The Future of Higher Education in Brazil*

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The modernization of Brazilian economy and society cannot be achieved without adequate educational policies. It will not be possible to build a modern, internationally competitive economy, capable of incorporating and developing new technologies, productive processes and organizational methods, with a semi-illiterate population, a deteriorated secondary education and a higher education sector in permanent state of crisis. The Brazilian government has a diagnostic about the country's economic problems)) inflation, low productivity and overprotection of the industrial sector, uncontrolled public expenditures)) and conviction about the policies needed to redress them. There is no consensus about the ways the government is tackling these problems, but there is a broad understanding that they point to the right direction. There is no similar consensus in the field of education, neither within the government nor among opposition parties and sectors.

This article deals with higher education, and intends to discuss its perspectives in a time horizon of ten to twenty years. It assumes that a good higher education sector is indispensable for scientific and technological development, for increasing the quality of human capital and for the upgrading of general education in na country. Basic education, which all agree is the priority, cannot be improved at the expense of public support to higher education.

Current situation

Brazil has about 1.5 million students in higher education institutions, corresponding to around 13% of the age cohort, enrolled in 83 universities, 720 independent schools and 67 federations throughout the country. Most students are in private, and half in non-university institutions[1]. The current legislation governing higher education is from 1968, when total enrollment was about three hundred thousand. The 1968 reform was an attempt to copy the American model, through the introduction of graduate education, the credit system, departmental organization and the assumption that the whole sector would evolve toward a uniform model of research universities. This system was supposed to replace the old model based on professional "faculties" (whether joined in universities or not), leading to nationally recognized degrees. The number of students underwent a rapid expansion in the 1970's, coinciding with a period of economic growth and urbanization, and has stagnated since the early 1980s (table 2). Most of the expansion occurred in private, non-university, non-research institutions, moving the system further and further away from the model underlying the 1968 legislation. It is possible to describe the current state of higher education in terms of how it carries the different roles it is supposed to play in a modern society:

[1]Data from the Ministry of Education, 1988. "Independent" schools are institutions teaching one or a few courses, such as Law, or economics. Federations are indendent schools under the same administration, but without university status. The difference between university and non-university institutions affect some of their administrative and academic prerogatives, but not the degrees granted to the students, which are equal from a legal point of view.

Education for the liberal professions (law, medicine, dentistry, engineering). This is the more traditional sector of higher education in Brazil. Teaching is organized around independent "schools", or faculties, many of them dating from years before the creation of Brazil's first universities in the 1930s. The more traditional schools have maintained high degrees of independence within the universities in spite of the centralizing tendencies built into the 1968 reform; they have also kept small the number of students admitted every year. Data for 1988 show that 36% of the applicants to higher education institutions tried to get into these professions, which had only 16% of the places, and graduated 22% of the students in the previous year. as indicated in table 3[2].

The relative ability of many courses in the traditional professions to resist the reorganization of the 1968 reform and the effects of massification preserved some of their traditional qualities, which does not mean that they were not affected. As demand increased, new courses were created with lower standards, catering to students coming from lower social and academic backgrounds, while the classic model of the liberal professions begun to give way to new forms of salaried work for medical doctors, engineers, lawyers and similar activities. This is clear in the medical professions, with the scarcity of high paying private clients, the expansion of social welfare and the establishment of private health companies, which provide today the bulk of the working opportunities in the health sector[3]; similar tendencies are likely to be occurring in other fields.

There is some consensus that the quality of these courses has come down in the last several years, although it is difficult to substantiate it. One consequence of the resistance of traditional schools to the 1968 reform is that few of them can boast today significant research activities. With a few exceptions, most of their professors are part-time practitioners, even in the best schools of dentistry and medicine, and more so in the schools of law and engineering[4]. In spite of the country's

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[2]Data from the Serviço de Estatística da Educação e Cultura, Ministry of Education, recodified. The division among different types of careers was based only on the courses' denominations. A private publication, *Guia do Estudante* (São Paulo, Editora Abril, 1990) lists 90 institutions with providing post-secondary technical courses, 38 of which in the state of Estado de São Paulo, and 60 in the field of data processing.

[3]See Maria Cecília Donnângelo, editor, *Condições do Exercício Profissional de Medicina na Área Metropolitana de São Paulo*, Universidade de São Paulo, Departamento de Medicina Preventiva, 1983, mimeo.

[4]Data for the Universidade de São Paulo, the leading academic research institution in the country, are telling. In the Law School only 13% of the professors had full-time contracts in 1989. There are large differences among schools of medicine and engineering depending on whether they are located in the city of São Paulo or in a small campus in the state's interior. In the medical school in São Paulo 32% of the professors had full-time contracts, as against 90% in the Faculdade de Medicina de Ribeirão Preto. The Escola Politécnica (engineering) had 54% of its professors with full-time

obvious need for health professionals and engineers, the market for their skills has stagnated, and there is a strong pressure from professional corporations against the creation of new courses or the establishment of short-term specializations.

Elite education. In the 19th century Brazilian elites used to send their children to the law schools and, to a lesser degree, to the schools of medicine and engineering in the cities of Rio de Janeiro, São Paulo, Salvador and Recife. The richest sent their sons to Portugal, and later to France. The opportunities for cultural life, political contacts and the creation of personal networks in the cities compensated for the usually low quality of the education received in the schools. Once graduated, the young bachelors moved quickly into high public offices, started political careers or took responsibility for the management of their family's property and business.

The gradual expansion of higher education in this century diluted this function of elite formation and increased the regional character of higher education institutions, while the professional and scientific content of many institutions slowly improved. The federal universities that exist today in all state capitals (and the state universities in São Paulo) are natural passage points for the local elites, but have not kept the prestigious images that surrounded the law schools of São Paulo and Pernambuco, or the engineering school in Rio de Janeiro of last century. There is nothing in Brazil occupying the places of the French *Grandes Écoles*, the Ivy League in the United States or Tokyo University in Japan. Some institutions in São Paulo, like the more traditional units of the Universidade de São Paulo or the business school at Fundação Getúlio Vargas, play a similar role at the state level. The Instituto Tecnológico da Aeronáutica, an engineering school maintained by the Air Force in São José dos Campos, was the elite institution for the education of scientific and entrepreneurial leadership in the 1950s and 1960s, a place that it seemed to have lost in the last twenty years.

There has been some recent attempts to recreate this role of national elite formation, but without success. The José Sarney government created a National School of Administration in Brasília, trying to copy the French *École National d'Administration*, a project that seems to have attracted the interest of some circles in the current Collor government. The promise that the students graduating from this school would be hired to top positions in public administration attracted at first many candidates, which were later frustrated in their hopes. It does not seem possible to establish a *grande école* in the city of Brasília, within the public bureaucracy, when most of the talent is in universities outside the capital[5]. The other attempt is that of the Universidade de Campinas, a public institution

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contracts, compared with 79% in the Engineering School in São Carlos 79%. For the three dentistry schools belonging to the Universidade de São Paulo in São Paulo, Bauru and Ribeirão Preto, the percentages are 21%, 76% e 62%, respectively.

[5]This school of administration was an obvious attempt to reproduce in broader scale the experience of the Instituto Rio Branco, the prestigious school of diplomacy maintained by the foreign service. There is no published evaluation of the Instituto Rio Branco, besides its reputation. The quality of the foreign service is much higher than most other sectors of Brazilian public administration, and the Institute has had a central role in the recruitment and socialization of diplomats. But the Institute does

in the state of São Paulo, which is going forward in a drive to recruit its students nationally, to upgrade its faculty and establish itself as the country's leading research university. There is little doubt that the Universidade de Campinas has a better change of becoming a national center for elite education than any project carried on by the Federal Government in Brasília.

General Education. Brazilian higher education followed the tradition of continental Europe)) mostly French and Italian)), of professional qualification of a small elite. Until the fifties, it was still possible for the elite to attend public and private secondary schools of good quality, and to be a teacher on one of these schools was a prestigious activity. Secondary education was considered enough for most sectors of the middle and high classes, and particularly for women. Middle-level education was stratified between the traditional secondary schools, with a curriculum based on the humanities and the sciences and leading to the universities, and a variety of vocational courses leading to mid-level professional activities that were never properly organized or financed, and tended to be perceived as of poor quality and low prestige[6]. The expansion of higher education opportunities helps to explain both the rapid grow and the loss of quality and content of secondary general education. As the number of students flocked the secondary schools in search for a passage into the universities, their curricula turned into mere rituals of memorization and root learning, most of the traditional content disappeared (Latin, French, and Philosophy disappeared, and History and Geography turned into social studies, of dubious substance), while the best teachers moved to the best paying jobs in higher education institutions or to other activities.

The decadence of secondary schools as the place for general education could be compensated by the transference of this function to the tertiary level, as it happened with the colleges in the United States. The large number of humanities and social science courses that emerged in the seventies fulfilled somewhat this role, by increasing the years of school attendance for youngsters from the middle classes. Yet, these courses never adopted general education as their explicit goal, and strived to offer

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not have the same standing as the best graduate programs in political science, economics, administration or history, and the exclusive reliance on graduates from the Instituto Rio Branco deprives the diplomatic corps from recruiting from these places.

[6]The last comprehensive reform of secondary education dates from 1942, when a sharp distinction was made between the curriculum for general education, with two options (humanistic, or "classic", and scientific) leading to the universities, and the professional education for middle-level professions in industry, agriculture and trade. Of those, only the latter was organized in a significant scale, recruiting students from the lower middle classes to "escolas de comércio" (schools of commerce). Later, legislation was passed granting all students with secondary school level degrees the right to apply to higher education institutions. See S. Schwartzman, Helena Bomeny e Vanda Costa, *Tempos de Capanema*, Paz e Terra / EDUSP, 1984, page 188. For a broad view of secondary education, see Geraldo Bastos Silva, *A Educação Secundária*, São Paulo, Editora Nacional (Atualidades Pedagógicas, vol. 94), 1969.

professional degrees, which are the expected outcome of all higher education in Brazil. Such degrees never had much prestige or market value, leading to role ambiguities that left most of these courses with high levels of anomy, lack of motivation and disrepute. In consequence, there is practically no place where a student can get good quality general education today, except perhaps in a few, isolated private secondary schools.

Education for the "new professions." The difficulties of access and professionalization in the traditional liberal careers, added to the lack of proper general education at the tertiary level, led to the establishment of many "new professions" and careers (like communications, library science, administration, statistics, nutrition, sociology, geography) each aspiring to a piece of legislation granting professional privileges and monopolies in the labor market, following the pattern of the traditional professions of medicine and law. With a few exceptions (business administration, journalism and economics in a few prestigious institutions), these degrees cater to students that fail to get into the more traditional fields. The courses draw from little or no intellectual or professional tradition and consistence, and the graduates have great difficulties in finding jobs related to the formal content of their degrees[7]. The courses are subject to high dropout rates, caused both by the students' low motivation and by their lack of quality, as shown in table 4[8]. Effective professionalization in some of these new fields usually depends on additional courses at the graduate level, which are highly selective and limited in number.

Vocational education. There is no equivalent in Portuguese for the expression "vocational education," which is usually replaced by "technical education." Careers like library science, accounting, nursing, or operations engineering, which in other countries can be learned in post-secondary courses of two or three years, tend to extend their load and duration to get the same status, and in principle the same rights, as the traditional professions. There was an attempt, in the seventies, to require all secondary schools to provide vocational skills, a requirement that became just another

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[7]In fact, most students in these careers work during the day and attend school on the evenings, and do not expect to get their first job after graduation. They do expect, however, to use their diploma to get promoted in their jobs, and to improve their chances and opportunities in the labor market.

[8]Data on table 4 should be taken with care, since they mix information from private and public institutions, which are subject to great variations in demand. The classification of careers by fields of knowledge is the one adopted by the Ministry of Education, which sometimes brings together traditional professions like medicine with new ones like nutrition. In any event, they show the low dropout rates in the health and agrarian sciences, compared with the high rates in the physical, geological mathematical sciences. A large proportion of students in the latter fields are persons who did not get admitted to the more prestigious engineering schools, and lack the motivation and educational background to follow science-based careers. Independent data from the Universidade de São Paulo confirm the trend; they show rates close to 1 (no dropouts) for medicine and dentistry, against much higher dropout rates both for social sciences and humanities and for physics and mathematics Universidade de São Paulo, "Anuário Estatístico". *Cadernos de Planejamento* 8, 1990, table 25, p. 68-73.

bureaucratic nuisance to most schools and students, and was later abandoned. There are a few Federal Technical Schools (CEFETS) providing both secondary and higher technical education, which are considered of good quality, thanks to budgets several times higher than those of other secondary schools. As these institutions become known for their quality, their secondary schools start to be looked for as entrance doors to the university, and their higher education courses become equivalent to those provided by the conventional schools of engineering. Thus, they tend to lose their original goal, which was to provide a professional alternative to the conventional university education. Vocational education exists today almost exclusively through a network of technical and professional schools run independently from the Ministry of Education by the National Federation of Industries (the Serviço Nacional de Aprendizagem Industrial, SENAI). They do not reach the tertiary level.

Teacher training. Pre-university education was organized in the 1930s along a 4-4-3 format (primary, secondary and college levels). In the 1970s the primary and secondary level where unified in a "basic cycle," while the "college" level became known as the secondary. Teacher education, however, still follows the old pattern. For the first four years teachers are trained in secondary schools (the old "escola normal," a vocational alternative to the general education curriculum), while teachers for the 5-8 series and secondary levels go to universities. The justification for this difference is that, until the fourth grate, the students have mostly just one teacher, whose work does not require the specialized knowledge needed in later years.

If this arrangement made sense in the past, it only remains today for the lack of better alternatives. Many teachers working in the first four years of basic education in the country's main urban centers get eventually their university degrees, very often in private, evening courses of uncertain quality. They enter the schools of education in fields such as school administration, educational supervision or special education. With their diplomas in hand, they get promoted away from the classroom and into the bureaucracy of the state education administration. The teaching functions are left for the less motivated or unable to continue their studies. The situation is very different in rural areas, where many teachers lack even the minimum secondary school qualifications. Payment levels in these areas are usually very low, and to require post-secondary education for those teachers would mean to throw them out of their jobs without the ability to replace them. The obvious solution is to adopt a flexible policy for teacher training, varying according to the educational and economic conditions of each region.

Teacher education at the universities leads to *licenciaturas* given in the old "schools of philosophy, sciences and letters" or in independent schools or *faculdades*. The *licenciaturas* have to be toppled by a few courses in pedagogy given in the universities by the departments and schools of education. Another year of study can give the student a *bacharelado* degree, which is supposedly a

professional habilitation[9]. There is no evidence that the pedagogical subjects required for the licenciatura make much of a difference for the future teacher[10].

A crucial problem with teacher education is its lack of prestige among academics and students. Academic departments like to see themselves as centers geared toward science, technology and high-quality manpower training, not places for teacher training. But teaching careers are only acceptable to students coming from lower social strata, who cannot go to first-rate secondary schools and are unable to keep up with the requirements of research-oriented courses. Meanwhile, the best qualified prefer the traditional professional careers. The consequence is the high failure and dropout rates high in fields like physics, mathematics, biology and chemistry in public universities, while most students who would accept a teaching role join the low quality, private evening courses where most *licenciatura* degrees are granted today.

The consequence is that Brazilian higher education is not preparing teachers in the quantity and quality needed for its expanding basic and secondary education sectors. There is a clear need for a specialized and differentiated system for teacher education, which could make use of the competence available in the best universities, without misplaced scientific aspirations, and without the pedagogical traditions of the old "faculties of philosophy" and schools of education. There will not be room for much improvement if the attractiveness of teaching does not increase by higher salaries and the active involvement of the new generations in a nation-wide educational mobilization effort.

Scientific research and graduate studies. Brazil organized in the seventies a large system of university research and graduate education, which placed it in a privileged position among third-world countries. This system stagnated in the 1980's, at the level of about twelve hundred degree granting courses at the M.A. and doctoral levels[11], most of them in public universities, and some in a few research institutions like the institutes of physics and mathematics linked to the National Research Council, or the Instituto Oswaldo Cruz, a leading biomedical research center linked to the Ministry of Health. There are about 50 thousand students enrolled in these courses at a given time.

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[9]Students often get both the "licenciatura" and "bacharelado" degrees, which entitles them to teach and to get a job in the labor market in their specialization, if they can find it.

[10]The available evidence seems to point in the opposite direction. See Marília Pontes Espósito, editor, *Estudo Exploratório sobre o destino ocupacional, expectativas e desempenho profissional dos graduados em Pedagogi*a, Universidade de São Paulo, Faculdade de Educação, Núcleo de Estudos de Sociologia da Educação, Departamento de Filosofia e Ciências da Educação, 1987, mimeographed.

[11]The actual number of graduate programs is closer to one thousand, given the overlaps that exist among M.A. and doctoral programs, and courses that offer more than one degree.

The graduate programs are subject to an elaborate mechanism of peer review evaluation carried on every two or three years under the coordination of a special agency within the Ministry of Education (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - CAPES). The evaluations show that about a third of these programs can be considered to be up to international standards[12]. They include most of the researchers, producing most of the scientific materials and publications coming out of Brazilian institutions. The graduate programs are very dynamic, for their ability to mobilize support in times of financial difficulties, and for their positive contribution to the maintenance of academic standards in institutions where their links with undergraduate education are stronger (like in the universities of São Paulo, Campinas and Minas Gerais).

There are problems however. Completion rates are very low (only about 30% of the students get their degrees) and it takes normally more than three years to complete a Masters degree, and six to eight years for a doctorate[13]. The scientific productivity of university professors is low in quantitative terms, with little international impact[14]; and the transference of knowledge generated from universities to the productive sector and to the broader society is not very high. In some fields the graduate programs function as remedial courses compensating for the massification and loss of quality of undergraduate degrees. Finally, the incentives that exist for graduate education and research

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[12]How reliable are these evaluations? Each program is ranked from "A" to "D" every two years, and an analysis of these marks for the 1977-1980 period showed a tendency to increase the average and reduce de variance within each field of knowledge. The authors wondered whether the programs were really improving, or the peer review groups were getting more lenient. There were no follow-up studies to find out what was actually happening. See Cláudio de Moura Castro and Gláucio A. D. Soares, "As Avaliações da CAPES", in Simon Schwartzman and Cláudio de Moura Castro, editors, *Pesquisa Universitária em Questão*, Campinas, Editora da UNICAMP e Brasília, CNPq, p. 173-189. For the role played by university research in the country's research effort, see S. Schwartzman, "Coming Full-Circle: for a Reappraisal of University Research in Latin America." *Minerva* (London), 34, 4 (Winter), 456-476, 1986.

[13]If one adds five years of undergraduate education to the minimum of ten needed for a doctors' degree, one sees that students never finish their doctoral courses before they are 33 or 35. In practice the age of graduation should be higher, considering the intervals between the degrees. Since women working in teaching activities can retire after just 25 years of work, there should be cases in which degrees are obtained at the time of retirement.

[14]An analysis of publication data from graduate programs obtained by CAPES showed a global average of 0.87 articles per scholar per year. The most productive program, the Centro Brasileiro de Pesquisas Físicas (Brazilian Center for Physics Research, a laboratory linked to the National Research Council) had an average of 2.96 articles a year per scholar. See Cláudio de Moura Castro, "Há Produção Científica no Brasil?", in Simon Schwartzman and Cláudio de Moura Castro, editors, *Pesquisa Universitária em Questão*, Campinas, Editora da UNICAMP, São Paulo, Editora Ícone, and Brasília, Conselho Nacional de Desenvolvimento Científico e Tecnológico, 1986, 190-224.

has led to several distortions, from the low esteem and prestige of teaching activities to awkward attempts to fit a single model of graduate education to all fields. The introduction of graduate, research oriented programs in professional fields like engineering, medicine, clinical psychology or law created dissonance between the student's expectations and their courses, one of the reasons why so many dissertations are never done. Another distortion is the emergence of new fields striving to mimic the academic behavior of the more established research areas, with their journals, conferences, seminars, research grants and fellowships, with organized lobbies to demand, but without disciplinary and scientific contents to justify them.

A shopping list

This overview of higher education according to its functions leads to a list of traits it should have to correspond to the expectations. This list assumes that mass higher education has a plurality of often contradictory roles, a specially pronounced trait in societies as stratified and differentiated as Brazil. In this situation, it is more appropriate to recognize the differences and deal with them separately, than to deny their existence through the imposition of uniform rules and principles, which end by buttressing the mechanisms leading to more social stratification and inequality than before. The list is as follows:

- System diversification, to make possible to respond to a broad range of demands and functions that often do not coexist peacefully within the same institutional frame;

- Creation of evaluation mechanisms for all levels of higher education, extending the experience that already exists for the graduate programs. The evaluations should be permanent and public, leading to clear standards for national and international comparisons. They should help the public to know the quality of the education they are getting, and constrain the government into making its decisions on resource allocation based on explicit criteria;

- Strengthening the autonomy of public and private universities, including their ability to hire and dismiss academic and administrative personnel, establish salaries and career levels, charge tuition, get support from different sources and use it as they see fit, decide about mechanisms and targets for student recruitment, and so forth. The limits to the autonomy of public universities should be set in global terms (for instance through budget allocations), according to the results and recommendations coming from the evaluation bodies;

- Significant increase in the capacity and competence of teaching programs to respond to the needs of working students and of those coming from low quality secondary schools. New pedagogical instruments have to be developed for this task, including large-scale remedial courses and the design of programs geared to the aspirations and learning conditions of this population;

- Development of non-conventional teaching methodologies for the needs of non-conventional students (distance learning, continuous education, intensive programs) with the participation of faculty from the public universities;

- Significant increase in the capacity to train and reeducate basic and secondary education school teachers, both though the conventional *licenciaturas* and new, non-conventional programs and methodologies;

- Creation of general education courses in the sciences and humanities that could be recognized as accepted alternatives to professional degrees;

- Upgrading and proper incentives for teaching and educational work in the universities, vis-a-vis research;

- Incentives for the involvement of professors in graduate programs with undergraduate teaching;

- Reorganization of university research, to strengthen its educational role, open space for interdisciplinary work, and establish links with the productive sector;

- Eliminate or reduce the links between university diplomas and professional accreditation, and deregulate the work market for most professions;

- Turn the Ministry of Education into an institution able to identify problems and priorities, to foster independence and leadership in education, to set standards and long-term policies, and to follow up their implementation trough budgetary incentives and intensive use of peer review procedures.

The Future

The likelihood that at least some of these policies will be carried through depend largely on how the general social and economic conditions will evolve in the next ten or twenty years:

Demographic outlook. Demographic projections foresee a continuous population expansion for the next decades[15]. The significant reductions in birth rate that took place in the 1970s and 1980s will only affect the 20-24 age cohort around the year two thousand. The incorporation of new social groups into higher education (women, older people, lower middle-class persons) took place already in the seventies and is not continuing[16]. Demand for higher education in the next decades will be a

[15]For recent demographic projections, see Amélia Camarano, Kaizô Beltrão and Ricardo Neupert, *Século XXI -A Quantas Andará a População Brasileira?*, IPEA/IPLAN, Texto para Discussão nº 5, 1989. For a broad view of the process of demographic transition, see Thomas Merrick, "A População Brasileira a partir de 1945", in Edmar Bacha and Herbert S. Klein, editors, *A Transição Incompleta*, Rio de Janeiro, Paz e Terra, 1986, vol. 1.

[16]Today, more than half of the students in higher education are women. There is no data on age, but scattered evidence suggest that the number of students above 30 is very high, particularly in

function of the expansion of secondary education, which is proceeding at a slow pace; from the pool of students rejected by the entrance examinations to the universities; and from former graduates planning to continue their education. The demand for higher education in 1988, measured by the number of applicants, was of 1,921 thousand, for a total of 463 thousand openings[17]. The number of graduates in 1987 was 222 thousand, meaning that roughly one in two students gets his degree[18]. This wastage could be reduced, opening space for more students without increasing the total enrollment of students.

In short, higher education is not likely to be subject to a strong increase in demand in the next ten or twenty years. The demand will increase as the population increases, and more specifically, as the secondary education expands, and if the country's economic condition improves. In global terms, Brazil is likely to remain for many years with a small higher education sector, for the size of its population.

Economic outlook. A scenario of economic stagnation for the next decades would have a direct impact on higher education both in terms of the government's ability to cover its costs and of the population to pay for tuition in the private sector. Such a scenario does not imply a reduction in the demand for education, since educational credentials are likely to increase their value in times of job scarcity. But it could lead to an increase in inexpensive and poorly equipped courses, in growing demands for corporative privileges associated with educational credentials, and a strong pressure on the public sector to lower its entrance requirements and open the gates to more students.

A more optimistic scenario, with economic recovery following the current period of adjustment and reorganization of the public sector, will not lead necessarily to an expansion of public higher education, but could mean that the public sector will not deteriorate much further. As the economy gets modern and competitive, it is likely to demand not only specialists, but people endowed with broad skills, and less dependent on formal credentials and special privileges to get jobs. In this scenario, the demand for quality would increase, bringing pressures on higher education to improve.

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evening courses

[17]Data from the Serviço de Estatística da Educação e Cultura do Ministério da Educação, processed by the Núcleo de Pesquisas sobre Ensino Superior da Universidade de São Paulo

[18]Compared with the total number of applicants, however, this figure suggest that only 12% of the candidates to higher education institutions ever get a degree. We do not know, however, how many applications are made per person every year, nor how long the candidates insist in applying every year before giving up.

The weight of the past: the frailty of the academic ethos, elitism and corporatism.

On the main, the current problems of Brazilian higher education are not financial or managerial, but of another kind. Financially, the government spends little in higher education, in terms of the age cohort, or even regarding those that are currently enrolled in any higher education institution, which are mostly private. But the analysis of expenditures in public higher education institutions suggests per capita costs that are not lower than that of other countries, although comparisons of this kind are difficult to make[19]. Brazilian public universities do not spend well their resources, while the private sector respond to a market for cheap and low quality education. Organizationally, the international literature shows that higher education institutions can be run very differently, from the professional managers in the U.S. to the professorial administration in Europe. The best results do not seem to depend on management style or administrative efficiency, but on the ability to make prevail the academic and intellectual values that are the core of university life[20]. Higher education is not likely to improve significantly by changes in management procedures or even by injection of additional resources alone, which does not mean that better management and more resources are not needed.

Ethos. The frailty of academic ethos is not mentioned often as an important problem in higher education, probably because of the difficulties in tackling such a diffuse cultural element. Countries having well established higher education institutions today had in the past social groups with strong commitment and interest in cultural and educational activities, which provided their academic institutions with normative and cultural contents that go a long way in explaining their vigor. In Brazil, as in other countries whose governments imported their educational institutions from abroad, these contents sometimes never existed, in spite of the large number of laws, norms and regulations placed by the educational authorities on the educational institutions. The study of the history of the social and cultural movements associated with educational institutions is the only way to ascertain the presence of such contents, which do not reveal themselves in the legislation, the courses' syllabus or the academic credentials of professors[21]. When the contents are weak, empty routines and power

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[19]E. Wolynec, *O Uso de Indicadores de Desempenho para a Avaliação Institucional*, Universidade de São Paulo, Núcleo de Pesquisas sobre Ensino Superior, Documento de Trabalho 10/90; Francisco Gaetani e Jacques Schwartzman, *Indicadores de Produtividade nas Universidades Federais*, Núcleo de Pesquisas sobre Ensino Superior, Documento de Trabalho 1/91.

[20]This ideas is well expressed by Burton Clark's characterization of universities as decentralized, shallow and "bottom heavy" institutions. In such organizations, the central administrations' main role is coordination and institutional leadership, rather than the management of day-to-day activities in the usual sense.

[21]Some of the contrasts between the academic traditions of the universities of São Paulo and Rio de Janeiro can bee seen in S. Schwartzman, *A Space for Science - The Development of the Scientific Community in Brazil*, Penn State Press, 1991, forthcoming.

plays take precedence (formal titles, pay scales, job tenure, institutional power), and the substance of educational work is threatened.

Fortunately, this is not the whole story. It is not difficult to identify places where the academic ethos has taken a firm hold: in some of the most prestigious professional schools, in institutions that attracted European immigrants, with their values and educational aspirations, and in the few centers that developed significant scientific traditions and close ties with international scientific centers. In the 1930s Brazil had a significant group of educators that embodied the ideals of public and universal education, which became known as the "pioneers of new education[22]." Their main concern, for good reasons, was basic education, and no other group played a similar role for higher education.

The transformation of modern higher education in mass systems led in all countries to the dilution and questioning of the traditional academic ethos, and attempts to replace it by explicit and measurable mechanisms for large-scale transmission of knowledge and skills. The enthusiasm that surrounded the beginnings of the new "educational technologies" throughout the world has now given way to more modest expectations, in spite of many well-localized experiences. The adoption of highly technical, large-scale educational procedures, to be handled by advanced management procedures, does not replace the need of academic ethos; on the contrary, it depends on the existence of well established academic traditions to succeed.

Elitism. Education has two faces in its values and social consequences, that of democratization of opportunities and social progress, and that of increased stratification and elitism. The democratic and progressive face appears in the enlightenment ideas that come with the establishment of modern educational institutions)) the equalization of opportunities, the prevalence of achievement over rank, of reason over authority and dogma. Increased stratification and elitism are perverse effects that come with the new rights and privileges granted to the educated, due to the strong correlations found in all societies among social rank, economic resources and educational opportunities. The enlightenment face prevailed in societies where education grew linked to the emergence of new middle classes, the expansion of occupational opportunities and the diffusion and growing appreciation of competence and individual rationality. In other societies, where educational institutions are organized by the state or by small elites in conditions of economic stagnation and little social mobility, what prevails is the elitist and perverse face, and the educational institutions do not play the reforming, progressive roles they do in other conditions.

Higher education in Brazil has been always surrounded by liberal ideologies and intentions[23], but was from the beginning an elite undertaking, organized by the government to cater to a small fraction of the population, or for the training of its own personnel. The rise a modern economy and

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[22]Anísio Teixeira, Lourenço Filho and Fernando de Azevedo are the better known names.

[23]On the liberal ideology, see Alberto Venâncio Filho, *Das Arcadas ao bacharelismo: 150 anos de ensino jurídico no Brasil*, São Paulo, Ed. Perspectivas, 1977; and Sérgio Adorno, *Aprendizes do poder - o bacharelismo liberal na política brasileira*, São Paulo, Paz e Terra, 1988.

an extended middle class in some areas led to a relative expansion and modernization of higher education, but above all to the growth of an ancillary network of private institutions geared to the teaching in the soft and less demanding careers, provided through evening courses staffed by part-time, ill-paid instructors. As the public sector expanded, this ancillary sector begun to growth within the public universities as well, dividing them among the traditional, highly selective careers and the new, less selective and less prestigious fields.

This pattern of social stratification and elitism is associated with a pervasive egalitarian ideology, which refuses to acknowledge that people are socially unequal, and therefore may have different aspirations and needs. This combination of large social differences and an egalitarian ideology helps to explain why Brazil has been so far unable to organize a truly pluralistic higher education system, which could include other values and life models than the standards of life and consumption of a small elite.

Corporatism. Modern universities have historical links with medieval corporations, and traditions of autonomy and self-regulation are important and necessary ingredients of academic institutions. The term "corporatism" occurs in the political science literature in a different sense, to characterize forms of organization of professional groups in defense of their short-term interests, often resisting trends do change society in the benefit of the majority. The overlap between the two senses is constant, the quest for autonomy, for some, being nothing but the defense of corporatist, private interests for others. The difference is not a simple question of point of view, but depends on the issues of academic ethos discussed above.

Autonomy and self-regulation are important in academic life because the activities carried on in institutions of higher learning cannot be reduced to a set of pre-programmed tasks. Higher education, like other cultural activities, requires individual creativity and commitment of each person with his daily routines, which can only exist in an appropriate climate of autonomy, decentralization and local responsibility for the final product of one's work. This is not exclusive of academic work. The recent literature on the nature of industrial work is pointing out the limits of the Taylorist, or Fordian model of division of labor and task simplification, when compared with the high levels of productivity, quality and efficiency associated with labor patterns that try to recover the traditions of self-regulation and professional pride of the old guilds[24]. The sociological literature has a still longer tradition of pointing out the role of autonomy and self regulation in the professional, intellectual, scientific and cultural institutions[25].

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[24]Michael J. Piore e Charles F. Sabel, *The Second Industrial Divide -Possibilities for Prosperity*. New York, Basic Books, 1984.

[25]For Max Weber, the development of modern legal systems is inextricably linked with the emergence of the legal profession as a self-regulating community. In another example, self-regulation has been a central concept in the Mertonian view of the institutionalization of modern science

Autonomy should not lead to self-closure and lack of permeability to external influences, but to the ability for constructive adaptation to the demands and conditions of the environment, through the consolidation of unique institutional and professional cultures. An autonomous, well established institution should be able to identify external sources of financial and political assets, the needs and aspirations of society, and respond to these sources and demands according to its own rules of competence and integrity. In this process, it gains prestige and acceptance in the broader environment, and more autonomy. This ideal situation contrasts with that of closed communities, unable to perceive or respond with flexibility to external signs, which exhaust themselves for the lack of nourishment and support. It contrasts also with institutions that lack well-defined, strong normative cores, and are invaded by all kinds of external demands, values and aspirations they cannot evaluate and resist.

The on-going debate in Brazilian society about university autonomy has suffered from the difficulty in realizing the deep differences among these situations. The recent, 1988 Constitution declared the universities to be autonomous, under the assumption that they would be self-regulated, and that the government was not renouncing to its ability to conduct educational policies according to society's interests. The implementation of this legal precept depends on the existence of professional, academic and institutional cultures which are often not there. The consequence is that autonomy in the good sense is in practice translated into corporatism in the bad sense, leading to two opposite reactions: the attempts by sectors in the administration to go back to traditional forms of bureaucratic and administrative controls, which are today plainly unconstitutional; and proposals to treat higher education institutions like business firms, throwing them into the competitive and uncontrolled logic of the market for whatever goods they have to sell[26].

There are two kinds of corporatist behavior affecting Brazilian higher education, that of the professions as a whole and that of the academic profession in particular. Corporatism in the professions comes directly from the tradition of medieval guilds, with their monopoly in the initiation to the professions, controlled by the elders and backed up by public authority. This monopoly, which in most Western societies is restricted to liberal professions like Medicine and Law, was extended in Brazil to several dozen professions, each claiming a protected place in the labor market, a minimum professional wage and other distinctions. Today, for each profession there is a piece of legislation establishing its exclusive working privileges, and an association with legal powers to regulate and monitor its practice. The educational authorities are responsible to make sure that the curricula in all institutions include the list of subjects considered necessary for each profession. This system has had serious consequences for the incentives it provides to educational credentialism, and for the rigidity it impinges on higher education institutions. The private sector looks for ways to go around the privileges granted to the professions, reducing the number of degree holders in their ranks; but the

[26]The contrasts between self-regulation and market is the subject of the brilliant essay by Albert O. Hirschman, *Exit, Voice and Loyalty - Responses to Decline in Firms, Organizations and States*, Cambridge, Mass., Harvard University Press, 1970. One of his points is that self-regulation)) voice)) is the preferred road for political scientists, while economists have difficulty in thinking otherwise than in terms of markets)) exit.

public sector abides by the rules, requiring diplomas for filling in the slots in the bureaucracy, granting promotions and pay rises according to the diplomas presented by employees[27].

The second type of corporatism is related to the recent emergence of an "academic profession," spurred by the introduction of full-time employment for university professors after the 1968 university reform. The intention was to move from the old regime, when teaching was done by liberal professionals in their spare time, to the American model, where the university professor is also a researcher, and works full time in his institution. In practice, the academic ranks of public universities swelled with people lacking both the professional identities of the past and the research credentials and competence of the future. Their main professional identity is that of academic employees; they are organized in a nationally unified union, the Associação Nacional de Docentes do Ensino Superior, ANDES (National Association of Docents of Higher Education), affiliated to the Central Única dos Trabalhadores, the leftmost segment of Brazilian labor union organizations. ANDES has been instrumental in getting pay raises and job stability for its affiliates, has led a series of nationwide strikes of higher education institutions, imposed homogeneous pay scales and promotion rules for all federal universities, and has effectively resisted any attempts to implement evaluation policies for academic personnel and institutions. The teachers' unions, with the administrative employee's unions, have played also a large role in imposing grass-roots democracy and political criteria in the selection of academic authorities at all levels in many universities.

Perspectives for the future

I will discuss the future perspectives of higher education in terms of two central questions, the likelihood of transform the unconfessed stratification that exists today in recognized differences to be dealt with, and the possibilities of turning corporatist tendencies into appropriate modalities of academic autonomy. These two questions depend on whether it would be possible to replace the old mechanisms of government control and supervision for modern evaluation procedures. Finally, these issues will be influenced by the possible expansion patterns of higher education in the next few years, which should be examined first.

Control, Evaluation and Planning. The rapid expansion of enrollment and creation of new institutions that took place in the mid 1970s, with the massive entrance of women and older students into higher education, is not likely to occur again soon. There are, however, many indications that the system will have to start growing again, after a decade of stagnation. The public sector has not increased for several years, and budgetary restrictions will not allow it to grow soon, except by better use existing resources. The private sector has grown in bursts, depending on changes in the regulatory policies of the central government, and on the vicissitudes of economic cycles. Several hundred

[27]See, for the legal status of professions and its consequences, Marcelo Jacques M. da Cunha Marinho, *Profissionalização e Credencialismo: A Política das Profissões*, Rio de Janeiro, SENAI, Departamento Nacional, Coleção Albano Franco 8, 1986. See also Geraldo M. Martins, *Credencialismo, Corporativismo e Avaliação da Universidade*, Universidade de São Paulo, NUPES, Documento de Trabalho 6/90, 59 pp., 1990.

authorization requests for the establishment of new private institutions lay today at the Federal Council of Education's door, waiting for a policy decision about further expansion.

The government's perplexity about expansion can be explained by the indecision between two opposite attitudes, whether to be guided by the demand (which is what the private sector wants) or to plan expansion with care, limiting it when necessary, and guiding it to priority fields (the preferred road for the professional corporations of medical doctors and lawyers, and apparently also for the administration.)

The main argument against central control and planning is that this is impossible to do. Regarding central control, the Federal Government has traditionally proceeded on the assumption that all institutions should conform to similar standards, to be determined when the courses start, and reexamined again if any change is to be made, or if any serious problem arises. The procedures are formal, legalistic and bureaucratic, and open to trickery and deception; they apply only to non-university courses, most of them private, since universities are autonomous to create and expand courses at will[28]. More seriously, the members of the Federal Council of Education, the normative body for the whole educational sector, are often political appointees, with long mandates, and seldom recognized by the university community as proper peers. Neither the Ministry of Education nor the Federal Council of Education has the administrative instruments to monitor the institutions under their responsibility, and there are serious reasons to believe that this is for the better. Since the existing rules and regulations are formal and bureaucratic, they tend to generate behavior that is also formalistic and bureaucratic, with form and procedure prevailing over contents, and no way of knowing how good the final products really are. There is an urgent need to replace this control by a new one, based on freedom of initiative and evaluation of results. The central ideas are the elimination of bureaucratic and formal controls, allowing for the emergence of a market of educational alternatives; to evaluate contents, not form; to evaluate afterward, not before; to do it periodically, thorough peer review groups, rather than through the Ministry of Education or political appointees; to allow for different and competitive educational goals and orientations; and make the evaluation results widely known. Competitive evaluations should coexist, led by interuniversity bodies like the National Council of Rectors, by professional and scientific associations, by private publishers (like the *Guia do Estudante,* which used to be published yearly by Editora Abril, or the periodical evaluations carried on by the Brazilian edition of *Playboy* magazine), and so forth. It is the

[28]Because of this freedom, there has been a tendency of private groups to have their schools formally recognized by the federal authorities as universities. The basic condition in the current legislation is that a university should be "universal" in their coverage of intellectual fields, which means in practice that they should have courses in technology, biological sciences, social sciences and the humanities. Other conditions)) like the resources available, the capability for research, the physical installations, laboratories, and so forth)) depend on whether the government is a more or less permissive mood. In the last several years the mood has been very permissive. Public universities can be created by decree. The new education legislation being discussed in the Congress would require evaluations both for the creation of new universities, public or private, and periodically, for the maintenance of university status

government's responsibility to guarantee the minimum quality of educational products offered for sell to society, as it is for food and medication. Its regulatory function should not go much beyond that, and even this control would be done better through delegation than directly by the bureaucracy.

If the government does not know what is being taught, and what happens with the knowledge the students get, it could not possibly try to plan the number of professionals needed in the future. Nobody believes today that it is possible to predict with any reasonable accuracy how many medical doctors, engineers, economists, lawyers and sociologists a country will need within the next five to ten years, and use the prediction to decide how many places should be offered in teaching institutions. Societies and their labor markets evolve in unpredictable ways, and the places they open for professions depend more on the traditions, social prestige and legal status they have than on any technical relationship that could exist between, say, productivity and the number of engineers, nutritionists and the nutrition level of a population, or lawyers and how just societies are.

What we know for sure is that modern societies will require ever more persons with three or four basic kinds of generic skills: the ability to handle the language and the local culture, to write, relate with different people; the ability to understand the organization and functioning of human institutions, their structure and operation modes; the ability to think in terms of numbers, formulae, measurements, tables, equations; and the ability to know, deal and take care of the life and health of living organisms. Of these four broad fields of knowledge)) the humanities, the social sciences, the technical and biological sciences)) the first two tend to encompass many more people than the last ones, because of the latter's tendency toward specialization and concentration in large institutions, companies and laboratories. The prevalence of courses in the social sciences and humanities in Brazilian higher education is not by itself a deformity, as it is sometimes considered.

Quantified targets can only exist in a few, delimited areas, when linked to well defined public programs. In the health sector, if a long-range program to provide basic medical care to all Brazilians existed, it could lead to rough estimations about the number of medical doctors, nurses, radiologists, laboratory workers, midwifes, nutritionists, pharmacists, clinical psychologists and other professionals needed for such a program. Even so, it would be impossible to establish clear quantitative targets for each of these professional groups. The existing division of labor and professional hierarchies among specialties are socially determined, and different arrangements could be conceived to allow for more effective distribution of functions and bridges between them, with varying consequences for educational institutions. People would be attracted to more limited, short-term courses leading to immediate working opportunities if they knew that they could be upgraded later to more complex and rewarding activities through additional study and exams. No such possibilities exist today.

Teacher education is another area amenable to quantitative targeting, giving the urgent need to expand basic and secondary education. Currently, low pay scales and the low esteem of the teaching function keep the best qualified away from the classroom, and lead to very high turnover rates. No realistic targets for teacher education can be made without profound changes in the working conditions of teachers. It would be unrealistic to imagine that teachers in basic education could earn

as much and have as much prestige as the established academic professions. Hence, teacher education must be adapted to its public. This is a serious pedagogical challenge, requiring significant investment in the preparation of teaching materials, organization of remedial courses, and in the use of a variety of new methodologies for counseling and evaluation. It requires also a new understanding about the abilities and types of knowledge school teachers should have, which are not necessarily those required by professionals trained for scientific research of technological work in laboratories and firms. Planning for teacher education needs to consider also the higher turnover rates that are inherent to the teaching profession. Instead of assuming that teachers will be teachers for their whole professional life, it will be necessary to consider the possibility that, for many, teaching can be just one initial phase in a road to other activities and professional projects. Once this reality is taken into account, it will have profound consequences on the way the teaching profession is organized, on the recruitment patterns of teachers, and on the educational targets that could be done for this area.

The eventual existence of targets for some fields, like health and education, does not grant the state the right to restrict the private sector in its decisions to provide the courses it sees fit, if there are not public subsidies involved and if minimum standards of quality exist. The only instrument the government has today to influence the private sector is the student loans, which could be directed to priority areas.

Pluralism and deregulation. The introduction of adequate evaluation procedures should be accompanied by efforts to deal with the thorny problem of the links between Brazilian higher education and the professional corporations. *A sharp separation has to be introduced between formal education and the accreditation for the professions.* An education diploma should be a statement about the qualifications provided by a given institution, not a legal entitlement to anyone for the practice of a profession. Legal accreditation for professional work should be limited to those areas where malpractice can lead to irreparable damage to life or property. In such cases)) like for airline pilots, train engineers, medical doctors)) professional licensing should be based on permanent evaluations, carried on by specialists under government supervision.

For other fields, it is good to have professional and scientific bodies making evaluations and accrediting those that meet their criteria of quality and competence. They should not have the monopoly of accreditation and control of their professions, and their recommendations should not have legal validity and implications. It would not be easy to introduce these changes, since they go against ingrained interests and long-established views of professional groups, and would require profound changes in legislation. But without them it will be almost impossible to reduce the demand for low quality education.

The market for low quality education is likely to be reduced if the institutions lost their ability to grant legal entitlement to the professions, and if a clear and transparent market of educational quality could develop. The short-term consequences of such changes could be a decline in the demand for formal education; but, on the long run, one could expect a clear increase in the correlation between formal education and real skills. The opposite effect could be obtained if deregulation of higher education proceeds without changing the corporatist arrangement of the professional market.

In such a scenario extremely low quality courses and diploma granting institutions are bound to proliferate, giving arguments for the reinstatement of formal and centralized controls.

A positive consequence of deregulation of higher education and the professions would be the emergence of alternate and competitive models, some closer to the classic university pattern, full time students and professors, others geared to practical, short-term courses provided in the evenings, or making use of methodologies for distance learning, and so forth. Once rid of the notion that all degrees in a given profession are equal, the space for innovation and experimentation should become wide open. Deregulation will increase the role of the professional associations in the certification of their associates, while reducing the pressure and energy they expend today trying to control, through the Ministry of Education, the creation of new institutions and the rights and privileges of neighboring professions.

Expansion and quality. The private sector should not be restricted in its offer of educational opportunities, if they can show a minimum of seriousness, honesty and competence, and if no public costs are involved. Public universities could double their number of students with roughly the same physical infrastructure and personnel they have today. Such an expansion would require major redistributions of resources, physical space and time of professors and employees, within and among universities and regions, and would have to face all kinds of institutional, disciplinary and regional resistances and opposition; but it could be done. The main risk of such an expansion would be the threat it would bring to the pockets of quality the public universities Brazil still maintains.

The pockets of quality are concentrated in the graduate and research programs and in the best professional schools. Research and graduate education keep alive the function of keeping in touch with the outside world and generating new knowledge inside, a role the private sector could not fulfill in the same way, and could not exist without public support. The best professional schools depend on complex installations and laboratories and competent and well qualified professors, which could hardly exist without the graduate and research programs.

The entrance examinations to public universities have led to unfulfilled places in the less demanded fields, for lack of qualified candidates. Except in the more competitive fields, to double the number of students would mean to admit students with lower educational qualifications than what is considered the minimum acceptable today. A case can be made for the idea that the role of public education is to provide opportunities for the poorer segments of the population, since the richer have the chance to pay for better education in the private sector, as they already do at the basic and secondary levels. Public higher education is totally free, and this is socially unjust. The introduction of cost recovery, combined with fellowships and long-term loans for the needed, would be an important instrument of social justice, and would have other positive effects.

But it would be illusory to imagine that it would be possible to establish universities with a minimum of quality just with private resources[29]. It would be impossible to charge more than about

[29]The American private universities, with their large endowments and research contracts, are probably the only example of successful private universities, together perhaps with those established

US $2,000.00 a year of tuition to more than a handful of students, and it is not likely that more than half could pay even this amount. Long-term loans could be a possibility, but they would require a degree of predictability the Brazilian economy has not had for many years. The current average cost for public higher education in Brazil is between 5 and 8 thousand dollars a year not considering investments in infrastructure, laboratories and equipment. A movement to push the best and richer students from public to private universities would make the pressures from the private sector for public subsidies irresistible. The consequence could be a situation Brazil does not have yet, but is already taking shape in other Latin American countries: a massive, low quality, rundown public sector for the lower middle classes, and an exclusive and highly subsidized private sector for the rich.

It would be a mistake to expand the public sector simply by loosening up the entrance requirements and opening new evening courses that are just poorer versions of the day ones[30]. To expand without deteriorating further the present system will require work do be done simultaneously on two fronts. To keep and if possible increase the academic quality of the existing courses for ordinary students, providing fellowships for full time dedication, and charging those that can pay; and to create new modalities of higher education for other types of public)) older people, professionals trying to improve their skills, women starting their careers when the children leave home, youngsters having to work during the day. Brazilian higher education has made very little use of alternate teaching formats and methodologies, and there are strong prejudices in the academic community about things like long distance education, intensive, short-term courses, week-end schools, continuous education, and so forth. The involvement of the better scholars from public universities with these educational modalities is be the best way to break the prejudices. The existence of flexible mechanisms of credit transfers among different educational modalities would go a long way in avoiding the risk of freezing people in their first choice, and improving the acceptability of the supposedly "less noble" educational routes. As these methodologies are applied in priority fields like health and education, linked with long range projects, they can attract significant support, making room for still more ambitious projects. It is not an impossible scenario.

Possibilities and probabilities

What I tried to show throughout this text is that Brazilian higher education has a road to follow in the next decades, which is reasonably clear and possible to thread. If followed, it could lead

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in many countries by the Catholic Church. None of them could survive with just their students' tuition.

[30]The minimum requirements for the less demanded careers are already so low that they approach the points one could get by random responses to multiple choice tests. In this situation, the current debate on whether the entrance examinations should "select" students or just "classify" them and fill all vacancies does not have much sense. At the other extreme, in the most competitive fields, the minimum requirements are so high that they exclude perfectly well prepared candidates, and there is no indication that the grades obtained at the entrance examinations are good predictors of later achievement at school or in professional life.

to more quality, more coverage, more equity, and more significant social roles. The product of these transformations would be a new reality for higher education similar to Brazil as a whole, in what the country is more striking: big, complex, contradictory, flexible, unequal, dynamic, creative and progressive.

To say that this is possible does not mean to say that it will happen, not even that it is likely. To move along this road would require to change the Constitution, the legislation, to confront entrenched corporatist interests, and above all the mental habits and attitudes of so many people. The reactions unleashed by the latest attempt to change Brazilian higher education in depth do not allow for much optimism[31], and the same is true for attempts in Mexico, Spain and other countries. There is such an imbalance between the ability for short term mobilization of entrenched corporations and interest groups, and the general perception of the long-range benefits of reforms, that the latter is almost impossible to prevail. At the same time, there are enough internal and external pressures that can eventually lead to better results. Internally, the Brazilian universities have many groups seriously concerned about the quality of their work, the role of their institutions in society, and willing to fight for them. Externally, as the country finds its way into the modern world, there will be growing pressures and incentives to make the universities more responsible for society's needs. The need to compete for public money with other activities and educational levels could have also a positive effect on the universities, which will have to prove their importance, their role and the quality of their products.

The most telling sign that things are perhaps changing for the better is that the ideas discussed in this paper do not arise the same indignation or perplexity they did just a few years ago. The Brazilian academic community discusses today, with relative tranquility, subjects like evaluation, differentiation, corporatism, the place of the private sector, tuition in public institutions, the links between autonomy and social responsibility, the importance of academic values, the tensions and contradictions among teaching, research and extension work. This is more than just a process of learning. The academic community is gradually realizing that the Brazilian university, and more specially the public sector, is not the defenseless victim of an obscurantist conspiracy coming from the Outside. It can find good friends and partners outside, and discover unsuspecting enemies within itself. To turn this perception into new alliances is the hopefully the next step.

[31]S. Schwartzman, "Brazil: Opportunity and Crisis in Higher Education", *Higher Education* 17, 99-119, 1988.

Tables.

Table 1. Brazil, Enrollment in higher education by type of institution and legal authority, 1988.				
	type of institution			
	university	**non-university**	**Total**	**Percentage**
legal authority				
Federal	304,465	13,366	317,831	21.1%
State	129,785	60,951	190,736	12.7%
County	17,178	59,606	76,784	5,1%
Private	328,812	599,397	918,209	51.2%
Total	770,240	733,330	1,503.560	
	51.2%	48.8%	100%	
Source: Calculated with data from Ministério da Educação, Serviço de Estatística da Educação e Cultura (ME/SEEC), 1988.				

Table 2. Brazil, number of higher education courses created by year (by 7.5 years' intervals).

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    Number     year
               midpoint

       0       1880.0 *
       3       1887.5 *
       9       1895.0 *
       8       1902.5 *
      28       1910.0 *(
      23       1917.5 *(
      11       1925.0 *
      49       1932.5 *((
     111       1940.0 *((((
     138       1947.5 *(((((
     211       1955.0 *(((((((
     436       1962.5 *(((((((((((((((
    1419       1970.0 *(((((((((((((((((((((((((((((((((((((((((((((((
    1091       1977.5 *((((((((((((((((((((((((((((((((((((
     663       1985.0 *((((((((((((((((((((((

                      I....+....I....+....I....+....I....+....I....+....I
                      0        300       600       900       1200      1500
                                Number of Courses

    valid cases  :      4.200
    without information:  100
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Source: ME/SEEC, 1988.

Table 3. Brazil , applicants, places and diplomas granted by types of career.

	"Traditional" professions[1]	"new" professions[2]	vocational courses[3]
applicants	**36%**	**60%**	**4%**
places	**16%**	**80%**	**4%**
diplomas	**22%**	**76%**	**2%**

1 - Medicine, Law, Dentistry, Engineering.
2 - All careers except the traditional and the vocational ones. Includes the social sciences. humanities, literature and teaching education.
3 - includes, among others, interior decoration, translation, hotel management, dance, electric maintenance, secretary, data processing and several courses on applied industrial technology.

source: **ME/SEEC, 1988.**

Table 4. Brazil, new students (1988) by graduates(1987), by fields of knowledge (4,300 undergraduate courses).

Health sciences	**1.6**	
Agrarian Sciences		**1.7**
Humanities	**1.8**	
Biological Sciences	**2.1**	
Applied social sciences	**2.1**	
Language, literature	**2.1**	
Engineering		**2.4**
Mathematics, physics and earth sciences	**2.6**	

Source: **calculated from DE/SEEC, 1988.**

Table 5: Brazil, Graduate Education, 1989

	M.A. Level	Ph.D Level
Number of Courses:		
	925	**399**
Number of Students:		
Mathematics, physics and earth sciences	**13.1%**	**16.3%**
Engineering	**10.3%**	**11.8%**
Biological Sciences	**12.0%**	**14.3%**
Health Sciences	**21.1%**	**26.8%**
Agricultural Sciences	**12.0%**	**8.3%**
Humanities	**23.0%**	**18.8%**
Social Professions	**7.0%**	**3.5%**
Arts	**0.6%**	**0.6%**
Total (100%)	**42,205**	**9,751**

Source: **Ministério da Educação-CAPES.**

Table 6. Brazil, demographic projections for selected age cohorts (thousands).

	Year			
	1980	1990	2000	2010
age group:				
10-14	14,279	16,812	16,162	16,487
15-19	13,590	14,952	16,407	16,267
20-24	11,525	14,085	16,624	16,009
25-29	9,425	13,328	14,712	16,184
Total	120,194	145,762	170,932	194,082

Source: **A. A. Camarano, K. Beltrão and R. Neupert, Século XXI - A Quantas Andará a População Brasileira?, IPEA, Texto para Discussão nº 5, 1989 (Hipothesis II).**