to meet the analytic needs of decision-makers. Questions posed by senior administrators, trustees, and faculty leaders should shape the agenda for data acquisition and analysis, not vice versa.

Model the behavior that you desire others to manifest. Presidents, provosts, deans, and

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other senior administrators play a critical role in establishing institutional norms for data collection, dissemination, and use. If leaders make clear that data matter to decisions, then others are more apt to marshal data, whether to advocate positions or to monitor progress. A provost at one institution deliberately involved campus constituents in data-driven policy discussions of faculty employment issues and was careful to exemplify the point that policy discussions would be grounded in data and analysis, not anecdote and conjecture.

Recognize the symbolic functions data serve that are not directly tied to decisions. Some data will be ignored and some will be used in ways that cannot be directly observed. Data collection provides symbolic legitimacy to decisions and by extension to organizations. When data informs decisions, those decisions may be perceived as better, sounder, or more rational than they would have if no data been were used at all. One reason that organizations collect so much data is that the "use of information is embedded in social norms that make it highly symbolic" (Weiss 1981, p. 171).

Understand the appetite and aptitude of decision-makers for data, and tailor analytic products to their preferences and abilities. Be aware of how decision-makers frame particular policy issues or problems and provide data accordingly. Present data in clear, preferably graphic, formats that decision-makers can understand quickly and easily. In a number of instances, data providers gave decision-makers data and analyses that they did not want or could not use. Part of the problem in a number of cases was that data-providers appeared to neither understand nor appreciate how policymakers viewed particular policy issues and problems. The concerns and interests of policymakers were not aligned with the data and analyses that were presented.

"Perfect" data do not exist; data providers should be realistic about what is possible and avoid "analysis paralysis." "The near infinite amounts of data that can be collected, and severely limited resources for collection and analysis, always constrain the practical uses of data"

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(Schmidtlein 1977, p. 31). If organizations and decision-makers waited until they had all data that could be brought to bear on an issue, "or if they sought to ground all decisions in objective evidence," they would be paralyzed (Weiss 1981, p. 187). Expect repeated requests for more data or the same data arrayed slightly differently. Very often, less is more. Decision-makers are more apt to drown in too much data that makes too little sense than to die for want of a datum.

Don't just provide data; be explicit about how to use it. Data providers can play an important role in helping decision-makers use information by being explicit about which data answer what questions and whether the answers are complete or partial, certain or uncertain. Prior to data collection, institutional researchers should understand the policy issues underlying the need for the data. Data providers should ask questions to clarify the purpose of data collection and analysis. They should also explain the findings to decision-makers, being careful to explain the limitations of the data.

Making Sense

Perhaps with some naïveté, we began this study with the idea that data might make a difference—that is, that the presence of data would lead to better decisions. We assumed that the academy is grounded in scientific inquiry, that scientific inquiry requires data and analysis, and that better decisions are made when data are at hand. Yet, experience in the academy could easily lead one to conclude, as David Dery did: "Confronted with such common patterns as systematic gathering of information with little decision relevance, the gathering of information after the decision has been made, the nonconsideration of available information, and the tendency to ask for yet more information, one is tempted to conclude that organizations are systematically stupid" (1990, p. 22). Since it is not heartening or particularly useful to conclude that colleges and universities are "systematically stupid," we have to dig deeper to answer questions such as: Why do data play so many roles but not a definitive one? Why were we unable

to establish a link between data and decisions? We first answer these questions in generic terms and then offer possible answers where the decisions to be made concern faculty work life.

Analyzing how decisions are made in universities may require a consideration of garbage cans and organized anarchies (organizations with ambiguous and, therefore, problematic goals, transient participants, and unclear technologies) (Cohen and March 1986). In describing how decisions are made in universities, Michael Cohen and James March (1986) discovered one "quite consistent theme: Decision opportunities are fundamentally ambiguous" (p. 81). Analyzing decision-making in universities is quite complex because, often, "organizational participants arrive at an interpretation of what they are doing and what they have done while doing it" (p. 81).

From this point of view, an organization is a collection of choices looking for problems, issues and feelings looking for decision situations in which they might be aired, solutions looking for issues to which they might be the answer, and decision makers looking for work. A key to understanding the processes within organizations is to view a choice opportunity as a garbage can into which various problems and solutions are dumped by participants. The mix of garbage in a single can depends partly on the labels attached to the alternative cans; but it also depends on what garbage is being produced at the moment, on the mix of cans available, and on the speed with which garbage is collected and removed from the scene.

Using the Cohen and March (1986) framework, there are six possible explanations for why there are so few direct links between data and decisions. First, a dominant assumption is that universities are engaged in a rational process when they make policy decisions. Reality suggests, however, that data are used selectively for political and symbolic purposes that may or may not be directly tied to decisions. Further, "creative organizations operate at the edge of chaos where the links between action and long-term outcome get lost, making it impossible for

their members to use rational, intentional processes." We cannot postulate "a link between a particular kind of overall decision-making process and a successful outcome, because such links get lost" (Stacey 1996, p. 251). Second, we tend to assume that all participants have all the data at the same time. In truth, various participants have different types and amounts of data at different times, so that decisions are, in part, a function of the availability of data. Third, the amount of data that people can or choose to consume differs; people have different appetites for data that change over time and as a function of the issue at hand. Fourth, sometimes a sample of one (e.g., a single deadwood faculty member or a Nobel Prize winner) is all people need to draw a conclusion or make a case. These "data points" become iconic and lessen the need for any additional information. Fifth, data appear in different places at different times. Because participation is fluid, people carry data from one arena to another and use it in ways not originally intended. This makes it difficult for leaders in a particular "garbage can" to get the right data into play in the right venue. Data sets come and go as people come and go. Finally, data use is an ambiguous concept. In the interactive model of decision-making, information is sought from a number of sources in a nonlinear way. In this model, "the use of research [data] is only part of a complicated process that also uses experience, political insight, pressure, social technologies, and judgment" (Weiss 1991c, p. 177). Often, decision-makers are not even sure what data, if any, they are using and how they are using it. People gather data but use other means to make decisions. Decisions are often made before seeing data and the data are then used to justify the decision. In fact, decision-makers will rarely admit to gut-feel decisions— which sound so irrational and anti-intellectual—so instead, they pretend to use data.

In sum, a link between data and decision-making has not been established in other studies of organizations and policymakers. When the spotlight turns to academic institutions and issues of faculty work life, matters are even more complicated. Why?

First, faculty work is complex and not easily quantified. Second, because of the high degree of faculty autonomy, there is at best only a weak internal market for performance data "supervisors" might use to regulate behavior. Third, even when faculty work is quantifiable, the data are subject to multiple interpretations. For example, does the fact that 85% of all tenure decisions are positive mean that standards are too low, the undeserving were weeded out during the probationary period, faculty development and mentorship programs succeeded, the performance criteria were so clear that faculty knew precisely what to do, or something else entirely? Fourth, in the faculty work life domain, data do not address visceral concerns. Data do not address public resentment of tenure as privilege, for example, or concern that tenure overempowers faculty. These issues are not illuminated by data. How do you place academic freedom into the realm of data? It is difficult to bring data to bear on many questions that are at the core of the current debates about faculty work life. Fifth, when the issue at hand concerns beliefs and values like academic freedom, academic tenure, the intrinsic worth of knowledge, or political correctness, then data have less sway. There are few aspects of faculty work life where incontrovertible data illuminate policy issues as might be the case with budgets or enrollments. Sixth, it is often difficult, and sometimes impossible, to find the locus for many decisions in academe. Shared governance clouds the identity of decision-makers, so data assume other functions. Even if we could establish that data lead to better decisions, or at least that data enlighten decision-makers, we do not always know who the decision-makers are or will be. In some cases, decisions seem to occur mysteriously from out of nowhere. Henry Rosovsky, former Dean of the Harvard Faculty of Arts and Sciences, presents a wonderful example in his 1990-1991 Dean's Report. In a section on a "decision" to reduce faculty course loads, Rosovsky wrote: "First, the Dean has only the vaguest notion concerning what individual professors teach. Second, the changes that have occurred were never authorized at the decanal level. …No

chairman or group of science professors ever came to the Dean to request a standard load of one half course per year. No one ever requested a ruling concerning, for example, credit for shared courses. Change occurred through the use of fait accompli – i.e. creating facts" (p. 10).

While one cannot assert that data on faculty work life drive policy decisions, it is possible to argue that data matter in numerous and more ways than first thought. But they also matter in unpredictable ways. It is rarely clear, and never obvious, which data on faculty employment will be used, by whom, and in what ways. In fact, as we gather data about faculty work life, productivity, and the outcomes of post-tenure review, we cannot be sure that they will be used or, if used, what the impact will be.

One thing is clear; once a person's mind is made up, it is unlikely that data will change one's position. As the old maxim proclaims, "Everyone is entitled to my opinion." It is also clear that some issues do not lend themselves well to data collection and numerical evidence. Data, for example, about instances of teenage pregnancy or capital punishment as a deterrent to crime will not alter the views about abortion or the death penalty of someone for whom the sanctity of life is an inviolate moral principle. In fact, where emotions are involved, people will disregard or ignore disconfirming data and perhaps even resent the very fact that data were trotted out at all. As Rosovsky (1990, p. 259) wryly observed:

> Never underestimate the difficulty of changing false beliefs by facts. . . . Currently, over 90 percent of our senior faculty teach at least one undergraduate course per year. The firmly held belief that Harvard professors do not teach undergraduates is not the least bit weakened by these statistics. …When given the opportunity -- in the absence of incontrovertible scientific proof, and sometimes even then -- people believe what they wish, and empirical evidence does not lead to quick altering of cherished positions.

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