

University professor in Brazil: an emerging profession?

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1. The academic professions

The Carnegie Foundation survey on the professorate starts with the notion that university professors make a distinctive, an assumption shared by a growing literature. But what does it mean to say that professors are a profession? To what degree is the professor of pediatrics in a medical school, the researcher in a physics department, and the lecturer in a community college, members of the same profession? Is this concept more than a statistical or administrative classification? How important is it to know whether academics are truly a profession, in general and in specific contexts?

More than the description of a reality, the idea of an “academic profession” corresponds to a model (or an “ideal type” in the Weberian sense) of what to belong to such profession should mean: a common core of competencies and educational background; a concern with research and scholarship; full dedication to work in universities and research institutions, rather than independent professional work in specific fields; involvement with matters of graduate and undergraduate education; and a commitment to the academic profession, above and beyond the institutional context where the academic activities take place.

This ideal type is similar to that of the freestanding liberal professions of law and medicine, but has to compete with two other professional models that are also central to the academic activity in all parts of the world. The first, more typical of European countries, is the professor as a government officer, a member of the public bureaucracy. Like the liberal professional, the civil servant keeps the pride and prestige of a learned profession. He retains his professional identity and the “spirit de corps”

¹ This is part of the International Survey of the Academic Profession, coordinated by the Carnegie Foundation for the Advancement of Teaching. We are grateful to the Carnegie Foundation and to the Conselho Nacional de Desenvolvimento Científico e Tecnológico for support.

with allows him to negotiate, up to some point, the terms and conditions of his work. Rituals of admission and professional practice are strongly enforced, both for education and for professional practice. The professor is not free to decide his career, which has to follow the general rules and procedures of central authorities and complex bureaucracies. But he perceives himself as a public figure, with an intellectual and cultural role to play which goes far beyond that of any free standing professional. He is, to use Fritz Ringer's image, the modern version of the Chinese mandarin.

The other professional model is a direct consequence of expansion of higher education and the corresponding loss of status of the university professor. In most countries – and this is truer for larger than smaller societies – higher education became more heterogeneous, with different people looking for different types of education. The socialization of academics through a common secondary education, or at least a uniform state examination, became more difficult to maintain and justify. This common education, and a similar social origin, were grounds for the long held belief that all sciences and learned professions shared a unified epistemology, to be maintained and expanded by the university². Now, it is common for professors to see themselves as employees in large institutions, with a job to do and a salary to earn at the end of the month, rather than as a liberal professional, or a member of the intellectual and bureaucratic elite. Instead of a lifelong career, their passage through the academy may be temporary, and, even if it is not, they may be more committed to their specific profession than to the university and its values. This is the breeding ground for a new type of professor, closer to the trade unions than to the learned professions. He works for large organizations, very often controlled by a centralized ministry, which has to account for the proper use of public resources and the delivery of education services in appropriated quantity and time. He responds in kind, getting organized in professional unions, to guarantee his salary, working conditions and benefits. On both sides, there is a strong pressure toward uniform standards and procedures, due process, and clear rules for admission, promotion and payment.

These three ideal types, or models, define the field of possibilities for the organization, values and orientation of academics in a given context³. Little is left of the traditional view of a common epistemology and homogeneous culture of scholarship unifying the academic profession. The relative prevalence of one of the three depends on the way the higher education system is organized, the role and weight of the private

² The social and cultural origins of the perception of the University and the Academic as unified entities, with capital letters, and sharing a common epistemology, has been stressed by authors such as Clark Kerr, in his well-known introduction to Abraham Flexner's book on American, British and German universities, and Clifford Geertz. The cultural diversity of academic disciplines was pointed out by Tony Becher in his several writings. See Abraham Flexner, *Universities: American, English, German* (introduction by Clark Kerr), New York, Oxford University Press, 1968; Clifford Geertz, *Local Knowledge – Further Essays in Interpretive Sociology*. New York, Basic Books, 1983; Tony Becher, *Academic Tribes and Territories: intellectual enquiry and the cultures of disciplines*. Milton Keynes, Society for Research into Higher Education/Open University Press, 1989.

³ In this text, we shall use the words “academics”, “professors” and “university teachers” interchangeably. Cross-national variations in the use of these expressions are a further indication of the varying culture of the academic profession. In Brazil, the word ‘professor’ is used indifferently refer to anyone who teaches something. The word ‘academics’, on the other hand, is usually restricted to the members of the Academies of Letters, and has a slightly pejorative connotation in common parlance.

and the public sectors, the educational qualifications of professors, their social standing, and the professional and institutional traditions of a country; and it has consequences in terms of how the values and goals that are supposed to preside the academic activities are upheld and implemented. It is against this map of alternatives that we shall examine, in the following, the main traits of the academic profession in Brazil.

2. Higher Education in Brazil

Brazil is a large and unequal country, with most of its population concentrated in the southeast region, which includes the states of São Paulo, Rio de Janeiro and Minas Gerais, and most of the country's modern economy. The other regions are the Northeast, the country's poorest, and densely populated; the South, characterized by the descendants of European immigrants, small industry and small, technologically intensive agriculture; the North, with the demographically sparse and poor Amazon region; and the Center-West, the new frontier, with sparse population, extensive plantations, cattle, booming towns and the country's capital, Brasília.

Brazil is also a latecomer to higher education. Its earlier institutions – schools of law, engineering and medicine – were created in the Independence period in the early 19th century, patterned on the French model of state controlled “faculties”. While in Spain American Catholic universities were established already in the 16th and 17th century, the Portuguese rulers kept higher education to their home, and the first Brazilian universities were created only in the 1930's. The notion that higher education requires permanent research and full-time professors and teachers is still more recent. Professors of law, medicine and engineering (and late pharmacy, dentistry, accounting, architecture, and so forth) were supposed to be active in their profession, of which teaching at universities was considered a natural and prestigious extension, rather than the opposite. Employment in higher education institutions did not require more than a few hours a week, and payment was mostly symbolic.

The current framework for Brazil's higher education was established in the 1968, when an educational reform attempted to reorganize it along the American model, with the end of the traditional chairs, the creation of departments and institutes, the introduction of full-time contracts, graduate education and the credit system, and close links between teaching and research. Undergraduate education, however, maintained the European tradition of providing professional degrees after four to six years of study, with only a few and not very successful attempts to introduce one or two years of general education at the university's entrance.

In practice, the 1968 reform led to parallel lines of development. Two public systems, one of the State of São Paulo and another of the Federal Government, tried to follow the 1968 legislation, providing full-time employment for professors, creating graduate education programs and limiting the number of students admitted each year⁴.

⁴ Public institutions were also created by some municipalities and state government, without, however, approaching the levels of investment and significance of the São Paulo and the Federal systems.

At the same, private higher education expanded, but limited to undergraduate teaching, offering evening courses in the “soft” fields, and catering mostly to students who did not pass the entrance examinations to public institutions. Private education developed mostly in the Southeastern region, where the demand for higher education overtook by far the availability of places in public institutions (in São Paulo, only 19% of the students are enrolled in public institutions today). In the poorer regions, public institutions are still the dominant avenue for further education for the few that complete secondary school.

The 1968 reform, combined with a short period of intense investments in scientific and technological research, led to the creation of a significant scientific community, working in the main public universities and a few government research institutes. There is now a pool of about 15,000 persons with doctoral degrees, most of them working in universities, about 1,000 graduate degree programs in the universities, and public expenditures in science in technology of about two to three billion dollars a year. Articles by Brazilian authors published in the international literature are less than 1 % of the world total. In 1992 Brazil ranked twentieth among nations in academic scientific production in absolute terms, trailing China, Belgium, Israel and Denmark, but ahead of Poland, Finland, Austria, Norway, Taiwan and Korea. Links between scientific research and the productive sector, however, had been weak, and the impact of science and technology on the quality of undergraduate and technical education is limited, a *few* significant exceptions notwithstanding. Because of its growing costs, budget limitations and uncertainty about its broader role, this scientific establishment went through a period of hardship in recent years, which is reflected in this study⁵. Most of this competence in research and graduate education is concentrated in a *few* universities, such as the universities of São Paulo, Campinas, Rio de Janeiro and the Escola Paulista de Medicina.

Brazilian undergraduate education in 1991 included 1,565,056 students enrolled in 893 institutions and attended by 146,988 "teaching positions," of which 133,135 were actually fulfilled. Figures for 1989 showed 32.5 thousand students in masters and nine thousand students in doctoral degree programs. Higher education institutions range *from* large to very small, public or private, with research and graduate education or just undergraduate teaching⁶. After a period of rapid growth in the 1970's, the system stabilized in the 1980's, when the country's economy also stagnated. Only about eight to 10% of the age cohort enroll, but still, unemployment of university degree holders is not uncommon.

(table 1 and graphics 1).

⁵ C. de Moura Castro, "Há produção científica no Brasil?", in S. Schwartzman and C. M. Castro, *Pesquisa Universitária em Questão*, Campinas, Ed. da UNICAMP, São Paulo, Ícone Editora, Brasília, CNPq, 1986, pp. 190-224; T. Schott, *Performance, Specialization and International Integration of Science in Brazil: Changes and Comparisons with Other Latin American Countries and Israel*, Rio de Janeiro, Fundação Getúlio Vargas, 1994; S. Schwartzman and others, *Science and Technology in Brazil: A new policy for a global world*, Rio de Janeiro, Fundação Getúlio Vargas, 1994.

⁶ For an overview, see S. Schwartzman, "Brazil", in Burton R. Clark and Guy Neave, *The Encyclopedia Of Higher Education*, Pergamon Press, vol. 1, 82-92.

This survey of the professorate is the first of its kind to be made in Brazil. It was carried on in 1991, in the states of São Paulo, Rio de Janeiro, Minas Gerais, Bahia, Mato Grosso do Sul and Paraná. About one thousand academics answered the questionnaires, in a random, stratified sample of states, universities and academics within the universities. The subjects were selected from lists of professors provided by the administration of their institutions. It included persons with full-time and part-time contracts, and excluded those linked to research projects but not in their institutions payroll. The questionnaires were personally delivered, and the number of refusals was very small, lower than 5 %. Whenever a person could not be found, he or she would be replaced according to the same random procedure⁷. The sample was intended to cover the variety of sectors, fields of knowledge, type of institutions and regions in Brazilian higher education, but at the same it over represented those institutions with higher levels of scientific productivity and larger percentage of professors with doctoral degrees.

3. Who are the academics?

a. Professional qualifications and employment

A first overview of the results of the Brazilian survey can be seen on tables 2 and 3. Because of the 1968 university reform, full-time employment for professors increased significantly in the public sector, but their academic qualifications, expressed in the percentage of persons holding doctoral degrees or full professorships, lagged behind. If we take these two elements, a doctor's degree and full-time employment, as the main preconditions to belong to an "academic profession" in the traditional sense of the term, then only about 30% of those interviewed qualify. To some extent, to be or not a member of this group depends on the professors' field of knowledge and specialization. Not surprisingly, those in the "sciences" - physical, biological and social - show higher levels of academic qualification and full-time employment than those in the professions - engineering, health, social and technical professions. Table 3 shows that, in spite of the importance of the field of knowledge, the main determinant of whether a person can have a permanent, full-time job, and earn a doctoral degree, is the type of institution where he or she works. The "percentage of errors" column in tables 2 and 3 suggest that about 46% of the Brazilian professorate are "misplaced," in the sense that they either have a full-time job without an academic qualification, or are qualified but with part-time employment. The number of qualified persons without stable jobs in our sample is very small, less than 6 % of the total. Most "errors" refer to persons with stable, and often full-time jobs, without the proper qualifications. Table 3 shows that the highest levels of "errors" are in the federal and state universities outside São Paulo.

⁷ The field work was carried on by Data Folha, a research firm associated with the São Paulo newspaper *Folha de São Paulo*.

(tables 2 and 3)

Another aspect of academic employment in Brazil is the high percentage of persons with full-time, permanent appointments in public institutions, as shown in table 4. Public universities are part of the civil service, and their professors have the same privileges, including job stability, than any other public employee. In the federal system, full time and stability are generalized, irrespective of degree, while the São Paulo University retained a moderate association between full employment and academic rank. Private institutions, on the other extreme, kept full employment down.

(table 4 about here)

Table 5 gives additional information about employment patterns. Those working in basic sciences and the humanities, and in public universities, tend to derive most of their income from their main academic institution, while the figures for the social and professional sciences and technology, and for the private sector, are significantly lower. Part-time work, however, is not restricted to the private sector. The São Paulo system, and the Federal system in a smaller degree, place a relatively high emphasis on the physical sciences, health sciences and engineering, and in the latter two there is a high proportion of part-timers.

b. Social origins and mobility

The emergence of professions is usually associated with processes of upward mobility of specific groups, and this is partially true also for academics in Brazil. In our survey, while 33.7% of the professorate had fathers with only four years of primary education or less, the fathers of another 34.5% had university degrees. So, while for half the academics a university position meant a significant mobility through education, for the other half it was just the reinstatement of their family's social standing. Status differences among disciplines are not very large. There are more children of parents with little education in the basic and health sciences than in other fields, and more children of parents with university degrees in technology than in the rest.

More significant than differences in field are differences among institutions. State and federal institutions have the largest percentage of persons coming from lower social strata, while the São Paulo university and (contrary to common belief) private institutions recruit at higher social levels. This pattern reflects, in turn, a regional phenomena: intergenerational mobility is much lower in Rio de Janeiro and São Paulo than in the states of Minas Gerais, Bahia and Mato Grosso do Sul. The reason is that higher education institutions in the former regions are older, and there is a larger pool of educated families for the recruitment of academics.

We can say, in short, that public institutions outside the main centers, which are also newer, have been a preferred ground for social mobility through a university career. Not by coincidence, appointment requisites for these institutions are less demanding, as expressed in the lower qualification of their staff. But they provide job stability,

retirement benefits, salaries that are fairly competitive, and more secure, than what one could get in the private market outside the top positions in the prestigious careers.

(graphics 2 here)

The modest social origins of so many academics helps to explain why Brazilian professors tend to relate mostly to their own country, with limited international links. A broader explanation is that, as citizens of a continental-size state, Brazilians tend to be more self-centered than people living in small countries, with more lively frontiers⁸. Except of those in the higher academic ranks, they have little contact with institutions abroad⁹. Only 17.3% ever worked with a foreign colleague in a research project, and only 18% went abroad for study or research in the last ten years (the figures for those with a doctor's degree are 41.3% and 59.1 %). When asked, they agree that "connections with scholars in other countries are very important for my professional work" (1.5 in average in a scale of 1 to 5), that "a scholar must read books and journals published abroad to keep abreast of his discipline" (1.3), and that "universities should do more to promote international mobility" (1.2). They are less certain, however, about the need to give to the curriculum of their institution a stronger international focus (2.2).

c. Gender

The process of social mobility associated with the expansion of the professorate is strongly related to the number of women and their distribution among different fields, and other special characteristics. About 40% of the professorate are women, a remarkable figure considering that, still in the sixties, women were a small minority among higher education students (today they are about 40%)¹⁰. The differences in sex correspond, in part, to differences in age and academic status. More than 80% of full professors are men, compared with only 55% of the assistants. Women are not only younger than men in our sample, but they start their careers in average two years earlier. Compared with men, women are significantly more associated with an incongruent occupational position. They remain more at the master level, not getting the doctoral degrees; they are more likely to work full time at the university; and earn significantly less. They are also concentrated in the humanities and in education, while engineering is an almost exclusively masculine field. The main differences among sexes are summarized' in table 6 and graphics 3.

(table 6 and graphics 3)

⁸ In spite of its large territory, Brazil is very isolated geographically, its only busy frontiers being those in the South.

⁹ Important exceptions, which do not appear in our sample, are some universities in the South, such as the Universidade de Santa Catarina and of Rio Grande do Sul, which have a great number of German descents in their ranks, and keep active links with German institutions.

¹⁰ The Carnegie study shows that Brazil in particular and Latin American generally has a much higher proportion of women in the academic profession than other countries.

These data suggest a peculiar pattern of social mobility for women in Brazil. Rather than competing with men in the marketplace and in the traditional careers, they concentrate in the humanities and education, work to move up the academic ladder earning at least their masters' degrees, and get full-time employment in public, mostly federal, universities. The tendency for men, in contrast, is either to try to climb the highest ranks of the academic career or remain outside it altogether, with a part-time job and most of their professional investments outside the academic institutions.

A deeper understanding of these patterns is provided by graphics 4 to 7, which shows the evolution of academic appointments to higher education institutions from the years before 1967 to the present. Before 1967, most professors were hired either in the health or in the basic sciences, with only a small fraction in technology. In the eighties, technology took about 30% of the new jobs, followed by the humanities and the social sciences (together, these two remain the largest group) (graphics 4). In terms of institutions, the federal system expanded until the late seventies, and then stopped hiring new professors, while the private sector took its place (graphics 5). More than 80% of the professors appointed before 1967 were men, but in the 1968-70 the number of women entering the profession was almost 50%. Graphics 6 and 7 show that, while the proportion of women entering the academic profession followed the availability of places in the federal system, the pattern for men was closer to that of the private sector. A possible interpretation is that men take the jobs they can get, while women have more flexibility, and retract from the academic job market if the places available are not the best.

d. Income and social esteem

Table 7 gives the income figures of the professorate by type of institution. The dollar figures are difficult to compare internationally, because of problems of exchange rates and internal costs in local currency. The highest incomes are of those with the highest academic degrees, part time work and in the State of São Paulo - presumably liberal professionals occupying prestige positions in their careers. The typical Ph. D. working full-time earns between ten and 25 thousand dollars a year. At the time of the survey, the lowest salaries were those of the private and state universities outside São Paulo, which is in part a reflection of the limited number of professors with full-time contracts in these places. Still, of those with less than 5 thousand dollars a year, about 40% had full-time contracts, the same percentage as those on the upper bracket (the percentage for the intermediate groups is about 60%).

(table 7 here)

A salary of twenty-five thousand dollars a year in Brazil allows for a comfortable middle-class standard of life, if combined with consulting, other forms of additional work, or in two-income families. However, with inflation rates of twenty to 40% a month, which has been the pattern in Brazil in the last several years, a good salary one month can turn into a totally inadequate one a few weeks later. Real salaries for professors in the federal system have declined in the recent years, because of delayed or

inadequate readjustments for inflation; the same applies to the state systems¹¹. Extended strikes of professors have occurred regularly in the federal system and eventually in the others, leading to short-time salary increases, but creating a climate of lack of motivation and low morale in their institutions. The dissatisfaction of professors with their salaries is expressed on the first two lines of table 7: most professors see their salaries as poor, and worse, they see the future bleaker than the present.

However, the job situation of university professors, and most specially of those in public institution, is better than of other persons with similar educational backgrounds. The salary is declining, but so are most salaries in a period of economic stagnation. And the benefits of job stability, extended vacations, a light work load and early retirement with full salary are impossible to get in the private sector. The complaints and resentment of the academics with their salaries are due not so much to their relative position in society, but to their perception that their social standing is diminishing: social respect for their work is declining, and they do not see themselves as significant influentials. In spite of this feeling of frustration, they do not expect to leave their institutions within the next five years, although many of them think they could do it if they wished. In aggregate terms, this thought is clearly not realistic.

(table 8 here)

e. Between job security and retrenchment.

The general picture that emerges from this data is of a social group that, in a few years, has attained a relatively secure and prestigious position in society, and now feels threatened by declining salaries and low social esteem. For a significant part of the group, their position was obtained without meeting the intellectual and professional requirements which are usually associated with an academic profession. By international standards, most Brazilian academics are not well qualified. Their degrees are insufficient, they are not trained to do research, and they would have difficulty surviving in an environment of increased demand and competition. Although they complain about the salaries, their perception of alternatives is not strong enough to prompt a movement to change jobs. This is a difficult position, leading to a situation of retrenchment which reflects both on the handling of daily professional chores and in the general outlook the professors have about their place in society.

4. Work

a. Working conditions

The usual assumption behind full-time contracts for academics in the universities is that roughly about half the time is dedicated to teaching, and another half

¹¹ Jacques Schwartzman, *Universidades Federais no Brasil: uma avaliação de suas trajetórias (décadas de 70 e 80)*, Universidade de São Paulo, NUPES, Documento de Trabalho 4/93, p. 18.

to research. In most public universities, and in some fields, departments and institutes more than others, there are active groups of professors working intensively in research and teaching. In aggregate terms, however, as indicated in table 9, only in the São Paulo University did the stated time budgets show a similar distribution of time between teaching and research. Teaching occupies most of the time in all other types of institution, except in the private sector where the time spent on non academic activities is slightly higher. When asked directly about the number of actual hours spent on teaching, about half of the respondents declared to teach eight or fewer hours a week, which is significantly lower than what appears in a standardized table¹². The distribution of teaching load is inversely proportional to the academic degree of the professor, and to the time he or she devotes to the institution (full-time professors in public universities teach significantly less than part time or temporary teachers hired by private institutions). There are no significant differences among regions or fields of knowledge.

(table 9 about here)

Table 10 gives the overall evaluation of working conditions in different types of institutions. Brazilian professors are reasonably satisfied with their working climate, but complain about professional benefits and working equipment and resources. The most significant differences are about retirement benefits, which are good in São Paulo and federal institutions, and, bad in other state and private places; and the significantly better intellectual climate and availability of material resources and services at the Universidade de São Paulo¹³.

Generous legislation for Brazilian professors in federal universities and in the state of São Paulo allows for men to retire after thirty, and women after twenty-five of work with full salaries, without significant contributions to retirement funds during their professional life. In recent years, the cost of these retirement benefits was included in the higher education institution's budgets, absorbing about twenty to 40% of all resources available, and raising. This situation is clearly untenable, and cannot be maintained for long. At the other extreme, employees in private institutions are only entitled to a retirement ceiling of ten minimum wages a month (less than US 1.000,00) after thirty-five years of work, and there are usually no private pension arrangements. The situation in different states varies depending on whether their higher education institutions are defined as part of the civil service or not.

The better intellectual climate reported at the São Paulo University, combined with better evaluations on the availability of teaching resources and services, confirms the notion that this is one of the best academic institutions in the country, and one of the best equipped, although their professors are as critical of their academic environment as those in other institutions.

¹² On table 9, whenever the sum of declared working hours by a respondent in a week was more than 40 hours, the values were reduced proportionally to that value; if the sum was less, the difference was attributed to "other activities". Thus, all answers were standardized, for comparison's sake, to the same 40 hours' work week.

¹³ The results about "sabbatical leaves" are misleading, since they are not institutionalized in Brazilian universities, except in very few places.

(table 10 about here)

b. Teaching

Teaching is the main activity of Brazilian academics, and their primary interest. The usual differences among types of institutions apply. Professors at the Universidade de São Paulo are more inclined to do research than the others, but only a few place research alone as their primary interest (table 11). Most of the teaching takes place at the undergraduate level, which, differently from the United States, is not general, but professional education¹⁴. In the São Paulo and federal universities, there is a sizeable combination of undergraduate and graduate teaching, but not in the private and in other state institutions (table 12). The teaching load in institutions with little graduate education is slightly higher, in average, than in others (table 13).

(tables 11, 12 and 13 here)

Teaching is carried on conventionally, more at the undergraduate than at the graduate level. Students are required to attend classes, write papers, make oral presentations and participate in class discussion. Evaluation of students' performance is based on repeated written tests at the undergraduate level, and single tests and papers in graduate courses. Graduate education follows the American, rather than the European tradition. Students have to attend classes, complete a fixed number of credits, and after some point write a dissertation (table 14). Most doctoral programs are concentrated in a few universities - the Universidade de São Paulo, Universidade Federal do Rio de Janeiro, Universidade de Campinas, while masters' programs are more evenly distributed, but almost nonexistent in private institutions.

Additional similarities and differences between graduate and undergraduate education are given on table 15. Above all, students have to learn facts and amass information. Theories, concepts, paradigms and methods are more stressed at the graduate level, but still run in second and third places. Professional competence for problem solving is practically absent as an educational goal, either because universities are removed from professional life, or because professors do not know how to teach it - probably both reasons in combination.

(tables 14 and 15)

Professors are not happy with their teaching work, and complain about the number of courses they have to teach, the size of their classes, their teaching facilities and resources, administrative workload, availability of research funding and non academic professional activities. Some important differences among institutions appear. Professors at the Universidade de São Paulo are less unhappy about their teaching facilities and resources, but complain more about administrative workload; professors in private institutions and São Paulo are more prone to see their non-academic activities

¹⁴ Several questions in the Carnegie distinguished "undergraduate introductory courses", from "other undergraduate" and "graduate and professional", a classification that does not apply to Brazil.

as an asset. They are all favorable to incorporate the student's opinions in the evaluation of teaching activities, something which is in fact seldom done in Brazil, and believe that there should be better ways to evaluate teaching performance. They dislike the pressure to publish, although this pressure is usually not very strong, because of the lack of graduate education and research in the private sector, and the job stability in the Federal system. Interestingly, the Universidade de São Paulo, which is the more research intensive institution in the sample, is also where the pressure to publish is seen as less problematical. Finally, except again at the Universidade de São Paulo, professors believe that teaching effectiveness, rather than research, should be the main criterion for promotion (table 17).

(tables 16 and 17)

Finally, professors are not happy with their students. They see them as not well prepared in language, communication or quantitative reasoning skills; they often do just enough to get by academically, are willing to cheat to get good grades, and are less studious than in the past. This situation of anomie among the student population, as perceived by their professors, is more acute in the private and in the state universities outside São Paulo, which are the institutions where more students come from lower social strata, and have less resources to attend them. In all places, professors feel remote from their students and think that they ought to meet them more often outside the classroom, but it is difficult to imagine what it is actually done about it.

c. Research

More than half of the professors say that their working contracts require research activities, a figure that reaches 91 % for the São Paulo University and 65% for federal institutions. Percentages are also high for those with a doctoral degree (80.2%) and those in the basic sciences (67.8%). The percentage of professors saying that they are involved in some research work is higher than those subject to a formal contract to do it, since they can do research outside the institution where the interview was conducted.

Unfortunately, there is a significant difference between general statements about research work and the reality, as can be seen in tables 19 and 20. Only a third of those who declared to be engaged in research received any kind of financial support in the last three years, and slightly more than 50% had what could be called a "qualified" academic product, as defined on table 19. Of those, 21 % had just one product in the last three years, and 36% one or two. Although the quantity of "products" is a very rough measure of academic achievement, such small numbers do mean that scientific production by Brazilian academics is small. Not surprisingly, there are large differences in scientific production among types of institutions. In the São Paulo university, 54.3 % of the professors had more than one product a year in the last three years, against 27% for federal universities, 8.3% for other state institutions, and 32.2% for the private ones (probably persons doing research in other institutions).

(table 19 and 20 here)

Part of the difficulty in getting research done is related to the limited academic

qualifications of a large section of the professors, and part to the scarcity of research funding. The proportionally large investments in science and technology made by the Brazilian government from the late sixties to the late seventies were drastically reduced in the eighties, while demand increased. For those who reported some kind of financing in the last three years, about half received less than five thousand dollars. The main source of financing is the Brazilian government, and in the second place the researcher's own institution. No researcher receiving grants only from their institution got more than US 5.000 in the last three years, and about half of those receiving from the Brazilian government also remained below that limit (tables 21, 22 and 23). This picture suggests that the possibility of actually doing research in Brazilian universities has been more limited in the last three years than the figures on academic publications suggest. From the humanities and social sciences to technology and health, those who manage to work in teams are more likely to receive support for their work than those who work alone, but their chances are still of less than fifty percent. Not surprisingly, professors who only do research see negative influences in their surroundings, the highest - and justified - complaint being the scarcity of research funding (table 24 and 25).

(tables 21 to 25)

d. service

"Service" translates in Brazil as extension work, and for many years it was usually understood as some kind of assistance work carried on to the benefit of the poor, in terms of health services, legal support, continuous education, teacher training. Students and professors can participate in extension work, and in some cases (more specially in the health sector) it is an integral part of the student's training. More recently, the word begun to encompass also services provided to private clients, business organizations and governments, with some kind of payment. Initially, paid outside consulting and services were seen as infringement of full-time contracts, but today they are widely recognized as important mechanisms to link the universities with their environment, and improve the income of the most entrepreneurial staff. Abuses, of course, can happen, and several universities have tried to regulate how much time their full-time professors can dedicate to extension and other kinds of consulting work, how much of their income can be derived from these activities, and the overhead the university should receive. These limitations, however, are usually not very strict, and are seldom enforced.

The number of professors who report to have been engaged in some kind of service activity is very large, 77.2% of the total. Most believe that services to society are a professional obligation, few consider that services distract them from their main activities, and, for a sizeable group in some fields, they provide a substantial parcel of their income. The main difficulties they find for their service work are the lack of adequate research facilities, and their administrative workload. Their attitude toward service is positive, less in the sciences, and more in the technical professions.

The biggest client for services is the Brazilian government, followed by educational institutions, and finally by private companies and industries (table 26). Here

again, the usual differences apply, although they are not very large. The highest percentage of professors involved in services was at the São Paulo University (88.7%) and the lowest at federal universities (73.2%). Professors engaged in basic sciences had the lowest level of involvement (70.2%), and those in health sciences, the highest (87.2). Not surprisingly, technologists had more contacts with the private industry, those in humanities and education with educational institutions, and those in health with governmental institutions (table 26).

(table 26 here)

Most service work is without economic compensation. Persons in technical professions, engineering and those working in the private sector get an average of 40% of their time spent on services paid; on the other extreme, those in basic sciences are paid less than 20% of the time. More than a half of the professors who report to have been engaged in services see this kind of activity as a matter of economic necessity (53% on the total). This necessity seems more urgent among professionals working in the private sector, and less frequent among professors from the University of São Paulo. There is also a linear, inverse association between academic rank and this necessity. Finally, academics working in the technical and social professions are more willing to agree that they do it as a matter of economic necessity than the others.

(table 27 here)

5. Governance

Governance in Brazilian public universities is molded on the traditional European pattern, with extensive power given to the academic bodies, and the absence of professional administrators and managers except at the lower ranks. All top administrative positions (the Rector, and officers such as the vice-rectors for planning, research, graduate education, undergraduate education, extension work) are recruited among the university's professors. Their activities are controlled by a series of congregations, councils and other collective bodies formed by professors and representatives of students and, sometimes, administrative personnel.

"Co-Gobierno", the equal division of academic power among professors, students and alumni, begun in Latin America with the University Reform movement of Cordoba, Argentina, in 1918, and have existed since then in different forms in most countries in the region. Brazilian public higher education institutions, however, were traditionally controlled by the congregations of the individual schools, of faculties, formed by their full professors, or chair-holders, who used to draw the list of names from which the government nominated the directors, or deans, of each faculty. Rectors were designated in a similar way, and their power was very limited before the 1968 reform legislation, given the strength of the professional schools and faculties.

This condition of oligarchic control was shattered after 1968, when the old chair system was replaced by the departments and institutes, which cut across the traditional faculties. The rector's offices gained importance, while young professors and students gained active voice in the new departments. The 1968 reform was an attempt to make

Brazilian universities more modern, competent and flexible than in the past, and it implemented several ideas that were first tried out in the universities of Minas Gerais and Brasilia in the early sixties. In 1968, Brazil was under a military government, the universities were kept under close surveillance, and the power of rectors, chosen by the government, was strengthened. In the late seventies, as the military regime started to wane, claims for collective participation of students and faculty in the designation of the academic authorities intensified, and, with the new civilian regime instated in 1985, most public universities created mechanisms through which students, faculty and employees could vote, on an equal basis, for the election of their academic authorities. This kind of academic democratization is strongly supported by the professors' unions and student associations, but is resented by important sectors of the professorate as a concession to populism and an abdication of academic values. With a few exceptions, private institutions are on the opposite end, with all decisions taken by those who control the institution, be they the Church, a private foundation or an individual¹⁵. The Universidade de São Paulo chooses its authorities through a complex mechanism which preserves the power of senior professors to nominate the short list from which the state governor chooses the rector, who is, traditionally, the first name.

Brazilian academics see a reasonably clear pattern regarding which decisions are made by the institution's authorities, and which are done with the participation of professors. Central authorities decide about budget, new academic programs and admission standards; professors join in the decisions about matters that relate do them personally: teaching loads, the choice of new faculty and promotion roles.

Institutional comparisons reveal that professors from private institutions perceive their environment as significantly more centralized than those in the public sector, but the pattern in the University of São Paulo is closer to that of private institutions than to the public ones. The explanation is probably related to the fact that participation in institutional affairs in this university is still closely linked with academic rank. As expected, professors feel more influential at the department level than at the others, and professors with doctor degrees or more tend to fell more influential at higher levels.

(table 28 here)

6. Participation and world views: different groups, different perceptions

If a profession is more than a nominal concept, this should be reflected in active participation of its members in some kind of collective entity, which would express their common identity and interests; if they belong to different groups, it is likely that their attitudes and perceptions will also vary. In fact, Brazilian professors participate both in academic institutions and in the National Association of Higher Education Docents, a nationwide union that has its stronger constituency in the federal and state universities outside São Paulo. The graphic on table 16 shows that there are two distinct patterns of participation among Brazilian professors. Participation in unions is stronger among

¹⁵ Legally, all private educational institutions in Brazil are supposed to be non-profit, and linked to a supporting entity. In practice, many of them are run as proprietary, profit-making establishments.

persons with an intermediate level of qualification, working in federal or state, public institutions; while participation in national and international professional and academic associations is strongly correlated with academic rank.

(graphic 9 here)

The survey confirms that the Brazilian professor is as differentiated as the higher education institutions where they work. Based on these data, and on the knowledge about how the higher education system has developed in the last decades, it is possible to classify the professors in the survey along four main types, and then examine if their outlooks actually differ.

Type I is the traditional professor, prestigious names in their professions who occupy the highest ranks in the schools of law, medicine, engineering and dentistry. Law professors typify this group at its best. They dedicate most of their time to their bench, bring their best students to work with them, give magisterial lectures, do not do any systematic research, and do not hold a doctoral degree. They do not know that an "academic profession" exist at all, and are, for all purposes, members of the legal profession. In Brazilian higher education, this traditional type was severely wounded by the elimination of university chairs in 1968, and is being overwhelmed by the other types that emerged in more recent years. For this analysis, we included in this group academics in medicine, law, dentistry and engineering which work in public institutions and do not have a fulltime academic job.

Type II is the younger professor, very often a man, dedicated to his academic career. He works full-time at a good university, publishes regularly, holds a doctor's degree. He has very often studied abroad, speaks more than one language, and has a degree in the basic or the social sciences. He is concerned with social problems and expects to be useful through his expertise. His professional identity is based on his fields of competence and specialization, and on a work ethics grounded on individual competence and freedom to choose his own subjects of research, study and reflection. He incarnates, in short, the ideal of the modern research university and the academic profession. For this analysis, we included in this group those with a doctoral degree working full time in a public institution, outside the fields included in type I.

Type III is the professor, very often a woman in the humanities and education, who got a stable and full-time job in a public institution, but did not have the conditions or the opportunity to reach the standards of professional achievement of type II. Even when her values are similar to those of group II, her practice is different. Her professional identity is not given by her undergraduate degree, as in the traditional professions, nor by her individual achievements as an independent scholar and researcher, as in type II, but to the appurtenance to an institution and a group with whom she shares the daily problems, achievements and routines of academic life. It is in this group of professors where one could find some of the central dilemmas that are common to all processes of professionalization: the tensions between the ideals of the collectivist trade unions and the individualistic liberal professions; the opposition between the values of personal achievement and those of the professional community; and, consequently, the spaces that are open or closed for intellectual growth, the

development of competence and the strengthening of social responsibilities. For this analysis, we included in this group all those with a master degree or less, working full time for a public institution.

Type IV, at last, which is often assumed to be a large group, is the professor who teaches to undergraduates in private institutions, without any kind of job stability. The usual image about this type is of a person having to accumulate long hours in the classroom to earn his living, without any perspective or pretension of academic life and work. Our survey suggests that this type is less common than what one would expect. In the poorer regions, private higher education is not very large. In other places, the teacher in private institutions at night can well be the full-time professor at a public institution during the day, a graduate student, or an active professional in his field. Private education can be better than what one would expect from the absence of graduate education, full-time employment and research, which are the hallmarks of the most prestigious academic institutions. For this analysis, we included in this group all professors working for private institutions, irrespective of other characteristics.

Table 29 gives some general characteristics of the four types, and the subjects' attitudes regarding general issues, the role and the status of higher education in the country, ranked by importance¹⁶. The liberal professionals of type I are mostly men, coming in a significant part from highly educated families. Type III is clearly the more upward mobile group, formed predominantly by women coming from less educated families. Type IV, surprisingly, has the highest percentage of well-educated parents, and is also predominantly male, dispelling the notion that those who work for the private sector form some kind of academic proletariat. Type II occupies an intermediate position.

(table 29)

The third line on table 29 shows a puzzling finding of the survey: when asked about whether academic freedom is protected in the country, 61.6% of the total sample believe it is not. Other tabulations show that these percentages vary strongly with academic rank - the lower the rank, the highest the belief in the absence of protection to academic freedom. Institutional differences are still stronger: 80.7% of those in state universities outside São Paulo (against 42.8% at the São Paulo University) have the same opinion. There is also a strong correlation with sex: figures for women are consistently higher, as shown in table 30.

(table 30)

What is most curious about this question is that, since the end of the military regime in 1985, Brazil has lived a period of complete freedom of expression, and the issue of academic freedom, in its usual sense, has never emerged anywhere. The variations observed on table 30 suggest that this perception, rather than a reflection of

¹⁶ To make the eventual contrasts clearer, we eliminated from table 29 respondents which could fit in two or more types, for instance persons with doctoral degrees in the liberal professions.

reality, is an expression of a general attitude of resentment and mistrust of Brazilian academics regarding the government, which appears more clearly in the sectors that feel more threatened and constrained in their social standing - in one extreme, women at the small state universities (90%), versus, on the other, men at the São Paulo university (37.8%). These differences in gender, more likely than not, are related to the different career patterns of women and men, as discussed before, rather than to an actual situation of oppression on women academics in Brazilian society, which does not seem to exist.

A better understanding of what was meant by “academic freedom” in this context can be achieved through the factor analysis shown on table 31, which brings together several items related to personal influence, institutional management and decision making, academic autonomy and academic freedom. The analysis reveals four clearly distinct factors, one related to autocracy in administration, other to personal influence, and another to academic autonomy. The fourth factor is the one that includes “academic freedom”, which is associated with a concern for a stronger voice for students and more faculty involvement in academic matters. This analysis reveals the real content of the complaint about “academic freedom”: it is not related to actual constraints on the expression of ideas in academic activity, but to a general yearn for more student and faculty activism in academic matters.

(table 31)

Table 29 provides also a general picture of the outlook of Brazilian academics, and the main differences according to the four types. Brazilian academics are mostly concerned with the country's internal problems - basic education, human rights, the economy, social problems. They believe they can contribute to the solution of these issues by strengthening their institutions, and keeping their standards high: they do not endorse lowering the admission standards in their institutions, and are strongly concerned about the priority that should be given to scholarship and research. They give low priority to issues like ethnic conflict, the world economy and arms control, probably for sound reasons: these issues do not affect Brazil directly, and its government could do very little about them anyway.

The consensus among the four groups is high on most items, but there are some clear areas of disagreements as well. We have seen the differences on the belief that academic freedom is not protected. Another item of disagreement is whether the government should keep higher education free for students in public institutions (the current situation) or charge tuition. Although the general tendency in our sample is to support free education, important variations can be observed, going from those with masters' degrees in federal universities (1.5 in a scale of 1 to 5 in favor of free tuition) to full professors in federal and private institutions (3.1). Proposals to introduce tuition in public universities are perceived by many as a denial of the government's responsibility with higher education, and a movement in the direction of bringing higher education under the control of private and elite sectors. The opposite view is that free higher education is an unwarranted public subsidy to the children of upper classes, at the expense of basic education, health and other social needs. In the Brazilian debate, the opposition to tuition in public universities has been a banner of the teacher's unions and student associations, and is usually associated with resistance to policies like evaluation,

institutional autonomy and academic accountability, which are all perceived to foster competition and differentiation, and to run against egalitarian values¹⁷.

In comparative terms, liberal professionals of type I are less interested in scholarship and research, the solution of social problems, the protection of free intellectual enquiry, and less worried about bureaucratic encroachment; they also believe, more than the others, that respect for academics is declining. Politically, this group is much more conservative than the middle-level professionals of type III, who are more concerned with human rights, the environment, social conflicts, AIDS and other health issues, the solution of social problems, defend free tuition in public universities, are less interested in increasing the country's international competitiveness and care less for the contribution of businessmen to higher education. Types II and IV tend to occupy intermediate positions on most items, suggesting that these two groups are much less ideologically minded than the others.

7. Conclusions.

Of the three professional ideal types listed at the beginning, one is conspicuously absent, and there may be two others which were not predicted. What is missing is the Mandarin. A significant part of the Brazilian professors work for the government, but they do not see themselves, and do not actually play the roles of the "key profession", the embodiment of reason, rationality and competence. Rather, they are split in two groups, a smaller one, more qualified, and closer to the academic model; and a larger one, less qualified, and leaning toward the unionized profession. Of the other two types, those in the first, formed by liberal professionals teaching part time, are not members of the academic profession at all, but of their own fields of specialization. The fourth, those working in the private sector, seem to lack a well-defined professional identity. Their links with higher education are weak, not because they form some kind of intellectual proletariat, but probably because their main professional life lies elsewhere, or is less structured and stable than the usual notion of a profession would lead us to expect.

The general conclusion of this analysis is that the academic profession in Brazil is going through a difficult period and it doubtful that the current predicaments will find a satisfactory solution in the near future. Only a small section of the professors interviewed, those in Type II, would fit a stricter definition of an academic profession. Those in type I are more linked to their specific professions than to the academic world, and the same can be said of type IV. The most difficult situation is of those of type III. Their condition of "imperfect professionalization" generates high levels of frustration and distortion. They are locked within the higher education profession by their gains in terms of salaries, job stability, retirement benefits and social prestige, which are the result, in many cases, of a rapid process of social mobility. They are unable, however, for personal and institutional limitations, to get the qualifications and resources necessary to a full academic life, and tend to respond with political activism and

¹⁷ For an overview, see S. Schwartzman, "Brazil: Opportunity and Crisis in Higher Education", *Higher Education*, 17, 1 (99-119), 1988.

mistrust.

The conventional expectation about these "imperfections" of the academic profession is that, with time, they would be corrected and everybody will adjust to the academic mold. The reality seems different. Higher education, everywhere, is being developed in all kinds of institutions by all kinds of professionals and attending all kinds of students. The type II academic is probably not a dying species, but it is very unlikely that it will end by absorbing the others. The full implications of this plurality and dispersion are still to be ascertained.

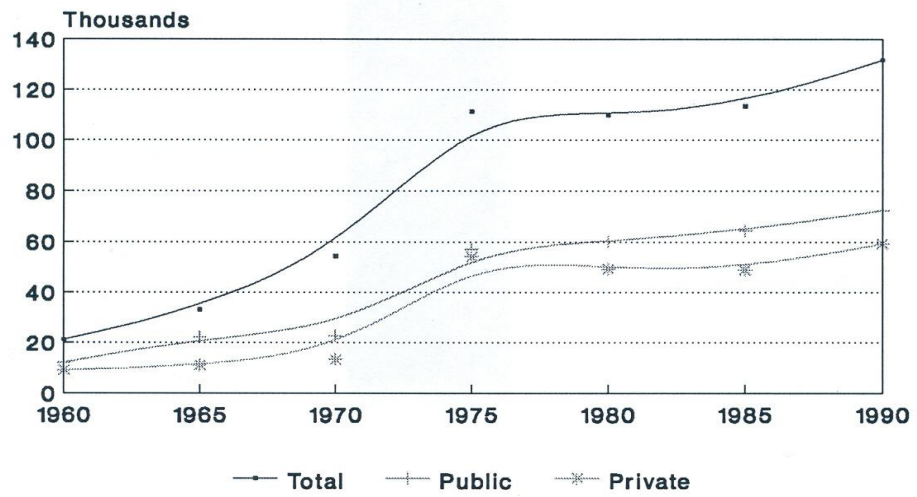
Table 1. Number of institutions, enrollment, number of teachers, full-time teachers and teachers with graduate degrees, by region and legal status of institutions (educational census data)

	number of institutions	% of total enrollment	% of teachers	% of full time teachers.	% with a master's or a doctor's degree
Region:					
North	2.8	3.2	3.0	4.6	2.2
Northeast	11.2	15.8	16.7	22.0	15.5
Southwest	63.2	56.3	55.2	46.6	61.4
South	14.7	18.4	18.8	18.8	15.7
Center West	8.2	6.4	6.3	8.0	5.1
Total	100%	100%	100%	100%	100%
Legal Status					
Federal	6.3	20.5	32.6	60.3	46.6
State	9.2	12.9	17.9	26.0	25.8
Municipal	9.4	5.3	3.7	2.0	1.4
Private	75.1	61.3	45.8	11.7	26.2
Total	100%	100%	100%	100%	100%
Total number	893	1,565,056	133,135	57,728	46,758

Source: data from the Ministério da Educação, Serviço de Estatística da Educação e Cultura, 1989.

Graphics 1

Brazilian Professorate 1960-1990



Source: IUPERJ,NEES,Banco de Dados/Grad

Table 2: Doctoral degrees and full-time contracts by field (survey data).

	% with doctoral de- grees or full professorships	% with full-time contracts	% of "errors"	Total (N)	
				%	N
Physical sciences	48.0	83.7	41.7	12.9	123
Biological Sciences	31.7	73.3	55.1	11.0	105
Social Sciences	27.1	52.9	39.7	7.3	70
Humanities	28.7	59.1	41.2	14.3	137
Engineering	15.5	33.6	39.7	14.0	134
Health professions	38.7	46.8	53.4	19.5	186
social professions	29.9	38.6	44.0	9.2	88
technical professions	16.7	40.6	44.4	3.2	34
education	16.0	55.0	50.6	8.4	80
Total	30.2	54.2	46.0	100%	964

*Percentage of doctors with full time employment plus non-doctors with part-time employment on the total

Table 3: Doctoral degrees and full-time contracts by type of institution

	% with doctoral degrees and full professorships	% with full-time contracts	% of "errors"*	Total (N)	
				%	N
State (São Paulo)	68.5	74.8	16.4	15.5	149
State (others)	8.4	70.6	69.2	11.1	107
Federal	30.3	72.5	67.5	41.8	403
Private	18.0	15.1	23.9	31.6	305
Total	30.2	54.2	46.0	100%	964

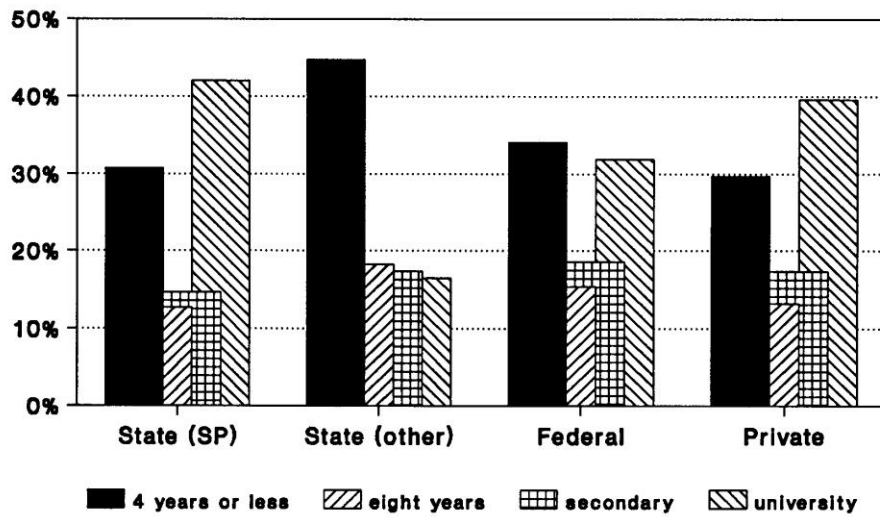
*Percentage of doctors with full time employment plus non-doctors with part-time employment on the total

Table 4. Percentage of professors with full-time and stable contracts, by institution and academic degrees.

	State (SP)	Sate (others)	Federal	Private	Total
Undergraduate	30.8%	60.9%	95.2%	16.0%	47.2%
Specialization	40.0%	77.5%	97.1%	24.3%	63.4%
Masters Degree	32.0%	82.4%	95.8%	26.9%	70.4%
Doctor's degree	64.3%	62.5%	93.6%	29.4%	71.8%
Associate or full professor	85.5%	100%	96.3%	50.0%	82.9%
Total	59.1%	74.5%	95.5%	24.0%	65.5%
(N)	(149)	(106)	(396)	(287)	(938)

Table 5: Percentage of earnings deriving from professional work (averages):			
	From this institution	from other academic sources	from non-academic work
A) Type of Institution:			
State (São Paulo)	77.4	5.8	15.9
State (others)	77.0	6.2	16.0
Federal	14.5	5.5	19.3
Private	37.9	16.1	42.4
B) Fields of knowledge			
Basic and Natural Sciences	80.3	8.3	10.7
Social sciences and professions	50.3	9.3	34.1
Humanities and literature	72.4	10.9	15.3
Technology	50.2	11.6	37.6
Health sciences and professions	52.1	5.7	38.4

The Brazilian Professoriate fathers' education and type of institution

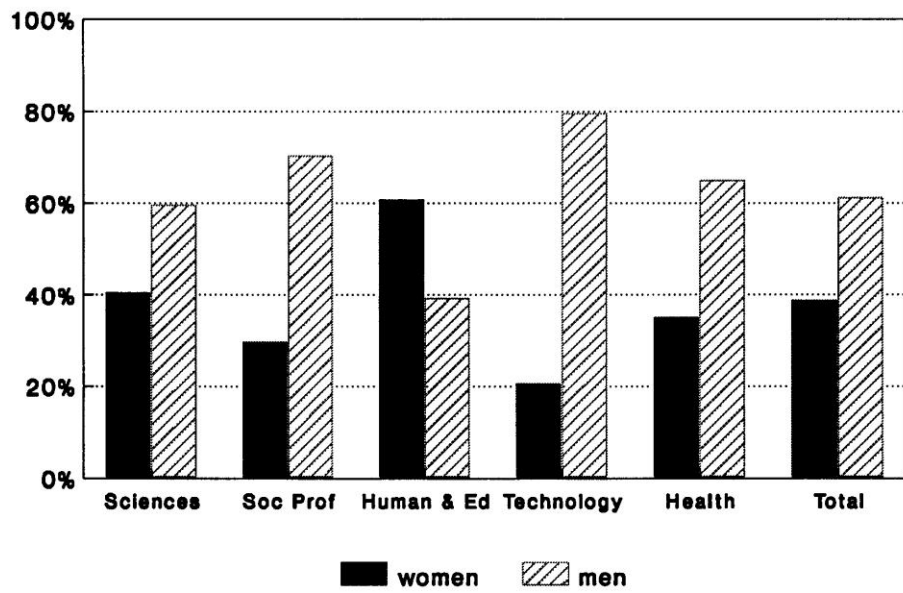


type of Institution

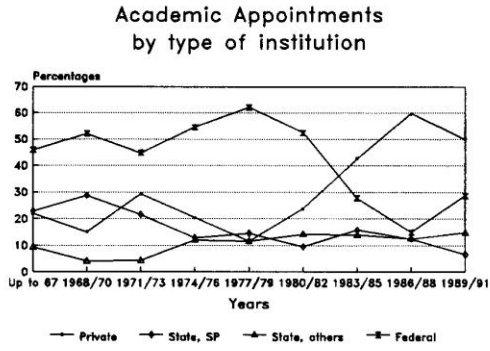
Table 6: Age, year when started academic work, age when started, income and academic degree, by sex		
	Women	Men
Year of birth	1947.39	1950.72
year started academic	1979.58	1977.56
age when started work	28.87	30.07
% with less than US\$10,000 a year	67.9%	47.0%
% with more than US\$ 25,000 a year	6.0%	16.0%
% with full-time contracts	66.6%	36.5%
% with masters' degrees (no Ph.D)	38.9%	23.2%
% with doctor's degrees	20.0%	22.6%
% of "errors"	53.1%	41.5%

Graphics 3

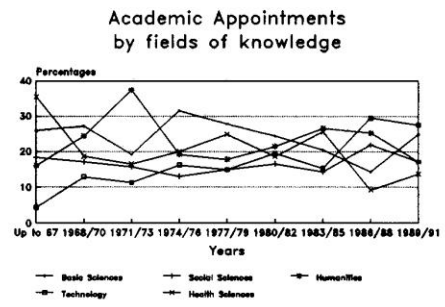
Fields of Knowledge, by sex



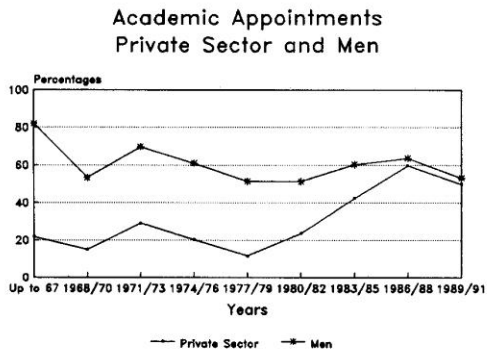
Graphics 4



Graphics 5



Graphics 6



Graphics 7

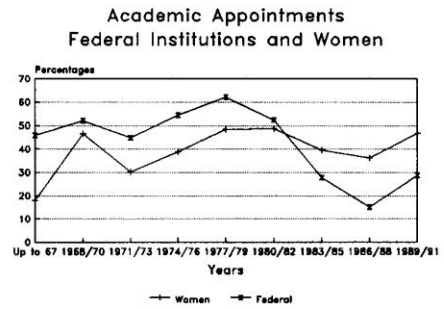


Table 7: Yearly income from academic work (percentages in each class)				
	Up to US\$5,000.00	between 5 and 10,000	between 10 and 25,000	more than 15,000
By institutional setting				
State (SP)	10.1	20.1	51.0	12.1
State (other)	47.1	42.3	7.7	2.9
Federal	23.4	32.7	35.3	8.6
Private	31.8	22.4	29.2	16.6
By academic degree:				
undergraduate	44.2	24.9	18.8	12.2
specialization	41.2	32.0	21.5	5.0
Master's degree	24.0	40.7	28.4	6.9
Doctor's degree	6.8	18.4	56.8	18.0
Full or associate professor	7.9	15.8	46.1	30.3
Total	26.6	28.5	32.8	12.2

Table 8: evaluation of income earned, job attitudes and social standing of the profession, by institution (mean values)

	State (SP)	State (others)	Federal	Private
How would you rate your own academic salary? (1: excellent; 4: poor)	3.2	3.4	3.3	3.1
How would you rate the prospects of improvement in the coming five years (1-4)	3.5	3.8	3.6	3.2
How do you evaluate your retirement benefits? (1-5)	2.3	3.8	2.6	4.2
Academics are among the most influential opinion leaders (1: agree; 5: disagree)	3.2	3.2	3.1	3.2
respect of academics is declining (1-5)	2.0	1.4	1.7	2.0
If you left this institution, how easy it would be for you to find another professional, non academic alternative (1: very easy; 5: very difficult)	2.2	2.7	2.4	2.2
If you left this institution, how easy it would be for you to find another professional, academic alternative (1-5)	1.9	2.8	2.4	2.5
How likely is it that you will leave this institution in the next five years? (1: very likely; 5:very unlikely).	4.1	3.3	3.9	3.4

Table 9 - Average number of working hours* a week when classes are in session, by type of institution

	State (SP)	State (other)	Federal	Private	Total
Teaching	12.6	17.7	16.2	13.4	14.9
Research	12.4	7.1	8.6	5.3	8.0
Services	3.9	3.9	4.0	5.3	4.0
Administration	4.7	4.2	4.8	2.1	3.9
other activities	6.2	6.9	6.3	13.8	8.7

* Answers adjusted to a standard 40 hours' week. When the total of hours reported was less than 40, the difference was attributed to "other activities"; when it was more, values were proportionally reduced to fit the total of 40.

Table 10: Evaluation of Working Conditions (average scores)

	State (SP)	State (other)	Federal	Private	Total
a) Professional side benefits (1: excellent; 2: good; 3: regular; 4: bad, does not have it)					
Retirement Benefits****	2.26	3.68	2.58	3.72	3.01
Sabatical leaves****	3.28	2.90	2.72	3.50	3.06
Support for academic travel****	3.56	3.37	3.73	3.77	3.68
fellowships and incentives for further studies***	3.06	3.04	3.17	3.36	3.19
other benefits (medical, housing, family education, etc.)****	3.53	3.81	3.92	3.63	3.64
b) academic environment:					
intellectual climate****	2.18	2.69	2.41	2.32	2.39
relationships between academics and the administration*	2.59	2.67	2.45	2.56	2.53
morale among the academics***	2.68	2.85	2.72	2.51	2.66
clarity of institutional goals	2.70	2.79	2.74	2.60	2.70
sense of community**	3.02	3.00	2.95	2.76	2.90
c) material resources and services:					
lecture rooms	2.72	2.75	2.83	2.69	2.76
technical resources for teaching****	2.90	3.24	3.29	2.94	3.12
laboratories****	2.98	3.13	3.37	2.94	3.12
research equipment and instruments****	2.92	3.45	3.49	3.30	3.34
computer facilities**	2.88	3.12	3.17	3.17	3.12

Table 10: Evaluation of Working Conditions (average scores)

	State (SP)	State (other)	Federal	Private	Total
library****	2.06	3.26	3.06	2.77	2.84
offices for faculty***	2.80	3.26	3.10	3.05	3.06
secretarial support	2.84	2.91	3.11	2.61	2.89

significance: ****: < .0001 ***: < .001 ** < .01 * < .1

Table 11: Your interests lie primarily in teaching or research? (percentages)

	State - SP	State - other	Federal	Private	Total
primarily in teaching	9.72	26.42	20.90	22.61	20.39
both, but leaning toward teaching	36.11	43.40	40.80	44.90	41.72
both, but leaning toward research	49.92	29.25	36.82	29.94	35.40
primarily in research	6.25	0.94	1.49	2.55	2.48

Table 12: Which of the following represents your teaching responsibilities at this institution?

	State - SP	State - other	Federal	Private
entirely undergraduate	36.7	85.0	54.3	78.0
some undergraduate, some graduate	54.0		38.9	17.3
entirely graduate	4.0	7.5	2.2	1.6
not teaching this year	5.3	7.5	4.6	3.1

Table 13: During this academic year, when classes are in session, approximately how many hours a week to you spend teaching at this institution

	Group Instruction		Individualized Instruction	
	N	average	N	Average
State, SP	142	8.7535	135	4.3926
State, other	101	12.3465	86	6.4070
Federal	383	10.7415	346	5.7572
Private	301	11.9236	199	5.1156

Table 14: As a general rule, which of the following activities do you require of your students for successful completion of a course? (percentage requiring)

	Undergraduate (n=921)	Graduate (n=324)
attend classes regularly	77.7	64.6
write several short papers	55.0	40.8
write a major paper	47.7	67.0
make a formal oral presentation	41.8	63.6
participate actively in class discussion	66.3	68.8
take a single examination	10.2	19.4
take two or more examinations	65.9	30.9
no specific requirements	1.8	1.9

Table 15: What do you think students should learn in your courses? (percentages stating it as first priority)

	undergraduate	Graduate
Facts, information	49.6	37.7
Theories, concepts, paradigms	23.5	29.3
Research methods	4.0	16.0
professional competence for problem solving	1.1	5.2
others	10.7	11.7

Table 16: Please indicate the way your teaching is influenced by the following circumstances (1, strong positive; 5; strong negative influence)

	State, SP	State, other	Federal	Private	Total	significance(1)
The number of course I am assigned to teach	2.66	3.16	2.64	2.77	2.69	**
the number of students enrolled in my classes	3.05	3.32	2.96	3.29	3.12	*
teaching facilities and resources here	2.89	2.97	3.44	2.90	3.13	****
my administrative work	3.84	3.53	3.38	3.22	3.43	****
the availability of research funding	3.20	3.65	3.60	3.25	3.43	**
my non-academic professional activities	2.38	2.80	2.59	2.27	2.48	**

Table 17: Statements about teaching conditions at the institution (1: agree; 5: disagree).

	State, SP	State, Federal	State, other	Federal	Private	Significance
*student opinions should be used in the evaluation of teaching effectiveness	1.80	1.68	1.65	1.50	1.65	*
the pressure to publish reduces the quality of teaching	3.52	4.22	4.07	4.06	3.98	****
we need better ways to evaluate teaching performance	1.89	1.68	1.70	2.05	1.84	**
teaching effectiveness should be the primary criterion for promotion of faculty	3.46	2.59	2.65	2.33	2.67	****

(1) Significance: ****: <.0001 ***: <.001 **: <.01 *: <.1

Table 18: Please give your opinion about the ability and performance of the undergraduate students of your institution (1: agree; 5: disagree)

	State, SP	State, others	Federal	Private	Total	significance (1)
they are adequately prepared in written and oral communication skills	4.17	4.43	4.33	4.41	4.34	
they are adequately prepared in mathematics and quantitative reasoning skills	3.57	4.0	3.92	4.08	3.05	**
they do just enough to get by academically	2.88	2.05	2.58	2.28	2.47	****
they are willing to cheat to get good grades	3.21	2.84	3.14	2.56	2.94	****
they are more studious than the students I had five years ago	3.76	4.22	3.75	4.16	3.0-	***
faculty should spend more time with students outside the classroom	2.06	2.05	1.94	2.05	2.01	

(1) Significance: ****: <.0001 ***: <.001 **: <.01 *: <.1

Table 19. Research activity, by institutional context and academic degree.

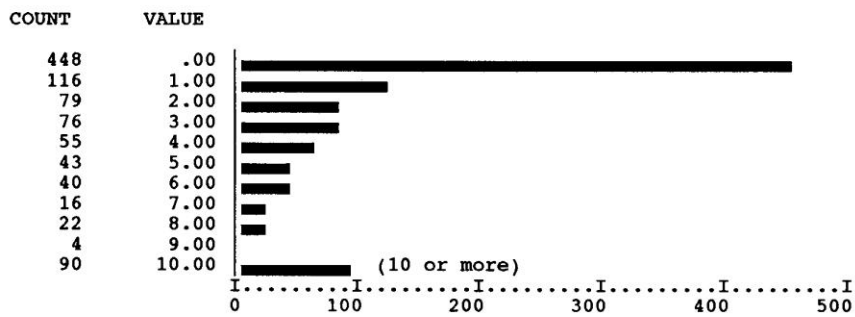
	The contract with the institution requires research	Is engaged in some kind of research	In the last three years		
			received some kind of financial support for research	had one or more qualified scientific product(*)	had one or more product of any kind (**)
Total	52.9%	63.8	31.5	54.7	75.9
Institutional context					
State (SP)	91.0	93.2	49.7	82.8	94.7
State (other)	44.0	53.8	20.6	38.5	64.2
Federal	65.0	72.8	33.8	57.2	80.3
Private	22.9	41.4	23.4	43.7	65.4
Academic degree					
undergraduate	30.2	42.9	14.7	37.6	59.0
specialization	31.0	40.7	11.6	33.0	63.3
master's degree	64.3	70.0	61.3	83.7	96.2
Doctor's degree	80.2	91.6	61.3	83.7	96.2
Associate and full professor	61.8	77.3	42.7	76.2	86.4

* scholarly books authored, articles in academic books or journals, patents secured, artistic work performed or exhibited, video or film produced.

** all of the above, scholarly books edited, research reports, papers presented to conferences, professional articles for newspapers and magazines, computer programs for public use, and others.

TABLE 20: SCIENTIFIC PRODUCTS IN THE LAST THREE YEARS

a) Qualified Products



b) Total

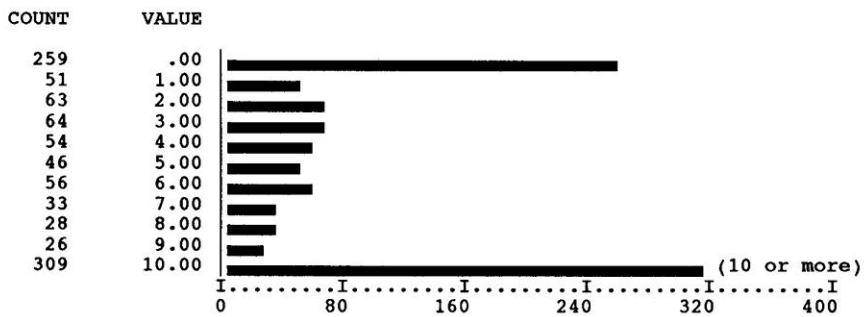


Table 22: Source of financing: Multiple answers):

	Total	%
From the institution where I work:	133	34.4
From Brazilian govern. agencies	237	61.2
From Brazilian companies	35	9.8
From Brazilian private foundtions	23	5.9
From international agencies	35	9.0
From foreign governm agencies	39	10.1
From multinational companies	20	5.2
From foreign private foundations	13	3.4
from other sources	15	3.5

Table 23: Grant values for those receiving from one source only (main sources):

	Own Institution	Brazilian Government
less than US 5.000	100%	48.7
between 5 and 24.999		33.0
between 25 and 49.999		6.1
more than 50 thousand		7.8
N	17	110

Table 24: scientific production and financial support, by organization of research work

	Works in research in teams	Does individual research	does not research now	Total
Scientific production with financial support	41.9%	18.0%	3.4%	24.9%
scientific production without financial support	29.5	46.9	26.9	31.0
no scientific production in the last three years	28.6	35.2	67.7	44.1
Total (100%)	465	128	327	920

Table 25: Indicate the way your academic research is influenced by the following circumstances (mean scores: 1 - strong positive influence: 5 - strong negative influence)

the availability of research funding	3.54
facilities and resources for research here	3.34
the number of courses I am assigned to teach	3.16
the kinds of courses I am supposed to teach	2.59
the number of students enrolled in my classes	3.11
the quality of students available as research assistants	2.76
the amount of student advising I do	2.84
my non-academic professional activities	2.90
my administrative work	3.60
valid cases:	545

Table 26: With which kinds of organizations have you worked in the past year (includes paid and unpaid consulting work, public and voluntary service) - multiple responses		
	N	%
Business, Industry	223	30.49%
Educational Institutions	341	47.30%
Local Government	318	44.11%
National Government	206	28.57%
Private, social service	62	8.60%
International govern bodies	39	5.41%
other int. institutions	38	5.27%
other	98	13.59%
TOTAL	721	100.00%

Table 27: Services and extension work

	does not provide services to institutions	believes that faculty has an obligation to apply knowledge to problems of society	services are a distraction which competes with essential work	paid consulting work is economically necessary	service is important for faculty evaluation
Type of Institution					
State, SP	11.3%	64.2	11.9	25.2	39.1
State, other	22.2%	77.1	19.3	34.9	35.8
Federal	26.8	68.1	13.4	31.9	38.9
Private	23.9	67.0	10.4	41.2	29.6
Fields of knowledge					
basic sciences	29.8	58.3	14.5	21.1	28.9
social sciences	25.1	74.7	12.0	59.9	38.0
humanities	20.1	62.1	9.1	25.1	32.9
technology	20.5	77.1	10.8	53.0	34.9
health	12.8	73.4	17.6	31.4	45.2

Table 28: Centralization, decentralization and personal influence in academic governance

I - How decisions are made in your institution? (average scores: 1: control by top administrators; 5: control by faculty)

	State (SP)	State (others)	Federal	Private	Total
selecting key administrators	2.3	3.8	3.5	2.3	3.0
choosing new faculty	3.3	4.1	3.7	2.9	3.4
making faculty promotion and tenure decisions	2.8	3.1	3.0	2.2	2.8
determining budget priorities	1.6	1.8	1.6	1.4	1.6
determining the overall teaching load of faculty	3.5	3.7	3.8	3.2	3.6
setting admission standards for undergraduates	2.2	2.5	2.1	1.9	2.1
approving new academic programs	1.9	2.1	2.0	1.8	1.9
index of centralization*:	2.6	3.0	2.8	2.2	2.6

II - Personal influence (1: very influential; 4: not at all influential)

at the level of department of similar unit	2.3	2.1	1.9	2.3	2.1
at the level of the faculty or school	2.9	2.5	2.6	2.8	2.7
at the institutional level	3.3	2.9	3.1	3.2	3.2
index of influence*	2.6	3.0	2.8	2.2	2.6

* These indexes were calculated by adding the answers to the respective items, and reducing them to a 1-5 scale.

Table 29: Attitudes of academics according to four types.

	Type I	Type II	Type III	Type IV	Total	Signific ance
<i>General characteristics of the groups:</i>						
% of males	86.4	64.2	45.2	69.5	60.4	
% of fathers with higher education	36.3	36.7	29.0	37.4	33.8	
% that believe academic freedom is not protected	50.0	44.2	62.5	76.4	60.7	
<i>What the government priorities should be:</i>						
Basic Education	1.10	1.04	1.06	1.06	1.06	0.44
Human Rights	1.50	1.40	1.27	1.27	1.32	0.00
Environment quality	1.37	1.35	1.34	1.34	1.34	0.96
Racial, ethnic and religious conflicts	1.67	1.62	1.50	1.54	1.56	0.15
Population growth	1.68	1.68	1.59	1.51	1.60	0.09
World Food Supply	1.91	1.90	1.95	1.91	1.91	0.66
AIDS and other health issues	1.75	2.08	1.85	1.91	1.91	0.01
World Economy	2.31	2.41	2.34	2.23	2.32	0.15
Arms control	2.48	2.39	2.46	2.22	2.38	0.02
<i>Priorities for higher education:</i>						
Promoting scholarship and research	1.53	1.23	1.34	1.42	1.32	0.00
helping to resolve basic social problems	1.50	1.37	1.27	1.35	1.34	0.04
Protecting free intellectual enquiry	1.69	1.49	1.49	1.42	1.49	0.03
Preparing students for work	1.43	1.74	1.51	1.66	1.59	0.00

Table 29: Attitudes of academics according to four types.

	Type I	Type II	Type III	Type IV	Total	Significance
strengthening international competitiveness	1.71	1.74	1.82	1.78	1.78	0.65
Preserving cultural heritage	2.02	1.98	1.90	1.83	1.91	0.25
Educating students for leadership	2.14	2.08	2.23	2.24	2.19	0.25
life-long learning for adults	2.20	2.51	2.18	2.10	2.24	0.00
<i>Status and role of higher education in the country</i>						
individuals and business should contribute more	1.41	1.68	1.94	1.62	1.73	0.00
Respect for academics is declining	1.62	1.68	1.68	2.05	1.77	0.00
effectiveness is threatened by bureaucracies	2.12	1.89	1.92	2.11	1.98	0.15
high education should be available to all that qualify	2.06	2.12	2.27	2.01	2.14	0.31
government should provide free tuition to all	3.06	2.09	1.86	2.49	2.19	0.00
institutions are subject to special interest groups	2.58	2.51	2.21	1.81	2.21	0.00
academics are influential opinion leaders	3.35	3.25	3.10	3.25	3.20	0.51
admission standards should be lowered for disadvantaged students	3.92	4.33	4.25	3.78	4.11	0.00
Total	80	177	300	203	760	

Graphic 9

Participation in Associations by academic degree

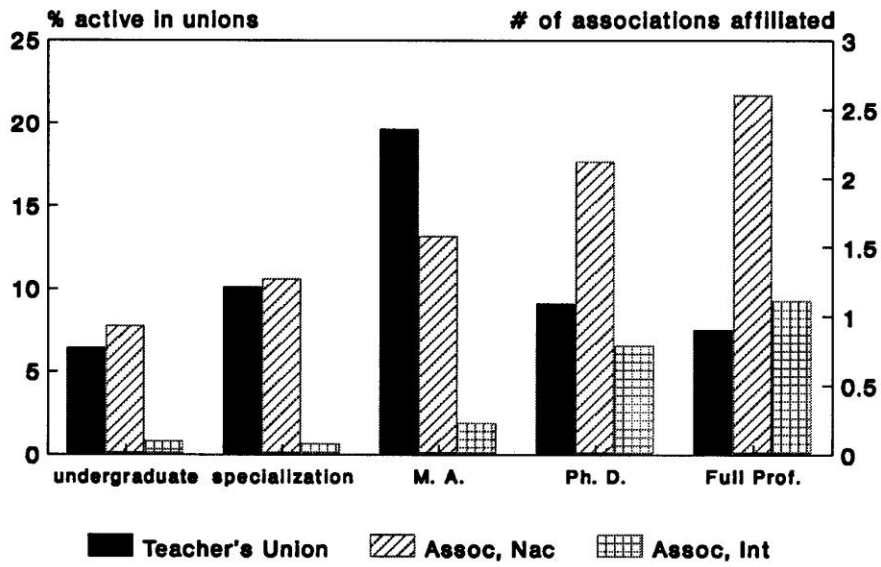


Table 30: Percentage who believe that there is no ample protection for academic freedom in Brazil

	State (SP)	State (other)	Federal	Private	Total
Women	52.1	90.0	65.3	75.8	69.8
Men	37.8	71.9	47.3	69.6	56.2
Total	42.8	80.7	55.0	71.6	61.6

Table 31: Institutional Organization of Academic Activities (factor analysis, varimax rotation)

	Factor I: autocratic administra- tion	Factor II: Personal Influence	Factor III: Autonomy	Factor IV Freedom in teaching
The administration is often auto- cratic (57D)	-.76	-.06	.02	.21
Top-level administrators are pro- viding competent leadership (57A)	.75	.08	-.01	.01
Communication between the faculty and the administration is poor (57C)	-.75	-.04	.00	.11
I am kept informed about what is going on at this institution (57B)	.63	.33	.01	.01
The administration supports academic freedom (57G)	.58	.10	.17	-.17
has influence at the level of fac- ulty or school (56B)	.15	.89	.04	-.04
has influence at the institutional level (56C)	.19	.81	-.03	-.01
has influence at the department level (56A)	.05	.79	.12	-.07
Freedom to determine the con- tents of courses (58A)	.01	.07	.74	.06
Freedom to chose any topic for research (58B)	-.02	.01	.73	-.18
Freedom to set standards for grading students (58C)	.06	.02	.71	-.01
Students should have a stronger voice in determining policy that affects them (57F)	-.11	.04	.07	.81
Academic freedom is strongly protected in this country (59)	.05	.11	.25	-.59
Lack of Faculty involvement is a real problem (57E)	-.48	-.07	.04	.52