Higher Education at the Brink

It is well to keep in mind that while it is easy to take for granted the present system of higher education, which in the United States, includes both the research multi-versity and two year "community" colleges, this system is of very recent vintage. The contemporary multi-versity is understood here to refer to the very large institutions with many, not necessarily, consistent goals, including undergraduate education in the arts and humanities, specialized graduate education in all areas, and pure and applied research across an immense range, from nuclear physics to consumer behavior. It has its origins only in the last decades of the nineteenth century; the idea that all capable students should have access to higher education dates only from the end of World War II. We are presently seeing the beginnings of radical change in this system, at least as radical as the development of higher education which began at the turn of the present century. The emergence and development of the modern university system is part and parcel of the nineteenth century history of modern industry and the modern nation state. This last radical change can be summarized briefly.

First, there occurred a symbiosis of science, industry and the state--in this century an essential attribute of the basic mode of production of a modern economy. Prior to the middle of the nineteenth century, "science" went on almost completely outside the University. Men like Cavendish and Joule could afford private laboratories and Davy and Faraday independently pursued their inquiries with help from Count Rumford and funds which they secured from landowners interested in "modern" farming. The establishment in France of the *Ecole polytechnique* during the 1790s provided a critical precondition: the breaking down of the barriers which had separated the "classical" mathematical sciences from the Baconian and applied sciences: chemistry, magnetism, and heat. But the Germans, late modernizers, will most fully exploit this new opportunity. In marked distinction from the Universities of Britain, Italy and France whose roots were medieval, the "new" University of Berlin (1810) had established the institutional background for a new kind of university in which "institutes" would provide "particular knowledge" as well as "general philosophical education" (1). By the mid-nineteenth century, German science, especially chemistry, mathematics, physics, and physiology had eclipsed all others. Self-conscious modernizers, the Bismarkian state promoted industrialization and applied science. Aniline dyes (1856), cellulose derivatives: lacquers, photographic plates and modern plastics (1868), synthetic resins (1909), chemical fertilizers and poison gas were but some of the discoveries. At the same time, electricity, the self-executed electromagnetic generator, the ring dynamo, and the incandescent lamp, were developed by leading German industrial firms which were quick to cash in. By the turn of the century Badishe Anilin, Hochst, AGFA and others had 90% of the world market in the new wonders of chemistry. Seimans was a world leader in applied electrical innovation. Not only had science and scientists acquired a kind of authority formerly reserved only for shaman, but its advancement could be secured institutionally: in the new University. In a 1862 address, Helmholtz brilliantly summarized the new ideology. Since "all nations are interested in the progress of knowledge for the simple reason of self-preservation,

> men of science form...an organized army labouring on behalf of the whole nation, and generally under its direction and at its expense, to augment the stock of knowledge as may serve to promote industrial enterprise, to adorn life, to improve political and social

relations, and to further the moral development of individual citizens (2).

Second, industrialization and urbanization (and in the US, immigration) created "the social problem." And as suggested by Helmholz's remarks, it was clear enough to well-placed educational entrepreneurs that "scientific knowledge" could be directed to aiding in its solution. Alongside traditional education in the "humanities," a conception of a technocratic social science emerged. The British, the first nation to confront "the social problem," responded for the need for "social research" with institutions which were totally independent of their traditional elitist Universities. Oxford could continue to cultivate "gentlemen," while the Manchester Statistical Society whose council "often looked like a subcommittee of a Whig cabinet" would do what it could "to assist in promoting the progress of social improvement" (3).

The Germans, however, were able to integrate new "institutes" which addressed social issues into the universities. But it will be the Americans who will quite literally invent most of the specialized social science "disciplines" now taken for granted in every major research university in the world. There were special conditions which made this possible (4), but critically is the fact that until the founding of Johns Hopkins in 1876, America did not have a university. The existing "colleges" of the US, Harvard, Yale, etc. offered no graduate education and the undergraduate curriculum emphasized the "moral sciences," rhetoric, and a smattering of "natural philosophy."

Indeed, the modern research university as we today know it derives most directly from the innovations constituted in the new American universities, created and funded by the fortunes of the Carnegies, Rockefellers (Chicago): Hopkins, Cornells, Stanfords and Vanderbilts, and then appropriated by the traditional colleges of America, and ultimately, by even the oldest of the world's universities.

Finally, "democracy" and the accelerating demands for specialized knowledge and a qualified workforce required that the elitism of the older European universities and American "colleges" give way to the idea that higher education should be more widely available (5). McClelland reports that in 1870 the student population in Germany stood at 14,000 (6). By 1900 it was 34,000 and by 1914, it had reached 61,000. But in the US, again for specifically historical reasons, growth far outruns these increases. By 1890 there were 154,300 undergraduate students and 2,400 graduate students; by 1920, 582,000 and 15,600 and by 1930, there were 1,053,500 undergraduates and 47,300 graduate students in the US. From WWII to the present, growth has been both continuous and remarkable. In 1995, there were some 14,261,781 students enrolled in US colleges and universities. Some 2,954,707 of these are enrolled in four-year private institutions; about half of all those enrolled in public institutions, some 5.5 million were enrolled in two-year colleges (7).

Higher education continues to be hostage to political economy and the state (8). But the conditions which produced the modern research university (and two-year community college) have been profoundly altered. Again, three features are fairly obvious.

First, globalization has undercut the idea that states can underwrite development by

fostering the sciences in the universities. This is a consequence of a number of factors: There is world-wide accessibility of scientific information, itself due to new communications technologies, both innovation and the training of qualified technical workers is now globalized, the newer technologies do not generally require massive infrastructure and investment, and most critically, corporations are global: their achievements do not necessarily redound on the nation where their headquarters are located. With shrinking government budgets and corporations increasingly financing their own R&D, funds for university research, where they are available, are increasingly derived from corporate sources.

Following on this, the social sciences have lost their authority. The tons of "findings" produced by social science researchers have contributed little or nothing to the solution of social problems which are also at least part product of global influences not controllable by the state. Symptomatic is the very recent charge of the Chair of the Massachusetts Board of Higher Education, James F. Carlin, who asserted, perhaps generously, that "at least 50% of all the non-hard-sciences research on American campuses is a lot of "foolishness' (9). Indeed, if anything, by disavowing the search for underlying causes, most social science research distracts us from real solutions. Small wonder that most citizens get a bit bleary eyed when they are told that, e.g., we do not know what causes crime or poverty or what can be done to prevent environmental disaster! Similarly, currently fashionable "postmodern" thought in the universities is a symptom of the loss of authority of social science as it was constituted in the university.

Second, higher education is no longer affordable. The Commission on National Investment in Higher Education reported that higher education will have a $38 billion dollar shortfall by 2015 and that to sustain current spending, tuition would have to double. Tuition in private schools is already astronomical--with the heavy support it already gets, and state budgets have decreasing funds for increasing costs. Thus with a rapidly diminishing share of state funding, what we once thought of as "state universities" have become "state assisted universities." Arguably the best system of higher education in the world, the University of California, now gets only about 23% of its funds from the state. Indeed, in absolute numbers, California is putting more of its funds into prisons than into its colleges and universities.

To be sure, much of the increase in current costs are for administration and infrastructure. There is deep paradox in this. Although it is easy to be nostalgic, colleges were once collegial institutions where major decisions were at least shared by the faculties. The ideology of "professional management" insisted that this was not "efficient." Preoccupied with their own professional concerns, faculties gladly abrogated government to administrators, and on bread and butter issues, to unions. Coupled with a host of demands for ancillary services, the numbers of non-teaching administration and staff has doubled while the numbers of teaching faculty has remained nearly stagnant.

Moreover, while the true costs of higher education were always underestimated, contributing to a distorted view of the current costs, and while there is sense that quality education in universities remains a bargain, because quality education requires low student/faculty ratios, it is inevitably costly. The main point here, however, is that for reasons already noted and for

reasons to be identified subsequently, governments are no longer willing to pay for it.

Finally, computer mediated technologies, now only beginning to be introduced, provide a highly cost-effective way to increase access and to respond to the demands for new kinds of skills and knowledge.

The Commission report was entitled, "Breaking the Social Contract: The Fiscal Crisis in Higher Education." It called for a radical restructuring of universities. But because the problem is not only fiscal, it suggestions were modest. There is simply no reason not to believe that in the very near future, *post-secondary education in the advanced capitalist democracies will be electronically delivered and that propelled by this and other forces, the old system will be dramatically transformed.*

Indeed, one must take very seriously the new taxonomy of Higher Education offered by the National Center for Postsecondary Improvement, based at Stanford. Instead of the Carnegie schema (with “Research I” institutions, community colleges, etc.) we have “brand name,” “mass provider” and “convenience institutions (11).

“Convenience institutions” are on the cutting edge of both the new technologies and the new markets for “education.” They are “user-friendly,” operate fully as businesses (rather than as universities) and serve “job-minded students for whom liberal-arts degrees hold scant appeal.” They provide “just about any set of skills and credentials that anybody wants to obtain—at just about any time of the day or night, through just about any medium of instruction.”

The largest private university in the US with some 40,000 students is the University of Phoenix. It has no campus, but rents space in cities across the nation for its on-site instruction. Not a place "to discover the eternal verities of the Western tradition," "it offers B.A.'s and M.A.'s mostly in business and in fields like information technology, health and education" (12). Phoenix, like the National Technology University which is a virtual university, is a for-profit university--"a kind of HMO of education."

By contrast, as Chester Finn writes:

> Brand name campuses are selective, high-status places where market power comes from their very status and selectivity. They cater to mostly full-time students from traditional age groups and have a commitment to traditional academic values—a liberal arts core, publication-minded faculty members, governance by the professoriate—and a reputation for high quality.

The dominating group of such “brand name campuses“ is, of course, the private, heavily endowed Ivy League Universities which can attract external funding while at the same time maintaining coherent, resident, high quality undergraduate programs. Along side these are a select group of smaller liberal arts colleges, e.g., Swarthmore and Williams. These elite “traditional” residential places of learning will not disappear, but as is very clear, they will be restricted to the very few

who are sufficiently well-to-do or, if the attack on affirmative action does not spill over, sufficiently eminent to be awarded scholarship aid to achieve a "balanced" student body.

The best known state universities will strive to be in this select group but most will fall into the third category, "mass provider" institutions (14). Mass provider institutions, beholden to legislators, with obligations to educate as best as they can citizens of their states, try to be all things to all people, but they come no where near to having the resources, human or financial, necessary to do this. Thus, "research" and publication is obligatory, but it goes on mostly at the expense of commitment to undergraduate programs, especially since the students are profoundly heterogeneous in terms of background, age, goals and commitment. The "typical" student today is no longer under 25 and residential. 43.5% of the total student population is over 25 and 43% are part time. Over 82% of all students are enrolled in publicly funded institutions and slightly over 70% of those enrolled in for-profit private institutions are getting some financial aid. Many come from poor high schools or have been away from school for years, many have familial responsibilities, most work, and a recent survey confirms what is well-known to their teachers: In the fall of 1997, 74.9 % of freshman put "being well off financially" as their goal while 40.8% choose "developing a meaningful philosophy of life." In 1968, these numbers were exactly reversed. Faculty are, accordingly, schizophrenic, faced with students who do not accept their values and driven by criteria which measure their success in terms of shrinking resources for research and publication.

Most mass provider institutions will also survive, but they will be very different than they were even 10 years ago (14). The changes have already begun. Under conditions of radically shrinking state budgets, three consequences are immediately evident. First, the drive to cut costs resolves the "schizophrenia" of faculty who find themselves in a three tract system in which the majority of the teaching is done by part-timers and non-tenurable faculty. Thus, the number of part-time teachers has nearly doubled since 1970. Last year they did some 40% of all the instruction. These teachers, being produced in droves by PhD granting institutions--38,000 PhD's are produced annually--are, of course, paid but a fraction of the salaries of full-time faculty, have no obligations to publish, and no claims on future employment. They are the "flexible" workforce in our post-Fordist economy. Moreover, tenure is now under threat, both head-on (as in Minnesota) or more imperceptibly: by reducing, through attrition, the relative number of tenurable faculty, now at about 50% of the total of full-timers.

Second, in competition with "convenience institutions" mass provider institutions will be much more "entrepreneurial," both in seeking funds, in experimenting with the new technologies and in marketing an increasingly diverse set of "products," including, as in Colorado a plan to offer a two-year degree wholly on the Internet, or as in Arizona, a plan to offer BA degrees for vocational programs in e.g., "law-enforcement technology," "fire science," and "chemical dependency counseling." Perhaps they will be forced to adopt something like a Phoenix arrangement with only seminars, tutoring, dance and theater and laboratory courses given on campus. Perhaps they will need to be allied with one another as the Western Governor's University or perhaps they will form permanent alliances with corporations. As suggested by Gordon Davies (without irony), "an example might be an alliance of the University of California, the Walt Disney

Company, and MCI" (15).

Third, there are huge pressures to restrict access to "traditional" liberal arts institutions. Mass provider institutions have always tried to compete with the brand name institutions and to their immense credit, to a considerable extent, they have been successful. But these days are now gone. The University of California and The City University of New York leads the way in this respect. As Brent Staples points out, "California's decision to outlaw the use of race in public college admissions has barred most black and Latino students from the elite campuses and raised the specter of a widening professional class in a steadily browning state" (16). Famous for educating the immigrant children of the city of New York, CUNY introduced an open admissions policy in 1970 which guaranteed some place, either in one the senior colleges, Queens College, Hunter, etc. or one of the two year community colleges for every New York City high school graduate. Open admissions was, it is hard to deny, an overwhelming success, providing quality education to perhaps a quarter of million students who otherwise would not have gotten it. Increasingly restrictive policies began with the NYC's fiscal crisis in 1976, but it was not until just recently that Mayor Guiliani and Governor Pataki succeeded in their wholesale assault on admissions standards and on the tasks of the units. Last May, the Trustees decided that students needing remediation would be barred from the eleven senior colleges which would no longer provide any remediation. A study by David Lavin and David Hyllegard shows that the new policy will bar 38% of whites, 67% of African-Americans, 70% of Latinos and 71% of Asians. Staples reports that half of these are well educated immigrants who need schooling in English.

More generally, these developments toward a radical restructuring of higher education are profoundly exacerbating a widening class bifurcation which is rooted in widening "knowledge" bifurcation. And, t*here are no forces on the horizon to prevent this*. Viewed from a class perspective, most people will accept--as they now do-- a highly differentiated system of higher education. The triumph of "neo-liberal" ideology, the redefinition of the goals of higher education and the actuality of alternative modes of access and convenience provided by the new technologies, will assuage most people.

Nor is the idea that the quality of higher education for most people will deteriorate a viable response. As noted, very few undergraduates currently accept the idea of "learning for its own sake." In both private and public universities, as in two-year colleges, almost all students are there for the credential. They know that any degree is better than no degree--even if they fail to realize that with increased access, degrees are less meaningful. Moreover, if we put aside the networks established in prestigious private colleges and universities and the benefits in quality of life to be derived from a liberal arts education (now available to but a few), it is wrong to suppose that current graduates of less-prestigious institutions, including Phoenix, are inadequately prepared for a labor market which increasingly demands narrow and clearly defined competences. Indeed, AT&T has contracted with Phoenix for employee training. We can expect much more of this.

Second, although it is but reluctantly acknowledged (when it is acknowledged at all), higher education, with notable exceptions, is currently of a very poor quality, both because too may students leave our high schools ill-prepared for college *and do not get the support that they*

need, and because many of the conditions which define the structuring of higher education are dysfunctional. Because it is easier to blame the victim, this latter reason is too often ignored. Large four-year “mass provider” institutions are structured so that faculty and administration have little interest in undergraduate education. Curricula are fragmented and courses become meaningless exercises in filling squares required by a credential. Students are treated as passive learners and faculty are too often ill-equipped to do what should be required of them: to empower students and stimulate learning. In two-year institutions, faculties are overworked and poorly rewarded. Students are demanding, impatient, independent and hard to convince. Faculty, meanwhile, have lost confidence in the idea that they know what is good for the student. One “solution,” already mentioned is to raise admission requirements, abrogating responsibility to others. Other more positive responses are possible. In some places, including the present author’s current institution, efforts are being made to reform both curricula and teaching in hopes that students will respond to a more meaningful undergraduate experience. Students are rightly turned off by a fragmented “disciplinary” education, by large lecture sections taught by disinterested faculty, by passive “learning,” and by the alienating environment of a large, unfriendly campus where parking is impossible and public transportation barely exists. We know what needs to be done. The problem is not, accordingly, want of knowledge, but lack of will.

This, of course, contributes to the loss of credibility of higher education and is, accordingly, contributing to its imminent restructuring. On the other hand, if the key agents in higher education, the faculty, were to take control of education, the newer technologies, properly employed, could enhance learning. Instead of being "credential mills," schools might become "learner-center environments where learners actively participate in the act of learning" (17). This is not farfetched. Some of the new technologies have remarkable potentials for active learning even if these are now being realized by but a very small minority of those who are using them. Indeed, most faculty are not only blithely ignorant of any use of the new technologies, but they also assume, remarkably, that the traditional setting for instruction--itself a fairly modern innovation, is not only effective but the only possible one.

The foregoing suggests the only possible force to prevent or to shape these outcomes: the faculty. The "traditional" university is highly labor intensive and thus costly. The new technologies need not be. Currently, except in the “convenience institutions,” the use of new technologies have tended to supplement rather than replace older modes and thus have added to costs without much gain. As always, technology has both a “lightside” and a “darkside. But for reasons already noted, the “darkside” is likely to be the side which comes to be realized. Thus, instead of improved discussion, equality of discussion among all members, collaborative and active learning, the instructor as expert and facilitator, we are getting taped lectures, canned WEB courses, automated correspondence courses, and more generally, the minimizing of high cost active instruction for low cost automation (18). Faculty are clearly sensitive to this, but "downsizing" is already occurring and will, other things being equal, continue to occur. Moreover, faculty unions, like other labor unions, seem perfectly willing to engage in the losing game of trying to preserve jobs--at the expense of highly exploited part-timers, without realizing that they should, instead, be trying to re-secure control over the education of their students.

That is, given the imperatives of the globalized political economy, soaring tuition costs, the problems of maintaining, still less of extending access, the widespread disquiet among the tax-paying public, faculties and students, and the already radically changed character of both students and their motivations, faculty will not be able to resist restructuring. They may, accordingly, capitulate to the worst possible outcomes: a tiered educational system which provides basic and vocational skills to most students. Or they may fully accept the challenges of information technology and put them to the best possible use. If education for the many is not to be reduced to competency, if it is to preserve the older--and already severely compromised--ideal of *Bildung*, then faculty themselves will need to educate themselves to the possibilities of the new technologies. And they will need both clarity of purpose and organization. Present experience suggests that none of this will be forthcoming. But indeed, the great promise of pessimist futurism is the fact that history is full of surprises.

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Notes

1. For a more thorough account of the "new" German university in a comparative context, see Sheldon Rothblatt, and Bjorn Wittrock (eds.), *The European and American University Since 1800: History and Sociological Essays* (Cambridge University Press, Cambridge, 1993). For example, while the Humboldtian ideal inspired the new University of Berlin, it was nevertheless the case that it became the vehicle for the specialized research-oriented university which then became the model for progressive higher education in other advanced countries, especially in the US.

2. Hermann Helmholtz, *Selected Writings*, Russell Kahn (ed.) (Wesleyan University Press, Middletown, Ct., 1971), 40.

3. Peter T. Manicas, *A History and Philosophy of the Social Sciences* (Basil Blackwell, Oxford, 1987).
4. Ibid; and Peter T. Manicas,"The Social Science Disciplines: The American Model," in Peter Wagner, Bjorn Wittrock, and Richard Whitely (eds.), *Discourses on Society: The Shaping of the Social Science Disciplines* (Kluwer: Dordrecht, 1991).
5. Samuel Bowles and Herbert Gintis, *Schooling in Capitalist America* (Basic Books, New York, 1976).
6. Charles McClelland, *State, Society and the University in Germany, 1700-1914 (*Cambridge University Press, Cambridge, 1980).
7. *Chronicle of Higher Education*, Almanac Issue, 29 August 1997.
8. See Michael Margolis, "Brave New Universities,"www.firstmonday. dk/issues3_5/ margolis/index.html.
9. *New York Times*, 5 January, 1998
10. This paragraph and the one which follows owes to the work of Charles W. Smith, from his unpublished manuscript, tentatively entitled, " Fake and Real Crisis in Higher Education: Destroying Excellence with False Rhetoric."
11. See Chester E. Finn, Jr. "Today's Academic Market Requires a New Taxonomy of Colleges," *Chronicle of Higher Education*, 9 January 1998.
12. *New York Times* 15 October 1997.
13. Small regional colleges are already facing stiff competition not only from "convenience institutions," but from large "brand name" and large "mass provider" institutions which are beginning to offer highly competitive, in terms of cost and convenience, distance learning programs. John Wiley, provost and academic vice-chancellor for academic affairs at the University of Wisconsin, Madison "compares the battle between large and small colleges to the competition betwee neighborhood grocery stores and chair supermarkets." See Jeffrey Selingo, "Small, Private Colleges Brace for Competition from Distance Learning," *Chronicle of Higher Education*, 1 May 1998.
14. Finn seems to hold that the major state universities will fall into the "brand name" category. This is extremely doubtful.
15. See Gordon K. Davies, "Higher-Education Systems as Cartels: The End is Near," *Chronicle of Higher Education*, 3 October 1997.
16. *New York Times*, 26 May 1998.

17. Jaishree Odin, J. "ALN Technologies and Higher Education,"http://www2.hawaii.edu /aln/alnessay.htm
18. See Murray Turoff, "Alternative Futures for Distance Learning: The Force and the Darkside," http://eies.njit.edu/~turoff/Papers/darkaln.html.

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Brief Bio

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