

Universities and the Transformation of Society in Brazil

Simon Schwartzman¹

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The two faces of the enlightenment tradition.....	2
Church, state and the first Latin American universities	4
The new professions, science and culture.....	6
The first universities	8
The post-war years: from elite to mass higher education.....	11
Political mobilization	15
The university reform.....	16
Higher education and social transformation.....	20
Higher education and social equity	21
Quality and the requirements of the knowledge economy	25
Conclusions.....	28
References	30

¹ Instituto de Estudos do Trabalho e Sociedade (IETS), simon@iets.inf.br

The two faces of the enlightenment tradition

Western universities are part of the enlightenment tradition, which, from the beginnings of modern times, spread the values of “human reason, science, and education as the best means of building a stable society of free men on earth” (Anchor 1979). The introduction of Western-type universities in other societies, in Asia, Africa and Latin America, was also conceived and justified in terms of the transformations they would bring, through the benefits of rationality, democratic values and modern technology. Universities, however, like most cultural and professional institutions, have two faces. The external face is the role its participants – academics, administrators, and students – may play for the benefit of society. The other side is the institutional arrangements and private benefits they secure for themselves. These two faces can be in harmony, or they may not. When they do, the institutions bring benefits to society, and society provides their members with resources, prestige and recognition. When they do not, the social benefits may still be significant, but society may not recognize them. Alternatively, the private benefits may be large, while the social benefits are uncertain.

Sociologists have dealt with this double face by stressing the importance of self-rule and autonomy for the development and strengthening of the professions and their social usefulness – the functionalist view – or by pointing to the self-interest and delusions of institutional and professional corporatism – the critical view. The functional view states that professions are most useful when fully established, through the development and preservation of knowledge and craft traditions by self-contained groups. They control access to their ranks, transmit their skills and competencies from generation to generation, and provide society with vicarious services – medical care, legal protection and religious rituals and dispensation – which are needed but beyond the understanding of laymen. Universities and, more recently, professional societies, are the institutions developed to reproduce, maintain and expand the contents, ranks and boundaries of professions, and share their claims for autonomy, social relevance and prestige.² The critical view, which

² For this reason, the academic staff of universities is often treated as a profession of its own, although this is often more a claim than an empirical fact. See, for instance, Altbach and Lewis (1996)

dates at least from Marx's classic analysis of the German state, is that professional bureaucracies, which claim to work for the general good in the name of specialized and esoteric knowledge, work in fact for the benefit of the bureaucrats' private interests. The monopoly professional corporations come to hold on some activities, and the price they extract for their services, are not a simple retribution for their skills and dedication, but the outcome of long processes of social conflict and negotiations, through which legal entitlements and professional rights are established.³

The two faces are not exclusive, and economists have strived to measure and compare the "private" and the "social" returns of formal education, a reasoning that could also apply to the professions. Formal education provides students with knowledge, skills and credentials, which entitle them to specific benefits and privileges. They also generate benefits for society as a whole. The assumption of the "rates of return" estimations is that, if the earnings received are higher than the costs of education, the investment is a good one. The taxes paid on these earnings are the social benefits of this investment, as distinguished from what remains in private hands. A counter example, however, is enough to show the limitations of this approach. The number of lawyers in the United States is much higher than in many other countries, and their income is very high. Nevertheless, it would be very difficult to argue that this is a measure of the benefits the legal profession brings to American society.⁴

The creation of wealth, however, is just one of the effects universities can have on society. They can also generate ideas, change values, enhance science, stimulate the arts, and help to maintain or change the social order. Competing claims about the public and private benefits of science, education and culture are permanent features of modern societies, where education,

³ For an excellent summary of the two perspectives on the sociology of professions, see Gieryn (1995) 408-411. The main sources are Parsons (1958); Merton, Rosenblatt and Gieryn (1982); Wilensky (1964); Collins (1979); and Abbott (1988)

⁴ This example is taken from "Private Incomes or national wealth? The search for social rates of return", in Wolf (2002) pp. 24-24.

professional work and public jobs are important channels for social mobility, higher income, stability and prestige. The interplay of new and old ideas, values, knowledge and proposals for change in government and society is always enacted by people in flesh and blood, who use their views to negotiate, bargain and conquer new spaces – old and new generations, children of local gentry and immigrants, rural and urban settlers, established and upcoming elites. Universities are privileged arenas for this interplay.

Church, state and the first Latin American universities

Universities in Latin America share many features with their European counterparts, but have their own peculiarities. In Portugal and Spain, which opened the roads from Europe to Asia, Africa and America in the 15th and 16th centuries, organized knowledge was in the hands of the Catholic Church, who educated the children of the best families, blessed and kept the records of births, marriages and funerals, and followed the Conquistadores in building their empires. The role of religion in the Iberian empires, which resisted the onslaught of the Reform, was very different than in other West European regions. The Reform movement was part of a very broad wave of social transformations associated with the birth of modern capitalism, the development of empirical science, the creation of national states, and the spread of literacy.⁵ In Portugal and Spain, social transformation was contained, with the religious Inquisition as one of its main political and ideological tools. Even so, as the Iberic countries grew rich, higher learning also expanded. In Spain, university education rose throughout the 16th and the 17th centuries, and the first universities in Latin America were also established by the Spanish Church. (Kagan 1974, 1975, 1981). It was different with Portugal, with no universities allowed in the colonies. By the end of the 18th century, Church and State collided in both countries, as the royal houses and a new generation of enlightened elites looked with envy to the achievements of other European

⁵ The classic reference here is Weber (2001)

countries, sought to bring the empirical sciences and some degree of intellectual freedom to their societies, and disputed with the Jesuits the control of their education institutions.⁶

With the Napoleonic wars, Spain and Portugal lost their grip on the American continent, and the old colonies, now independent countries, strived to create their own higher education institutions, free if possible from the intellectual dominance of the Catholic Church.⁷ In some countries, as in Chile, the old universities survived, side-by-side with the new ones. In Brazil, the project to create a national university would be postponed for another hundred years, and the Church would wait until the mid 20th century to create its first university. In each country, with different degrees of success, a new cultural elite was being created – lawyers, medical doctors, military officers, engineers – recruited from the children of the landowners, functionaries and courtiers of the old colonial administrations, and newly arriving immigrants. They would absorb the ideologies of the times – science, technology, rationalism, national independence, democracy – and, by reading their writings, they would be undistinguishable from their European counterparts.

However, Latin American societies were not being transformed the same way. No significant industrial activities existed, agriculture was either rudimentary or organized in plantations based on slave labor, and the cities were administrative centers around which large numbers of social outcasts survived. In Europe, the industrial revolution and the reorganization of agriculture created the urban “dangerous classes” - or, as Karl Marx would refer to them, the “Lumpenproletariat”. It is less known that, at the time, cities like Salvador in Brazil, Mexico city or Lima in Peru were as large or larger than those in Europe in the US, and also inhabited by all

⁶ They also fought for the control of the American colonies and the native populations. On the Jesuits in colonial Brazil, Alden (1992) On the conflicts between Church and State in Portugal, Maxwell (1995)

⁷ See, for a summary, Schwartzman (1996), chapter 2.

kinds of “freemen” and outcasts living in dire poverty. In Europe, they would be gradually absorbed into the mainstream or forced to immigrate, while in Latin America they would remain as “marginalizados” throughout the 20th Century.⁸

The new professions, science and culture

Because of these differences, the association between universities, higher education and social progress, which has been taken for granted in Europe, was much less obvious in Latin America and other parts of the world. It is possible to follow, throughout the 19th and early 20th century, the effort of engineers, medical doctors, lawyers and other educated groups to transform their countries into European-like societies, through the adoption of their scientific competencies, while building their own professional institutions. Society was ill, claimed the doctors, and had to be cared for by the medical profession to get rid of its vices and start a healthy life. Part of the problem was the environment, which had to be cleaned; and part was the consequence of bad habits and wicked behavior, which had to be reformed. However, a large part was racial – social values, character and virtues were supposed to come from the blood, and the emergent science of Eugenics was to provide the mechanisms to purify the race from miscegenation and inferior breed.⁹ The cities were chaotic, there were no roads, no trains, no strong defenses against pirates and foreign invaders, claimed the engineers, and they had to be called to build fortifications, open roads, create new cities and remake the old ones. The problem were the outdated courts, administrative practices and legislation, argued the lawyers, which sought to copy and adapt the

⁸ For the “dangerous classes”, see Chevalier (2000). For cities in Latin America and Europe, Bender (1982); Wirth and Jones (1978) On the freemen in 19th century society in Latin America, Mattoso (1986) On the uses of the notion of “marginalidad” in Latin America, Germani (1973); Vekemans, Silva Fuenzalida and Giusti B (1970); and Faria (1978)

⁹ On the spreading of racial and Eugenic ideologies, see, among others, Stepan (1991); and Skidmore (1993)

latest institutional arrangements they could get from Europe and the United States (Coelho 1999 Schwartzman 1991).

In many ways, society was transformed, but not to the extent and the ambitions of these new elites. Their scientific and technological powers were much smaller than they pretended, and they seldom touched the country's deeper roots of social backwardness and inequity: slavery, which persisted in Brazil until late in the 19th century; the predatory use of natural resources; and widespread illiteracy. Even so, after a period of turbulence and uprisings, in the mid 19th century the lawyers and the military were able to consolidate the Brazilian state in a vast territory, with secure frontiers and an orderly constitutional monarchy that ruled the country for half a Century.

At the turn of the century, Brazilian scientists at the Instituto Oswaldo Cruz in Rio de Janeiro were able to rid the country's main cities from yellow fever, smallpox and other diseases that used to devastate the population and keep foreign ships away from Brazil's main ports. New cities were built, like Belo Horizonte, and urban renewal changed the face of Rio de Janeiro.¹⁰ In the following decades, the professional faculties and schools in Rio de Janeiro, São Paulo, Belo Horizonte and Recife, continued to transmit modern ideas and generate social, intellectual and political movements of different kinds. The Polytechnic School in Rio de Janeiro was the hotbed of Positivism, which argued for science and technology against the values of tradition and religiosity, and led to the inscription of August Comte's motto of "Order and Progress" in the Brazilian flag. In 1922 a "Week of Modern Art", led by painters and writers in São Paulo proclaimed the need for a renewed Brazilian culture, based on the rediscovery of the country's

¹⁰ On the Imperial political elite in the 19th, Carvalho (1980); on the sanitation campaigns, Stepan (1971); on the urban reform in Rio de Janeiro, Needell (1984); on the construction of Belo Horizonte, "Minas nova da cidade nova", in Bomeny (1994), chapter 3, 47-68.

native experiences and spoken language, and a new esthetics free of academic formalisms. In the military academies of Rio de Janeiro and Porto Alegre, young officers rebelled against the old military bosses, claiming for changes that would free the country from the traditional oligarchies and open the way for the new generation of professional soldiers.¹¹

The first universities

All this activity was the work of intellectuals and professional groups, who happened to have studied abroad or gone through one of Brazil's professional schools. The notion that the country lacked a university, and, more broadly, a national education system, had lingered since independence, but would only gather weight in the twenties and thirties.¹² In 1920 the king of Belgium made a state visit to Brazil, and, to provide him with a degree of Doctor Honoris Causa, the professional schools in Rio de Janeiro were brought together under the name of "University of Brazil", and a ceremonial rector has nominated to perform the task. Throughout the twenties, civic associations were created in Rio and São to agitate for public education, and one of the countries' most prestigious newspapers, *O Estado de São Paulo*, surveyed the country's elites about the need for a national university and public education. In 1930, a new generation of politicians, intellectuals and military officers came to power, and legislation was enacted establishing a national university in Rio de Janeiro, which should provide the standard for similar institutions in the country. The main innovation was the creation a Faculty of Philosophy, Sciences and Letters, which was to be a place for academic scholarship - it would develop research, educate

¹¹ For a panoramic view of education institutions in the early 20th century, see Azevedo (1971)(published originally as an introduction to the 1940 Brazilian demographic census). For the modernist movement, Johnson and Vieira (1989); Johnson (1989). On the young military, Forjaz (1977). On the Brazilian military, Coelho (1976)

¹² On the history of the debates and proposals for a Brazilian university, see Barros (1959); and Paim (1981)

the teachers for the education of the young, and provide scientific support to the old professional schools. At the same time, proposals for a “new school” for basic education were put forward – it should be universal, free of charge, based on the local communities and pragmatic, in line with similar ideas being adopted in the United States.¹³

It would not be so simple. In those years, Brazilian politics was fragmented by conflicts between civilian leaders, military activists, political oligarchies and emergent business groups; supporters of European fascism and of West European and American liberal democracy; conservative Catholics and left-wing intellectuals.¹⁴ Three competing projects for a Brazilian university emerged in the 1930s, two of them with lasting consequence and influence.

In the country’s capital, Rio de Janeiro, intellectuals, scientists and educators got together to create a university which would embody the values of the enlightenment, science and university education, the “Universidade do Distrito Federal”, which would not last more than a few years. It enlisted the country’s leading intellectuals of the time and had the support from the mayor in Rio de Janeiro, but did not have significant resources, and collided with the project being developed by the national government. In 1931, a political pact celebrated between the Brazilian government of Getúlio Vargas and the Church established that all education matters would be subject to the Church’s supervision, and that the University of Brazil, still to be created, was to be ruled according to strict conservative Catholic principles. In 1935 the Brazilian Communist Party staged an attempt a military uprising against the regime, and from then on the national government moved to the extreme right, deposing Rio’s mayor, arresting intellectuals, imposing censorship, and closing the fledgling city university. The project for a National

¹³ For the education reforms in the 1930’s, Schwartzman, Bomeny and Costa (2000) For the proposals for basic education, Azevedo (1932)

¹⁴ For a historical overview, Skidmore (1967). For an interpretation, Schwartzman (1988)

University proceeded under the leadership of the Minister of Education, Gustavo Capanema. Mussolini's architect Marcello Piacentini was hired to plan for an University City (in fierce competition with Le Corbusier and his followers in Brazil), detailed plans were made for the curriculum of each subject to be taught, professors were brought from France and Italy, and in 1939-40 Rio's Faculty of Philosophy, Sciences and Letters received its first students.

The Federal government, however, had already lost its race for primacy and leadership to another university project, that of the political and economic elite of Brazil's richest state, the state of São Paulo, a region of coffee plantations, a growing industry and a strong presence of European and Japanese immigrants. The state's elites were against political centralization in Rio de Janeiro, and in 1932, they staged a failed uprising against the federal government, marking a long period of tensions and conflicts between the country's political and economic centers. The project of the University of São Paulo was conceived in this context, as part of the challenge of a raising bourgeoisie in São Paulo against the authoritarian bureaucrats in Rio de Janeiro. Following the Federal legislation, they would also build a Faculty of Philosophy, Sciences and Letters. All the professors in that Faculty had to be hired from abroad, and there was money for that. They would bring mathematicians, physicists and biologists from Italy and Germany, but, for the social sciences, they would look for French intellectuals. In 1934, the new university was already in place, bringing together the old professional schools of the state, and the inauguration of the Faculty of Philosophy.¹⁵

Of the three projects, the University of São Paulo, USP, was the most successful. Several of the foreign professors would stay in Brazil during the war, and inaugurate or shape the country's main research traditions in chemistry, physics, genetics, and the social sciences. The

¹⁵ For an unflattering remembrance of these years, see Lévi-Strauss (1997). See also Lévi-Strauss and Mendes (1996).

old professionals schools and institutions in Medicine, Engineering, Law, Agriculture and other areas continued to grow and improve, following the State's progress as an industrial, urban and cultural center. After the war, the University built its campus, and started to branch out to other towns in the state's countryside. Today, with about 40 thousand students, and strong graduate programs in most fields and a yearly budget of around a billion dollars, the University of São Paulo remains, arguably, Brazil's leading academic and research institution.

Initially, the University of Brazil in Rio de Janeiro fared less well. Although it received some foreign professors, ideology prevented the social sciences to flourish, and political patronage and influence played their part in the selection of its professors. The ambitious project of a Mussolini-type University City never materialized, and its Faculty of Philosophy and Science never had the luster and prestige of its Paulista counterpart. Years later, a campus was to be built near Rio de Janeiro's international airport, without, however, a recognizable campus atmosphere. In some areas – particularly in medicine and biomedical research – the University benefited from existing traditions, and, after the 1960's, as the Federal University of Rio de Janeiro, UFRJ, it benefited from National programs supporting scientific and technological research and graduate education. Today, UFRJ is the largest Federal university in the country, and disputes with USP the country's primacy in research and graduate education.

The post-war years: from elite to mass higher education

After the Second World War, the pace of social transformation increased, with urbanization, industrialization and the expansion of working opportunities in services and in the public sector. The table below provides a picture of this transformation in thirty years:

Table 1 - The transformation of Brazilian society, 1950-1980

The transformation of Brazilian Society, 1950-1980		
	Around 1950	Around 1980
Population in cities of more than 20,000 inhabitants	21.0%	46.0%
Employment in the primary sector	60.0%	30.0%
Technical, administrative, and similar occupations	10.0%	19.0%
Occupations in industries	13.0%	21.0%
Coffee as percentage of total exports	60.0%	13.0%
Industrialized products as percentage of total exports	-	57.0%
Literate population (10 years and more)	43.0%	74.5%
Population of 19 years and more with 8 or more years of education	1.9% (1940)	22.8%
Enrollment in higher education institutions as % of age cohort	0.9%	10.0%
SOURCES: (Faria 1986); (Castro 1986); and Brazilian censuses.		

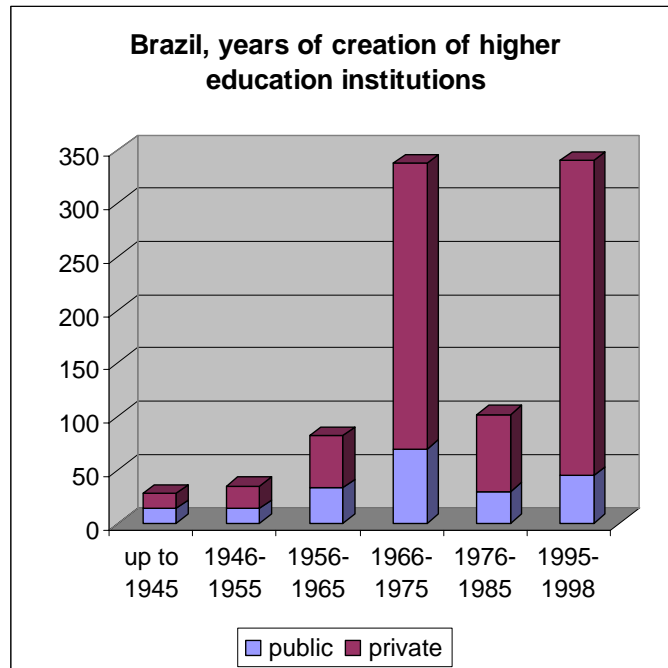
This was not, however, an easy transition. In the first twenty years following the War, the economy expanded, exports grew, foreign capital flew in, and a bright future of optimism and progress seemed to be just around the corner. In 1955, President Juscelino Kubitschek decided to build the capital city of Brasilia, a thousand miles from Rio de Janeiro; invited the car industries of Europe and the United States to establish industrial plants in Brazil; cut the countryside with paved roads, and promised to bring fifty years of development during his five-year mandate (Alexander 1991). Economic and social development, however, were not distributed evenly. The cities became overcrowded with migrants coming from the countryside and small towns, in search of jobs and the amenities of urban life. Social mobility was intense, but the population was growing, and the distances between poor and rich were not reduced (Pastore 1982). By 1960, inflation was picking up, and aspirations gave way to frustration. As the winds of Cold War blew, local conflicts were translated into left and right confrontations. In 1960, a demagogue, Jânio Quadros, was elected President. Six months later he resigned, starting a period of political turbulence that ended with the

establishment of a military regime, which would last for twenty years.

Higher education followed, rather than led, this period of intense transformation and social mobility. Urban life and a growing public sector required more lawyers, medical doctors, engineers, dentists, pharmacologists and administrators. The aspirations for middle-class and professional jobs increased much more rapidly, and higher education, until then limited to a tiny segment of the population, started to expand. Beginning with the university in Rio, a network of federal universities was established, with at least one institution being created in each state, some by bringing together the local professional schools, others created anew. São Paulo kept and expanded its state institutions, and other states followed suit. The public sector was never big enough to accommodate the demand, and private higher education grew at a similar pace until the mid eighties, when it started to increase its relative weight (figures 1 and 2)

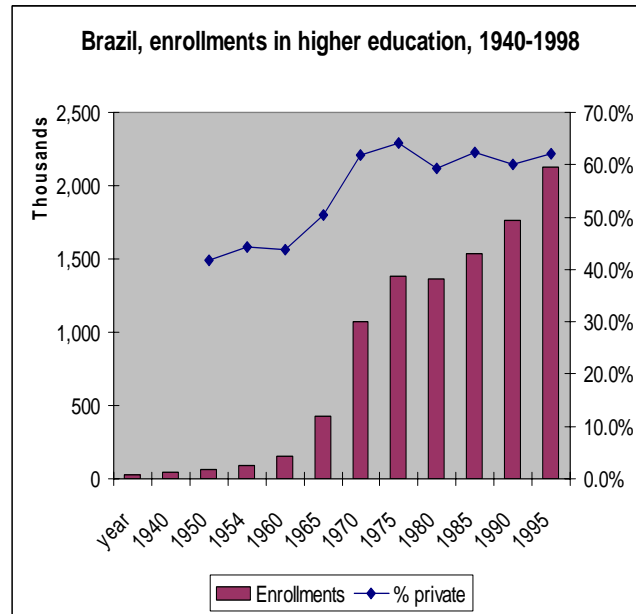
It is important to divide this period in two parts, separated by the reform of Brazilian higher education, which took place in 1968. Until then, higher education was organized in professional schools, with no graduate education and very little university research, except at the University of São Paulo, in some medical schools not much else. These schools were either independent or linked in loose university federations, presided a ceremonial rector. Professors and lecturers were drawn from the professions, taught part-time, and did not earn much from their academic work, besides prestige and recognition. As the economy expanded, higher education gave access to new opportunities, even if its quality left to be desired. However, not everybody was happy with the situation. For a small but outspoken segment of students, particularly in Law, the social and the natural sciences, higher education institutions were not doing enough to open up to the poor who did not have access to their benefits, did not deal with the social and economic issues the country faced, and did not do enough research. They did not do what they should because they were controlled by small, conservative elites that cared only about their private interest. A new university - more open, more democratic, more committed, and research based - had to be created, from the ashes, if needed be, from the existing institutions.

Figure 1 - Brazil, years of creation of higher education institutions¹⁶



¹⁶ Based on information provided to the 1998 national census of higher education, Ministry of Education, INEP.

Figure 2 – Brazil, enrollments in higher education, 1940-1998¹⁷



Political mobilization

Student activism is an old Latin American tradition, dating back, at least, from the University Reform movement that started in Cordoba, Argentina, in 1918, and spread from there to other countries in the region. The reformists accused their old professors of incompetence and authoritarianism, and claimed for university autonomy, in which students, teachers and former students would decide, democratically, who the university authorities should be, who should be hired to teach, and the contents of their teaching. Governments had to pay the bill and let the academics take care of themselves. The Reform movement did not reach Brazil, but in the early forties, a National Student Union – UNE - was created to agitate in favor of Brazil's support to the Allies in the war, against those who leaned more towards Italy and Germany. The students went to the streets to press the government to enter the war, and to attack and close down the German

¹⁷ The data for 1940 to 1975 is from Levy (1986). The information from more recent years is from Brazil's National Institute of Education Research (INEP), Ministry of Education.

and Italian business, firms and institutions in São Paulo, Rio de Janeiro and other cities. After the war, UNE remained a permanent source of social and political mobilization, guided by leaders coming from the Communist and socialist parties and movements, and from the radical, socially committed members of the Catholic Church. UNE was a training ground for important figures of the country's political elite.¹⁸, and, in the mid sixties it embarked in an ambitious project to develop a national and popular theater that could, Bertold Brecht style, bring political awareness to the masses (Barcellos and Arantes 1994).

In the universities, the radical students joined forces with the small group of scientists and intellectuals who had been educated in France and England, and absorbed the ideas of J. D. Bernal and Frédéric Joliot-Curie about the role of science and technology for social and economic development. In those years, it did not seem that there could be tensions and trade-offs between research, community service, open admissions, democratic rule and political militancy of students and their teachers against the traditional oligarchies and the evils of international capitalism. The easiest response to these contradictory demands, adopted by leading Latin American countries like Argentina, Mexico and Uruguay, was to open up the gates of their National universities, and hope for the best.¹⁹ In practice, most students entering these mega institutions never completed their degrees; politics prevailed over technical and professional education, and very little was done in terms of research.

The university reform

Higher education in Brazil started to expand later than in other countries in the region, and under authoritarian rule. In the sixties and seventies, authoritarian governments confronted

¹⁸ Persons like José Serra, presidential candidate in 2002, and Sepúlveda Pertence, member of Brazil's Supreme Court.

¹⁹ For a detailed analysis of the Mexican case, see Levy (1980)

leftist students and intellectuals in most Latin American countries, with different degrees of violence and ruthlessness on both sides. In some countries, like Argentina, higher education institutions suffered heavy damage; in others, like in Venezuela and Peru, student movements evolved into military guerrilla warfare, Che Guevara style; in Chile, higher education suffered strong intervention, and was completely changed. In Brazil, conflict was less intense, and in 1968, a university reform law was introduced, which incorporated many of the demands of the science-oriented researchers and educators of different ideological persuasions. The reform tried to introduce in Brazil the features of the American higher education: departments, instead of professorial chairs; the credit system, instead of pre-ordained course programs; and graduate education (Schwartzman 1988).

As important as the legislation were the transformations that took place at the time. The new legislation assumed that all higher education would be provided through research-based universities, and did not consider the enormous pressure for mass higher education that existed already. The solution, in practice, was to reduce the restrictions and controls for the creation of new private institutions (Figure 1). The consequence was polarization. In one extreme, public institutions that moved towards the university-research model, absorbing about a third of the students; on the other, private schools providing routine or mediocre teaching, mostly in the evenings and in the social professions – administration, law, accounting – absorbing the other two thirds (Table 2).

University research grew considerably in the 1970s', thanks to the existence of resources and to the creation of new agencies concerned with the issues of scientific and technological development. It was a brief period, from the first years of economic expansion, in the early seventies, to the oil shocks at the end of the decade. In those years, many graduate education and research groups were started, and the government embarked in different policies for

technological self-sufficiency, a nuclear energy for civilian and military purposes, a space program, and a policy for self-sufficiency in the production of microcomputers. Most of these projects were abandoned or left to linger with the economic crisis in the eighties, and the end of the military regime in 1985. However, the research institutions and projects established in the seventies remained in place, under the loose coordination of an ambitious, but weak Ministry for Science and Technology created by the first Civilian government (Schwartzman 1994).

Not all public universities, however, achieved research-university status. The more traditional professional schools in Medicine, Engineering and Law resisted the new legislation, adopting its terminology and formalities without changing their routines. New departments, however, were created according to the new legislation, and the rectors' offices increased their power, having to deal with research contracts, campus administration, entrance examinations, and other issues. Starting with the 1968 reform, the universities began to hire full-time lecturers, who were supposed to go through a series of public competitive exams in order to get tenure and promotion, and to hold graduate degrees. In practice, the initial freedom some universities had to decide on payment scales and recruitment policies were limited by budgetary constraints, the existence of a large body of lecturers already in place who could not be dismissed, and the pressure towards uniform policies and criteria. These leveling trends reached their climax with the new Brazilian Constitution, established in 1988 under restored civilian rule. Since then, all public university lecturers are civil servants, and cannot be fired or transferred; payment scales are the same for all universities, and defined by the National government²⁰. Salaries are not very high, but competitive, and the fringe benefits are excellent – job stability, long vacations, early retirement, relatively low workloads, and flexibility for additional professional and consulting

²⁰ On the Brazilian professoriate, see Schwartzman and Balbachevsky (1996)

work. In comparison, with very few exceptions, lecturers in private institutions are paid by the hour; do not have significant retirement benefits, and no job stability (Table 2).

Another consequence of the 1968 reform was the creation of strong national unions of university lecturers and employees. Working full-time for the same employer, the federal or state-governments, and subject to the same pay scale, the lecturers got organized, at first, to fight against the authoritarian policies of the military regime, and, later, for salaries and fringe benefits. They inherited the political and ideological discourse of the students in the 1960's, and, with political liberalization after 1985, joined the left-oriented national federation of trade unions, the Workers Central Union (Central Única dos Trabalhadores).

Table 2 – Lecturers and students in Brazilian higher education institutions, 2000

Docents and students in Brazilian higher education, 2000						
	Type of institution					Total
	non profit	state	federal	municipal	private	
number of institutions	297	61	61	54	660	1,133
teaching staff:	58,178	33,730	50,165	4,259	51,379	197,711
of which:						
no degrees	0.1%	0.2%	0.0%	0.0%	0.0%	0.1%
undergraduate						
degrees	16.2%	14.6%	15.7%	16.3%	16.2%	15.8%
specialization						
degrees	38.4%	26.8%	16.3%	49.6%	42.5%	32.1%
master degrees	81.9%	30.7%	15.1%	82.5%	85.2%	57.1%
doctoral degrees	12.6%	33.1%	33.4%	9.6%	9.9%	20.6%
women	42.9%	39.3%	40.1%	38.6%	40.4%	40.8%
full time	18.1%	69.3%	84.9%	17.5%	14.8%	42.9%
Students:	925,939	332,104	482,750	72,172	880,555	2,693,520
of which:						
in evening courses	60.8%	44.6%	23.1%	75.6%	71.8%	56.1%
in law, business and						
social sciences	47.3%	19.9%	24.3%	43.7%	53.2%	41.6%
women	57.8%	57.9%	50.6%	56.9%	57.0%	56.2%

Source: Ministry of Education, Higher Education Census, 2000

Higher education and social transformation

As Brazil evolved from a rural-based economy in the thirties to an urban, industrialized society fifty years later, higher education developed to provide channels of social mobility to new social groups, and to train and educate new generations to fill the jobs in public and private sectors. Student leaders and academics raised the flags of democracy and freedom against the Vargas dictatorship and in support of Brazil's joining the Allies against the Axis. After the mid-sixties, under the authoritarian military regime, the Brazilian Association for the Advancement of Science was one of the few platforms where criticism against the government could be raised. The yearly conferences of SBPC would bring together the country's most prestigious scientists, the meetings received strong press coverage, students flocked to attend the round tables and presentations, and the authorities did not dare to intervene. The sessions covered all subjects, from arcane papers on biology and physics to discussions on education, science and technology, the economy, social conditions and the political regime. At the same time, a few research and graduate education programs, in public and private institutions, kept alive the analysis of political authoritarianism and social inequity. Thus, the Institute for Research in Applied Economics (IPEA), a think tank within the Ministry of Planning, published the first studies on the problems of income inequality that accompanied the Brazilian "economic miracle" of the 1970's; the Brazilian Center for Research and Planning (CEBRAP), led by the sociologist (and, later, Brazilian President) Fernando Henrique Cardoso developed a broad research portfolio, covering the fields of labor relations, the entrepreneurial, working and rural classes, demography, and political institutions. In Rio de Janeiro, the Instituto Universitário de Pesquisas (IUPERJ) developed a solid graduate program in sociology and political science, working in the field of political institutions, authoritarianism, race relations, international affairs, and several others. All these institutions created their own academic journals – *Pesquisa e Planejamento Econômico* (IPEA), *Estudos CEBRAP* and *Dados – Revista de Ciências Sociais*, which kept high standards of scholarship and, differently from the daily press, did not suffer any kind of interference or censorship²¹

²¹ On the Brazilian Society for the Advancement of Science (SBPC), Botelho (1990) and Fernandes (1989); on the social sciences and its contributions, Miceli (2001); Brunner (1985) and Sorj (2001).

How well did higher education perform in reducing social inequity, improving human resources, and providing the innovation skills that are supposedly required for a country to participate in the new, globalized and knowledge-intensive world economy?

Higher education and social equity

The record on social equity is at best mixed. As the country grew and evolved, higher education provided learning opportunities not only the children of the old elites, but also to those of foreign and rural immigrants and poor urban dwellers. Brazil's income distribution, however, remains one of the world's worst, and higher education may have contributed to this, by remaining limited to relatively few people and by increasing the weight of formal education and credentialism in the determination of wage levels and working opportunities.

A comparison of data from the National Household Surveys of 1992 and 2001 shows that growth in higher education in recent years was not related to a significant reduction in the proportion of students coming from the upper economic brackets (Table 3). This finding suggests that, although there was more access to higher education, this increase occurred mostly in the upper strata, where enrollment has been and still is particularly low, in comparison with other countries.

Table 3 -Brazil, social characteristics of higher education students, 1992-2001

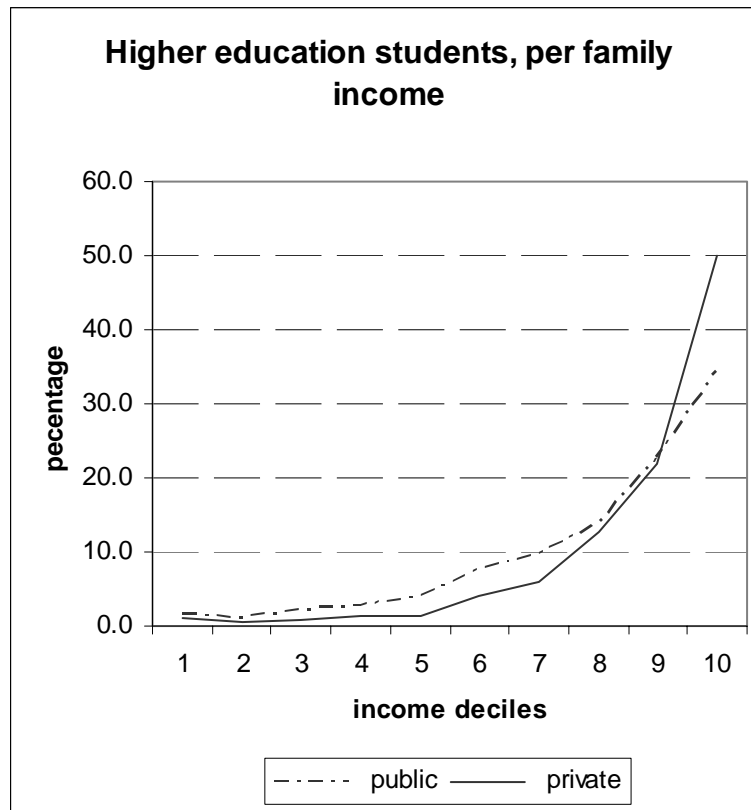
Brazil, Social characteristics of higher education students, 1992-2001		
	1992	2001
women	53.7%	58.0%
head of households	17.5%	17.4%
wives or husbands	11.6%	15.0%
sons	64.7%	61.4%
other relative in the household	4.8%	1.3%
white	80.1%	76.8%
mean age	25.2	25.7
relative household income (1)	159.8	165.0
percentage coming from the top 10% income group	45.6%	42.6
percentage coming from the lower 50% income group	8.5%	7.2
total students	1,433,206	3,462,832
Source: Calculated from IBGE, National Household Sample, Survey 1992-2001		
(1) for national average = 100		

The public - private duality adds another dimension of inequity. Access to higher education in

public universities and in the most prestigious careers is restrained by entrance examinations that can be extremely competitive. Less endowed students, financially and educationally, end up in less prestigious fields and institutions, and in the private sector. The general assumption has been, therefore, that students in the private sector are always from lower social backgrounds. This, however, is not so simple. Data of the state of Ceará analyzed by Jean-Jacques Paul “shows that the federal and private institutions have a similar socioeconomic profile, while students in the state institutions have a distinctive lower socioeconomic status.” The main differences are associated with the choice of careers. Students with high socioeconomic status go to civil engineering, data processing, medicine, dentistry and administration in the federal university, and data processing and administration in the private sector; students with low SES study geography, nursing and literature in federal universities; literature, pedagogy, geography and science (evening courses) in state universities; and geology and literature in the private sector. “Clearly, then, certain courses attract students of higher or lower socioeconomic status, irrespective of whether they attend public or private institutions” (Paul and Wolff 1992, p. 544-545). Data for São Paulo students show the same pattern: there is not much difference in family income between students in public and private institutions, although there are important differences in their parents’ educational levels. Most of the differences, in any case, are explained by differences in career choices, or career opportunities. Students in pedagogy, for instance, come from low SES strata, while students of dentistry and marketing come from the higher ones.²² Analysis of the socioeconomic questionnaires given to students participating in the National Careers Examination (known as “*provaão*”) shows a higher proportion of poor students in public than in private institutions (Sampaio, Limongi, and Torres 2000). Recent information obtained from the National Household Sample Survey of 2001 confirms that, proportionally, there are more students coming from the upper income groups in the private than in the public sector.

²² Sampaio (2000); Cardoso and Sampaio (1994). Career choices are determined, presumably, by a combination of the prestige and expected status of the professions, and the difficulty of the entrance examinations. Another important factor is the professional activity the students already have. Students of pedagogy, for instance, tend to be schoolteachers seeking a university degree to get better salaries and opportunities for promotion.

Table 4 - Higher Education students, per family income, 2001²³



It would be reasonable to ask students from richer families in public universities to pay for their study, but no government dared to propose such a policy, fearing the strong reaction from students. Private institutions cannot get public subsidies except for research, and depend on tuitions to exist. There is a small program of student loans, which is limited, however, by high levels of default. In recent years, public universities have been pressed to create evening courses²⁴, and there are several proposals and some experiments in introducing quotas for students coming from public secondary education of black origin. One difficulty of such proposals is that they are not being accompanied by programs to compensate or adjust the course programs to the more limited backgrounds of these new students. More broadly, the assumption that all Brazilian higher education follows the same, unified model has limited the system's

²³ Source: IBGE, National Household Sample Survey, 2001.

²⁴ They already exist in state universities, but very little in federal institutions.

ability of diversify and adjust to different segments of the population, leading to large number of students giving up their courses before obtaining their degrees.

Is higher education providing the skills the country needs for its economy? To answer this question, we need first to know which the skills are needed. Table 5 shows the occupations of persons with higher education in Brazil in 1992 and 2001. The pattern is similar to what is found in other countries in the region, and has remained remarkably stable throughout the 1990s. Most of the employment is in services, social activities and government; industry, already a small sector in 1992, lost almost 3% of its share of the educated labor force in the decade. During this period, the availability of regular jobs, both private and public, have dropped significantly, being replaced by self-employment and other working arrangements.

The distribution of students by fields of study is compatible with this picture. According to the 2000 higher education census, 41.6% of the students are in the applied social sciences (administration, law, economics), and 21.7% in the humanities (including education and language). Health takes up 12%, and “exact sciences” (including teacher training in mathematics) another 8.7%. Engineering is also a small field, with less than 9% of the total enrollment. Federal institutions specialize in the most technical and scientific-intensive fields (biology, engineering, health, agriculture), while private institutions specialize in the social professions. The fields covered by public institutions are mostly provided through day courses – biology, engineering, health, agriculture – while the social professions, humanities, arts, literature, and “exact sciences” are given in the evening.

Table 5 – Brazil, occupations of persons with higher education, 1992-2001

Brazil, occupation of persons with higher education, 1992-2001				
	Proportions		Change	mean monthly
	1992	2001	1992-2001	income 2001
Agriculture	1.6%	1.2%	14.9%	2,392.43
Industry	11.3%	8.5%	21.6%	1,489.33
Construction	2.5%	1.8%	15.4%	2,020.87
other industrial activities	2.1%	1.3%	-3.8%	2,099.14
commerce	7.9%	9.0%	86.2%	1,497.43
Personal services	2.8%	4.7%	175.9%	2,386.64
Services to business	11.4%	14.7%	107.1%	2,341.02
Transportation and communications	2.3%	2.4%	65.8%	2,750.53
Social professions	36.5%	37.6%	66.7%	2,238.62
Public administration	14.0%	13.1%	50.7%	2,701.85
other activities	7.5%	5.8%	25.4%	2,582.47
total	100.0%	100.0%	61.8%	1,991.68
number of persons	3,956,193	6,536,482	83.1%	

Source: tabulation of data from the Brazilian National Household Survey (PNAD/IBGE), 1992 and 2001

Quality and the requirements of the knowledge economy

The quality of higher education in Brazil is very uneven, with some good quality course programs in some state, public and private universities, and many courses of mediocre or unknown quality both in the public and the private sectors. In recent years, the Federal government introduced an evaluation system for higher education course programs, which is done through tests given to students when they are about to graduate. However, the government publishes only the relative position of each course program in a national ranking, not their placement regarding a quality standard. Law is one of the few areas where professional certification requires not only an academic degree, but also an additional exam, provided by the Bar Association. In spite of its limitations, this exam can be taken as a standard to evaluate the law students coming from Brazilian higher education institutions, and they show that less than 20% of the candidates are approved in a given year.²⁵

²⁵ For a critical view of the Bar exam and other comparative assessments, see Nunes, Nogueira and Ribeiro (2001). According to the newspaper *Folha de São Paulo*, about 14 thousand students who applied to the latest Bar examination in the State of São Paulo, 81% failed. In medicine, in spite of the difficult entrance examinations, half the graduates never complete medical residence or specialization, and have difficulties

How much quality, however, is needed for the country to participate in the modern, globalized and knowledge-intensive economy? The evidence coming from studies done by the United Nations Economic Commission for Latin America show that economic growth through knowledge-intensive industry in the region is being limited to a few sectors of the economy in a few countries, and is capital intensive in any case, requiring well few qualified professionals and specialists (Sainz and La Fuente R. 2001). There is a growing consensus that the abilities more widely required by the modern economies are not vocational or highly specialized, but broader, related to the use of language and quantitative reasoning. These abilities are best provided in secondary education, and the notion that mass higher education is an economic and technical requirement of modern societies is questionable (Wolf 2002). If this is so, then the expansion of higher education in Brazil as it is taking place, heavily subsidized and of uneven quality, may be more a burden than asset for the country, by diverting public resources from other priorities like secondary education, and by placing artificial premiums on educational credentials without much substantive content.

A modern economy requires highly skilled scientists and engineers, even if not many, and the policies established in Brazil in the 1970's grew into the largest and better-developed graduate education and university research system in the region. In the year 2000, there were 1,473 degree-granting graduate course programs, more than half providing doctor degrees, with about 97 thousand students. Almost all these programs are in federal universities and in public universities of the state of São Paulo; 8.3 thousand MA and 5.3 thousand doctoral degrees were granted in 2000. Brazilian industries are not able to absorb all this manpower. The Brazilian National Household Survey of 1999 found 231 thousand persons with graduate education (including, presumably, specialization degrees), working mostly in teaching (20%) or as medical doctors (12%); one third of them were civil servants. Other sources indicate that there were about 12 thousand persons doing research and development in about 1.8 thousand companies in the country, and 27 thousand researchers working in 12 thousand "research groups" surveyed by the Ministry of Science and

finding a job. An undisclosed assessment made by an inter-institutional commission for the evaluation of medical education found that most course programs in medicine in Brazil were "mediocre". Lima and Rodrigues (2002).

Technology. Detailed tracer studies show that most graduate students find jobs in academic institutions, except for those in administration, medicine and engineering (Velloso 2002)

Potentially, this scientific and technological competence could be an important factor in making the economy more effective and productive, in tune with the modern global markets. However, scientific and technological competence is just one among other elements that make up the “innovation systems” that are considered essential for this kind of transformation. The ability to participate and to compete at the edge of technological development and innovation is limited, today, to a select group of countries which concentrate most of the world’s scientific and technological capabilities – or, more specifically, to some areas and sectors of these countries. Developing countries and smaller economies can share the benefits of knowledge societies if they are able to link to the international economy, get the knowledge and information they need, and develop their own competence for innovation. They need to develop their “platform for transfers” and participation, which requires a large stock of qualified manpower; a significant research and development establishment; infrastructure for information exchange and communications; economic integration with the international markets; the ability to acquire technologies from abroad, both in hardware and in intangible resources; the involvement of the private sector with research and development activities; and strong and fluid links between universities and industries.²⁶

The creation of effective innovation systems, including good-quality higher education, requires deliberate policies, and cannot be expected to derive from short-term market demands. If a country is successful in developing the whole set of requisites needed to participate in the modern, knowledge-based society, then an extended and good quality higher education and research sector is a crucial component of this whole. If it is not, higher education and research can continue to expand and even improve its quality and efficiency up to a point, without, however, generating the expected benefits, and creating frustration and cynicism among the educated population.

²⁶ The previous paragraph is taken from Brunner (2001). For a broad view of the achievements and limitations of the education and innovation systems in Latin America, see The World Bank (2002)

Conclusions

This overview of the origins, development and current stage of higher education in Brazil suggests that, through the years, this sector has played important roles in providing social mobility to emerging social groups, in opening spaces for intellectual activity and political mobilization, in providing important segments of the population with professional and cultural skills, and in developing scientific and technological research capabilities. At the same time, higher education has not contributed to the reduction of Brazil's grave problems of social inequity and income distribution, and has followed, rather than led, the social and economic transformations that have taken place. There are serious problems of quality, inequity and waste of public resources.

There is no consensus on the policies that could be implemented to make higher education better, and to contribute more to social and economic development, and social equity. It is unlikely that the federal and state governments could spend more on higher education, given other social priorities and the need to keep the budgets under control. Tuition in public institutions could only be introduced at a very high political cost, and without adding too many resources in any case²⁷. So, the public sector, which attends only about 30% of the students, will have to live at best with what it already has, and respond to a growing pressure to increase enrollment and to provide more access to students from poorer social and educational background. In the private system, there is a small niche for high quality, expensive private higher education in business and a few other areas, but most of the institution will remain providing evening courses to lower class students with limited backgrounds and no resources to pay much.

It should be possible, however, to do more with the same resources. Public institutions could perform better if they took responsibility for the use of their resources, and received support according to their performance. Salaries for academic and administrative staff could be improved, and the total expenditures reduced, if the existing flat and uniform civil-service careers were replaced by a well-functioning merit system, an effective market for competencies, and the replacement of full time by part

²⁷ Estimations are that tuition could cover, at best, something between 10 and 20% of the cost of public higher education institutions.

time employment when the former is not required. Retirement benefits, which are a major source of the current financial squeeze, could be brought in line with the conditions prevailing in the private sector. Changes in the regulation of professions could reduce the demand for academic credentials, making the contents of higher education more relevant to the student's personal and professional lives. A more determined policy of institutional differentiation could reduce the demands on most private and many public institutions to pretend that they are doing research and providing advanced graduate degrees, and allow them to provide acceptable general, professional and technical education.

What most of these policies have in common is that they go against the vested interests of the major stakeholders within the higher education institutions - teachers, professional corporations, education authorities, student unions, and owners of private institutions. Stakeholders from outside - future employers, prospective students, taxpayers, and student's parents - are less present, and less able to perceive and articulate their needs (Schwartzman 1998)

To improve equity, Brazil has been experiencing recently with quotas for students coming from public schools and of African origins, public universities are being asked to admit more students without additional resources, and there is a commitment, from the Federal government, to expand the existing student loan program for students attending private higher education. These policies are attempts to deal with some of the effects of inequity, but, so far at least, have not been accompanied by proposals for reform. They suggest that higher education institutions, particularly in the public sector, may be more vulnerable now than in the past to outside pressures. At best, this vulnerability could lead the higher education community to confront its problems and limitations, and find better ways to deal with some of the causes of social inequity, and not only with its consequences. There is a risk, however, that higher education could be overwhelmed by the new demands and lose its ability for self-regulation, to maintain and increase its commitments to the values of merit, achievement, and social responsibility. Until a better balance is attained, the contribution of Brazilian higher education to the continuous transformation and improvement of Brazilian society will remain limited.

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