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The Universities Expansion Made

Even those who are not immersed in the world of higher education are familiar with the litany of challenges facing higher education institutions. We cannot avoid reading about the crushing weight of student loan debt, the dispiriting erosion of state funding for universities, the enrollment declines in the humanities, the seemingly endless expansion of the ranks of adjunct faculty. College graduates in this generation are not always surpassing their parents' standard of living, and so many bright-eyed college entrants leave their intended alma maters disappointed far before they have completed their courses of study. Indeed, passionate critics like sociologist Sara Goldrick-Rab point to the food insecurity experienced by community college students and others who are merely trying to take a baby step toward realizing the American Dream. Especially when set against the cool successes of Silicon Valley, how can anyone deny that these have been some of the worst of times for American higher education?

And yet we need to recognize that despite these very real problems, the narrative trajectory of higher education *as an institution* is utterly different from the one these bleak pictures convey. Beyond the din of the latest protest about sexual violence on campus or the latest controversial speaker whose mere presence on campus provoked an uproar, some remarkably positive trends have left American universities much bigger, stronger, and in a more dominant position—both domestically and internationally—than ever before. I have traced the major contours of American higher education

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from 1980 through the present, and despite the validity of some of the gloom and doom stories we see every day, a very different picture emerges. I seek to paint this picture, not because I want to sweep the problems of higher education under the rug but to try to set these daily challenges in a broader—and frankly more positive—context.

My focus on the expansion and the growing prominence of universities will come as a surprise—perhaps even as a shock—to many higher education scholars. Higher education scholarship tends toward a deeply pessimistic outlook, and business influence is the primary *bête noire* of scholars. For many, American universities have come to do the bidding of corporations (Aronowitz 2000; Washburn 2000), transformed themselves into market-oriented, managed enterprises little different from corporations (Engell and Dangerfield 1998, 2005; Gumpert 2000; Tuchman 2009), charged exorbitant tuition and fees that put them out of reach of those born in the bottom half of the socioeconomic hierarchy (Haycock and Gerald 2006; Mettler 2014), short-changed matriculated students on quality educational experiences (Arum and Roksa 2011), and created a caste system with low-paid instructors doing most of the teaching and senior professors focusing on their careers, research, conferences, and consultancies (Finkelstein, Conley, and Schuster 2016). Some scholars in this critical stream of thought have argued that the logic of the private sector marketplace is embedded within higher education itself; it is not that universities are directed by business interests but that they have reorganized themselves internally to reflect the market logic of business organizations (Slaughter and Leslie 1997; Slaughter and Rhoades 2004). The view of universities as manifestations of a neoliberalism run amok contains many valuable insights, but it fails to account for the continuing power of relatively autonomous intellectual practices or the dynamic forces that have given universities new prominence for their commitments to economic development and social inclusion.

To an even greater degree, a realistically optimistic appraisal of the future of universities will come as a surprise to journalists and educational technologists who think that higher education as we know it is on the verge of radical reorganization due to the rise of online alternatives (Carey 2012; Kamenetz 2010), the unbundling of practices that have little efficiency value when bundled together (Selingo 2013), and the potential of alternative credentialing systems, such as the modular “badges” promoted by online entrepreneurs (Young 2012). It would be a serious mistake to dismiss these possibilities, but they are less likely to come to fruition than their advo-

cates suggest if higher education can take effective measures to contain the threats they pose. This containment is warranted to prevent these anticipated reorganizations from reducing the possibilities students have for a better life.

Many of the criticisms of higher education have merit. But they miss the big picture: American research universities have grown stronger, both financially and intellectually. They have done so by incorporating multiple growth logics in an interconnected and flexible way. One is the logic of intellectual advance, and it still informs the activities of most scientists and scholars. It determines many of the fundamental structures of the academy such as the centrality of academic departments and the status acquired through journal and book publication. The second is a market logic that leads colleges and universities to work with industry on new technologies, to create new applied degrees, to cultivate patrons, and to manage the enterprises in ways that are familiar to corporations. The third is a logic of social inclusion that leads universities to hold themselves out as the single best option for the members of disadvantaged groups to gain skills that can lead to upward social mobility.

These logics and the practices they animate comeingle in the life of universities. The dean of the engineering school finds that she promotes colleagues who make fundamental advances, but also encourages those who work with industry and sponsors programs for minorities and women in engineering. The chair of the sociology department finds that he celebrates scholars who accumulate influence through the citation of their research, while at the same time seeking to diversify his faculty and graduate student body and adding new “self-supporting” (that is to say, moneymaking) master’s degree programs in applied social statistics or human resources management. When we step back from the daily struggles that students and faculty experience, we can see that as an institution colleges and universities have found ways to maintain a high degree of autonomy while becoming ever more closely connected both to the most powerful organizations in society and to students from disadvantaged backgrounds who seek a better future. Universities have always been about peeking over the horizon. The contemporary progress-oriented score contains competing, sometimes dissonant, but ultimately compatible themes: the search for as-yet undiscovered knowledge, the pursuit of new market opportunities (most notably through economically relevant innovations and new degree programs), and the movement for expanded social opportunities.

The Argument of the Book

The argument of the book follows from these observations.

The traditional structures and purposes of colleges and universities are intended to produce two outcomes: the expansion of knowledge, principally in the disciplines but also at their interstices, and the development of students' cognitive capacities and subject matter knowledge. Colleges and universities have long embraced a large number of ancillary activities, ranging from hospital enterprises to student clubs and organizations to intercollegiate athletics. But these two objectives have remained, in principle, fundamental. During the period I consider in this book two movements hit colleges and universities with great force: one was the movement to use university research to advance economic development through the invention of new technologies with commercial potential. The other was to use colleges and universities as instruments of social inclusion, providing opportunities to members of previously marginalized groups, including women, racial-ethnic minorities, and members of the LGBTQ community. They were driven both by external parties, such as the Business-Higher Education Forum and the great philanthropic foundations, and by campus constituencies who benefited from their advance.

My argument is that these movements created a special kind of dynamism because of the strength of partisan commitments to them, backed up by high levels of patronage. The innovation movement fostered a stronger embrace of entrepreneurship; the rise of engineering and medicine as the two centers of exceptional dynamism in universities; new ideas about economic development related to partnerships between universities, industry, and government; and the creation of new high-tech clusters of firms surrounding universities. It also contributed to the growth of interdisciplinary initiatives on campus, as a result of the underlying assumption that the solution of technological problems required the skills of investigators from many disciplines. The inclusion movement fostered the expansion of the curriculum to include the experiences of marginalized peoples from the United States and those from non-Western cultures; commitments to the diversification of the student body and the faculty; attention to intergroup relations on campus as a measure of the new concept of "campus climate"; and interventions intended to help disadvantaged groups succeed. It too contributed to the growth of interdisciplinary initiatives on campus as means to knit together networks of colleagues with common interests in diversity and social change.

The rise of these two dynamic forces created a contest in which the traditions of academic professionalism both encompassed and resisted pressures to shift attention toward technological innovation and social inclusion. Even as they accommodated the growing interest in use-inspired research, the majority of faculty research continued to focus on the solution of problems identified by colleagues in their disciplinary communities. The proliferation of specialties and subspecialties continued and academic professional culture thrived. Even as they accommodated the push for social inclusion, colleges and universities also found means to preserve their traditional role in the identification of talent, most often found among socially advantaged students, and in the cultivation of students' cognitive capacities and subject matter knowledge. They did so through selective admissions, through the elevation of the more difficult majors, and through the encouragement of motivated students to go on for graduate degrees, as well as through the traditional machinery of course-based assessments. Accommodation was the norm, but occasional tensions also arose, as when faculty entrepreneurs seemed to flout their academic responsibilities in favor of building their enterprises or when the racial or gender backgrounds of candidates seemed to supersede their scholarly achievements as a basis for advancement.

The hierarchical structure of the system reduced the pressures on research universities to manage these tensions. Commitments to new technology development were, not surprisingly, concentrated at research universities. Commitments to social inclusion were also evident at these institutions, but they were constrained by rising prices and higher levels of selectivity. Comprehensive universities—those emphasizing teaching over research—consequently carried the primary responsibility for expanding social inclusion, and this was particularly true of comprehensives dependent on state funding. Even so, inherent tensions existed in the simultaneous pursuit of disciplinary knowledge, technological innovation, and social inclusion. Those engaged at the highest levels in disciplinary knowledge creation or technological innovation often found the university's aspirations to expand access irrelevant to their interests—even as an impediment—while those committed to democratic access just as often viewed the elitism of the leading disciplinary professionals and innovators with skepticism, if not downright antipathy.

The dynamic forces of technological innovation and social inclusion have not been the only fuel for expansion. Universities are voracious; they search for resources wherever they can find them so long as they can justify them on academic grounds. Many of the other sources of the great expansion

are well known. In the sphere of research, they included the largesse of the federal government, philanthropic foundations, and individual donors who have spotted in university researchers reliable guides to the as-yet unknown. In the educational arena, they included the value of higher education credentials in the labor market, a value inflated by the near collapse of opportunities for young adults with only high school educations. And of course they also included employers' and students' interest in the contributions to skill development that colleges can deliver.

The often surprising consequences of expansion are not as well known. I argue that as students and patronage poured into colleges and universities, the institutions gained unexpected new powers. The growth of graduate populations funneled tens of thousands of analytically competent personnel into the country's "knowledge intensive" industries. These four dozen or so industries—ranging from aeronautics to wireless communications—did not dominate the economy as theorists of postindustrial society predicted, but they did by the end of the period contribute as much as half of GDP. Those with graduate and professional degrees formed a cognitive resource of more than twenty-five million people, with PhDs alone outnumbering the population of Los Angeles. The expansion of this stratum of highly educated professionals helped create the conditions for looser boundaries between universities and other institutional sectors. University researchers provided testing grounds for new ideas and new technologies developed outside their walls, even as they continued to produce their own at a startling rate. At the same time, the country's divisions by educational level and high-tech industry location created powder-keg conditions; the advance of the educated group, with its commitment to diversity, contributed to the uneasiness and reaction of whites with less education and dimmer prospects.

The boom in undergraduate education created opportunities for mobility for many, a time for maturation for many more, and high-level skills for a motivated minority. It also had a number of less salutary effects. Contained within the burgeoning enrollment statistics were hundreds of thousands of students who lacked either academic or developed professional interests. Colleges and universities accommodated these students mainly by expecting little of them. The keenest observers no longer understood college as principally a place for building academic knowledge and skills but rather as a mechanism for producing adaptable and flexible people, sufficiently conscientious to prove themselves relatively quick studies in a variety of roles. Expansion encouraged the rise of the "practical arts"—applied fields of study connected to the power centers of the American economy: business,

technology, health, media, and government. And it led to a romance with basic fields reflecting the culture of upper-middle-class progressives, stimulating enrollments in the arts, the environmental sciences, cognitive and neuroscience, fields embracing an international perspective, and those focusing on social inclusion. The preferences of patrons opened large opportunity gaps between the quantitative and interpretive disciplines, cementing and widening the status division within the faculty ranks.

The growing complexity of the environment surrounding higher education—encircled by regulations, dependent on constituency relations, and buffeted by rising expectations—created the conditions for a tremendous growth of management. The salaries of the administrative staff were offset by the hiring of armies of low-paid part-timers, an academic proletariat that comprised nearly half of the instructional staff by the end of the period. The scope of the vulnerabilities of U.S. colleges and universities extended also to the deep incursions of online and competency-based programs and the escalating costs of attendance. The future of the country's intellectual base turned on how effectively colleges and universities would confront the challenges of instructional quality, cost, and online competition that seemed to be building to a crisis point during the period, at least for the more vulnerable regional colleges and universities.

As this overview of my argument suggests, *Two Cheers for Higher Education* considers both the institutional strengths that growth has allowed universities to develop under the influence of the “three logics” (chapters 2–7) and the contradictions that have developed between these logics in the context of resource constraints of various types (the last section of chapter 7 and chapters 8 and 9).

My work stands in contrast to the major works of sociologists who have written about higher education and its role in American society. I cannot, for example, agree with Daniel Bell's (1973) prophecy that universities will become the axial institutions of a postindustrial “knowledge-based” society.¹ The “knowledge sector” of the economy, while growing, does not dominate. Nor does it include all of the most dynamic industries in the country. Corporations will remain the axial institutions, but universities do not need to become the axial institutions to influence the ways corporations work or the way large segments of the public think. They have a far broader influence in the public realm of discourse than corporations, and they have gained influence in part by becoming more porous—working with state, industry, and local communities instead of holding them at arm's length. Richard Florida's (2002) evocation of the “creative class” linked high-tech scientists

and engineers, entrepreneurs, and arts creators as the generators of regional economic development and found this core forming most often in university towns. Florida's analysis is closer in spirit to the orientation of this book, but it fails to appreciate the continuing essential contributions of "garden variety" scientific and scholarly specialists or the prosaic but fundamental production of credentialed workers. As originally stated, Florida's theory overlooked the educational and regional divisions that surfaced with the rise of the "creative class" due to gentrification and brain drain, on one side, and stagnating or declining employment prospects, on the other.² Indeed, those who are not part of the "creative class" have made their presence known electorally, in no uncertain terms, and universities are grappling with ways to respond.

Nor is my analysis of the social stratification role of universities consistent with the classic works in sociology on this subject. Inequalities by social class and race-ethnicity certainly remain deeply embedded in U.S. higher education, as I will discuss in chapter 5. But Pierre Bourdieu and Jean-Claude Passeron's (1977) emphasis on the "reproduction" of social advantage by universities is belied by the extraordinary gains made by white women and Asian Americans under the influence of social movement organizations, government compulsion, and the university's own commitments to social inclusion. (These gains have extended in much less impressive ways to members of non-Asian minority groups.)

My studies of university organization lead in a different direction than the classic works in this area as well. Christopher Jencks and David Riesman's (1968) "academic revolution," which put academics in the catbird seat relative to university administrators, can no longer be treated as credible; administrators have regained control (if indeed they ever lost it!), and their budgetary decisions have led to spectacular growth in their own ranks, creeping disinvestment in academic departments that cannot raise external funds, and the creation of a huge academic proletariat of part-time instructors.

DATA SOURCES

I draw on a range of materials. These include the studies that my *Colleges & Universities 2000* (C&U 2000) research teams conducted between the years 2000 and 2015. C&U 2000 data are composed of the Institutional Data Archive (IDA), a compendium of data on 385 U.S. colleges and universities collected at five-year intervals between 1970 and 2010; the College Catalog Study (CCS) database, a coding of college catalogs from a subset of 292 IDA

institutions at five-year intervals beginning in 1975 and ending in 2010; and the Great Recession database, a coding of all newspaper stories about 300 C&U 2000 institutions during the recession years 2008–12.

My data sources also include the American College Faculty and American College Freshmen studies conducted by the Higher Education Research Institute at UCLA, the Baccalaureate & Beyond longitudinal study, the Cluster Mapping Project of the Harvard Business School, Current Population Survey data from the Census Bureau, the Delta Cost Study database, the Integrated Postsecondary Education Data System (IPEDS), the National Longitudinal Survey of Youth (NLSY), the National Survey of Student Engagement (NSSE), the Student Experience in the Research University and UC Undergraduate Experiences Surveys (SERU/UCUES), the Thomson-Reuters' Web of Science database (WoS), and Lexis-Nexis searches on numerous topics. I also draw on interviews with hundreds of university administrators and faculty members, as well as a number of targeted, small-scale studies, or probes, of worthy topics that I could not engage systematically for lack of time or resources.

EVIDENCE OF GROWTH AND GROWING PROMINENCE

Some writers may long for an imagined golden age in which universities stood apart from—or were in some real or imagined way superior to—the rest of society, but the evidence suggests that the true golden age coincides with the period about which I write. Between 1980 and 2010, for example, research expenditures grew by more than nine times (in 2010 dollars), high-quality publications catalogued in the Web of Science grew by nearly four times, and Web of Science citations grew (measured in 2005) by at least 2.5 times (Brint and Carr 2017). Few sectors were as important to the emerging knowledge society as universities, and the federal government supported their development with high, if never fully sufficient, funding. Federal funding, estimated at approximately \$30 billion in 2015 (AAAS 2016), is largely responsible for the research activities and infrastructure on university campuses. So too is the financial aid system, the essential fuel for growth, which expended approximately \$65 billion in grants, in loans, and, indirectly, through tax benefits in 2015 (College Board 2015). Both support systems have trended sharply upward in constant dollars since the 1980s, including during recessionary periods.

Other measures of university impact show a similar picture. Universities do not hold a monopoly on knowledge production—far from it!—but

the research they produce has contributed to uncountable improvements in economic development and human understanding. Former Columbia University provost Jonathan R. Cole (2009) provided what may be an unsurpassable overview of the most fundamental of these contributions. Among those he highlights include the gene-splicing technology of Herbert Boyer and Stanley Cohen that led directly to the creation of a multibillion-dollar biotechnology industry. Their gene-splicing technique, patented in 1980, has already led to the creation of drugs to treat heart disease, strokes, hemophilia, rheumatoid arthritis, thyroid cancer, asthma, non-Hodgkin's lymphoma, and diabetes, among others. Other biomedical discoveries discussed by Cole have led to new ways to suppress cancer tumors, to prevent smoking (through the nicotine skin patch), to replace broken or damaged joints, to improve hearing through cochlear implants, to allow damaged hearts to beat regularly (through the invention of the pacemaker), and to detect previously undetectable bodily ailments (through the invention of magnetic resonance imaging). New industries related to breakthroughs in the physical sciences include the development of lasers, whose applications range from eye surgery to the creation of audio CDs. Such familiar products as light-emitting diodes (LEDs), bar codes, radar, and transistors were developed by university researchers. Many of the advances in information technology were also the product of university researchers, ranging from the design of the first high-powered computer (Mark I), developments that led to computer-aided design and computer-aided manufacturing, the first web browsers, and packet-network switching that created the architectural foundation for the Internet.

Some other university-initiated projects, such as the search algorithms that led to Google, have become an essential component in the daily life of Americans. Another entirely new industry may be in the making as a result of university researchers' breakthroughs in creating much more flexible and lighter materials through nanoscale technologies, which makes possible the manipulation of individual atoms. Already materials scientists are seeing the potential to manufacture hardware a hundred times lighter but just as strong as hardware manufactured with current materials. Other potential applications include, as Cole recounts, "nanoparticles that can deliver drugs to specific diseased cells in the body; waterproof, tear-resistant cloth fibers; combat jackets that are ultra-strong; sturdier concrete; more durable, lighter sports equipment; and stronger suspension bridges" (2009, 292). Such a list is likely to be out of date the moment it is formulated because new discoveries arrive daily.³

The deepening engagement of universities with their societies does not of course end there. As Mitchell Stevens and his colleagues have put it, “higher education systems are key sites where institutions intersect” (Stevens, Armstrong, and Arum 2008, 135). Some have emphasized community service activities of various types as another important channel of interconnection between universities and the wider society. Intercollegiate athletics may be the most important of the community outreach activities provided by universities, because sports like football and basketball connect populations of entire regions and states to pride in “State U” (see Clotfelter 2011). But of course artistic and cultural events also play an important role in community engagement, as do student and faculty volunteering. Urbanists have heralded the rise of high-growth cities and regions built around vibrant and creative university centers (Florida 2002). In most cases, these visions have not been fully realized or have come with unintended consequences for those who are not members of the “creative class.” Yet many examples exist of regions that have depended on universities as a centerpiece for development, and these examples help us see the potential that remains to be fully realized. Silicon Valley and Route 128 near Boston are well known; other university-based development economies have popped up in such unexpected spots as Ann Arbor, Michigan; Boulder, Colorado; and Salt Lake City, Utah.

We can add to this sense of the university’s growing importance the weight of the tens of thousands of leaders it has helped prepare for positions of responsibility and the tens of millions it has helped equip for occupations requiring well-informed judgment and cognitive skills. When we consider the possibilities for more complete personal development—for the time and challenges to become deeper, more creative, more reflective people—our thoughts naturally turn to the transformations we hope higher education can produce. In a society with few other avenues for social mobility, higher education is also the path that leads out of economic marginality for hundreds of thousands of young people every year.

These contributions could not have been possible without the strong demand for a college education among young people. One important reason for this strong demand is that the market for high school-educated labor has very nearly collapsed—at least in so far as well-paying and stable jobs are concerned. College has become nearly a necessity in the minds of most Americans as the only good option for young people hoping to secure good jobs. The growth in both undergraduate and graduate enrollments was steady from the 1990s on, though recession and prosperity alike. Nor did the rate of increase slow in the face of rising tuition costs. Postsecondary

enrollments grew from 15.3 million in 2000 to 20 million in 2010, accelerating through a time when tuitions continued their steady climb upward (NCES 2012a, table 223). These 20 million students represent a college-going group nearly one hundred times larger than in 1900 and nearly ten times larger than in 1950 (NCES 2014, table 303). In 1920, only 5 percent of young adults age 25–29 had finished four years of college. That fraction grew to 8 percent by 1950 and surged thereafter, reaching one-third by 2012 (NCES 2014, table 104.20). One consequence of the larger population of baccalaureates was that postbaccalaureate degrees also became more common. Nearly 25 million Americans held advanced degrees (master’s and above) by 2012, the combined size of the five largest American cities.

The Fundamental Challenges

Although higher education is an important sector in American society, universities have also faced formidable economic challenges beginning as early as 1970 in the form of state disinvestment and continuously rising costs (see, e.g., Cheit 1971). The higher education historian Roger Geiger described the characteristic pattern of budget cutting during recessionary periods combined with progressively weaker restorations during times of prosperity:

The recovery from the recession of 1990 was long and shallow. Additional years passed before tax revenues grew sufficiently for states to expand their budgets. Still, the restoration phase of the budget cycle was unusually weak. . . . A pattern became established in which good economic times brought less restoration and bad times brought greater deterioration. The latter scenario was replayed with a vengeance after the mild recession of 2001. Many states reduced university appropriations, some repeatedly. (Geiger 2004, 44–45)

Most governors would have liked to keep tuition prices as low as possible, but they recognized that tuition provided an alternative source of funding for higher education institutions when state budgets required cutting—and one that was especially attractive because of the countercyclical nature of demand for higher education credentials. Public higher education in this way served as a “balance wheel” in state budgets, allowing states to navigate more effectively through business cycles by cutting higher education spending in bad times and restoring a higher share in good times, though typically not to prerecession levels (Hovey 1999; see also Delaney and Doyle 2007).⁴

With declining state investment came much higher tuitions to make up the difference and to pay for continuously increasing costs. Starting in the early 1980s, following each recession the percentage of educational expense covered by net tuition increased. As the economists Gary C. Fethke and Andrew J. Policano showed, in 1985 net tuition amounted to less than one-quarter of total educational expenses in public higher education; by 2000 it had increased to just under 30 percent, and by 2010 it accounted for more than 40 percent. They concluded, “Many state legislatures have now acquiesced to large tuition increases, essentially abandoning the philosophy that higher education is primarily a social responsibility” (2012, 13).

Higher tuition and fees brought more borrowing to pay for college. Student loans were a backbone of the postwar expansion, but the average student owed relatively little. At the end of the 1970s no public college in the country charged more than \$2,500 for annual in-state tuition. By the end of the period under discussion in this book, the costs of tuition and residence halls approached \$30,000 per year in public research universities and double that in the leading privates. The average private college student could expect to leave with a degree and \$30,000 of student debt to pay. Those who attended public universities were on average just a little better-off in their debt obligations. Most students accepted debt as the inevitable price of a degree that remained a very good investment over the course of a lifetime. Still, this was a tough way to begin adult life, and public opinion polls showed a persistent questioning of the cost of college. Muck-raking books like *Generation Debt* (Kamenetz 2006) and *The Student Loan Scam* (Collinge 2010) stirred debate about whether college was worth the cost and how it could be made more affordable. In 2010, student debt, then approaching \$1 trillion, exceeded credit card debt as the second largest category of debt in the country (behind mortgages). The higher education industry promoted the value of the college degree, paying comparatively little attention to its cost.

Private colleges had distinctive reasons for raising tuitions. They were intent on “buying the best” and “offering the most,” and these aspirations were expensive. Price increases in the private sector put additional pressure on the publics, ever concerned about falling behind in the competition for top faculty talent, to keep up. In both private and public institutions, college prices grew steadily, by four times the rate of inflation between 1980 and 2012, with a big jump in public tuitions following the recession of 2001. During the same period, the median inflation-adjusted family income increased by less than 20 percent. A family at the median would have had to

pay nearly half of its annual earnings to afford an average-priced private nonprofit four-year university, or two and one-half times the proportion it would have spent in 1980. The proportion of the median family's income required to pay tuition in public universities rose even faster, increasing more than three times, from 4 percent of the median family income in 1980 to nearly 20 percent in 2012 (Geiger and Heller 2011; Lowery 2014). By 2016, Americans' concerns with the cost of college had reached a tipping point, with majorities saying for the first time that there were many ways to achieve success in life without a college degree and most Democrats and independents saying that it was a good or somewhat good idea for college to be free for students from lower- and middle-income families (Schliefer and Silliman 2016).

Higher education economists sought to explain why tuition increases continued to far outpace inflation. At private universities, instructional costs were clearly part of the equation; to remain competitive, the leading private colleges and universities had to pay premium salaries to professors who were in high demand. Generous financial aid policies also contributed. To return some tuition dollars to enroll students from the bottom half of the income distribution, higher charges were required for those families who campus financial aid officers determined could afford them (Clotfelter 1996; Ehrenberg 2000). By contrast, instructional costs remained fairly stable at public institutions. Instead, the number of administrators and their salaries grew. So did student affairs budgets (for supporting student clubs, campus arts and entertainment events, state-of-the-art fitness centers, health and counseling centers, dorm renovations, food courts, and the rest of the amenities residential college students expected to balance the time they spent on study). Campuses also continuously added staff to a range of offices required to maintain donor and constituency relations, regulatory compliance, and economic development opportunities (Ehrenberg 2012).

Facing these fiscal challenges, the first prong in the strategy of virtually all universities has been to raise tuition dramatically and to redistribute a significant share of the increase to cover the costs of students from financially needy families. This high tuition/high aid policy has allowed universities to cope with cost increases, while forcing them to consider the value (or in many cases the necessity) of higher enrollments. International and out-of-state students have been a significant contributor to tuition revenues at many institutions. These students typically paid much higher tuitions and were not eligible for financial aid.

The second prong of the strategy has been to focus aggressively on increasing yield from donors. Campus advancement offices have been the backbone of the private university economic model since the early twentieth century. But growing the size of endowments in public universities became an important source of revenue only following the first episodes of state budget cutting in the 1970s.

Because federal research dollars have not risen as fast as the demand for them, a third prong in the strategy has been to build out grant awards from corporations and philanthropies as a complement to federal spending. This has led to a proliferation of efforts to improve entrepreneurial success, from hiring media consultants to help professors pitch projects to offering courses on entrepreneurship to university researchers. Thus universities' interests in growing enrollments and reducing barriers to interaction with the broader society stem from economic imperatives as much as or more than they stem from service ideals.

QUALITY AND AUTONOMY ISSUES

Apart from cost, the quality of undergraduate education has received the most criticism from the public (see, e.g., ETS 2003; Immerwahr 2004; Schliefer and Silliman 2016).⁵ The first sentence of Arthur W. Chickering and Zelda Gamson's call for reform in undergraduate education spelled out the dimensions of the problem: "Apathetic students, illiterate graduates, incompetent teaching, impersonal campuses—so rolls the drum-fire of criticism" (1987, 3). In 2003, the National Assessment of Adult Literacy found that only about one in three college graduates could draw accurate inferences from two editorials with contrasting content or could accurately read a three-variable graph relating age, exercise, and blood pressure (Kutner et al. 2007). Theories of the time focused on the more varied composition of college-going populations, the popularity of fast-moving images over slow-moving texts, and the rapid decline among students in reading for pleasure.

A 2011 study published by economists Philip Babcock and Mindy Marks found that undergraduates studied about half as long per week in 2008 as they had in 1962. Students at elite colleges continued to report more study than students at state colleges and engineering majors continued to report more study than education majors, but in all groups self-reported study time fell by proportionate amounts. The average college student attended

class and hit the books for more than forty hours per week in the 1960s but just over twenty-five at the end of the Babcock-Marks time series. Judging from University of California data, students were spending most of their found time socializing with friends rather than working or taking care of families (Brint and Cantwell 2010).⁶ And these results may greatly overstate the amount of studying undertaken by most undergraduates. Smartpen technology automatically records and time stamps every pen stroke made by a student. Sophisticated studies of time use employing this technology have found much smaller increments of time spent studying course materials, including in difficult courses in which passing grades are necessary to continue in a desirable major (Rawson, Stahovich, and Mayer 2017).

Some suggested that better tools for information retrieval permitted students to study less, but an obvious implication was that college faculty may have adjusted to lower student interest in study by reducing requirements. Richard Arum and Josipa Roksa's (2011) higher education best seller, *Academically Adrift*, found that only about half of students made significant gains on a well-validated test of critical thinking between the beginning of freshman and the middle of sophomore year. A year later, with senior data in hand, they concluded that more than a third of college students failed to make significant gains on critical thinking between freshman and senior year (Arum, Roksa, and Cho 2012). Students did not develop much because many faculty members did not require much. Those students who failed to make significant gains on the test were likely to have lower requirements for reading and writing in their classes.

Online courses and degree programs boomed during the period, and the research showed clearly that well-designed online courses could yield equal learning gains, though such courses were not inexpensive to create and did not save on faculty time. Indeed, the amount of time faculty spent interacting with students often increased in online settings (van de Vord and Pogue 2012; Worley and Tesdell 2009). And no one was sure whether inexperienced and less mature students were well served in online formats. The benefits of the physical campus—from serendipitous conversations to trust-building relationships to the social capital created in student clubs and organizations—were rarely fully “expensed” in the many paeans to online education. And few considered the possibility that the seed corn of the country's intellectual life could be eaten by online companies working for profit rather than knowledge creation and dissemination.

Other issues raised by growth have received less attention but may be no less important. These include questions about faculty autonomy and uni-

versity management in an age of greater porousness. If universities focus on use-inspired research, which institutions will focus on the basic science and scholarship that has until now been the stronghold of their autonomy and a large source of their authority? If universities draw away from disciplinary organization to focus on interdisciplinary problems, what bodies will protect and advance the principles and insights that have been the product of disciplinary organization? If universities follow the lead of business-oriented administrators and external funders, how will faculty autonomy in the choice of projects, perhaps the most important source of intellectual progress, be maintained and fostered? If shared governance falters, who will protect the university from decisions that do not sufficiently weigh contributions that grow out of departments and specialized knowledge bases? If the state and foundations become much stronger arbiters of universities' agendas, what will prevent universities from becoming not just servants of society but increasingly servile in the face of their powerful benefactors and regulators?

THE HETERONOMY-AUTONOMY PUZZLE

The growing centrality of the university creates unprecedented opportunities. But the problems that have arisen in the wake of growth can prevent the university from giving sufficient attention to the values and practices that brought them to this enviable position in the first place. New approaches to the cost and revenue problems will be essential. To thrive, universities of the future will need to become even more porous to external actors than they currently are. They will do so to increase the two-way traffic between themselves and other institutions in society. They will also need to do so because state governments are receding as a source of funding and the federal government and Congress have not shown a willingness to step in to fill the gap. But, just as importantly, they will need to do a better job of protecting the basic scholarly and scientific values that provide autonomy from external actors who traverse these porous boundaries. To increase public support, they will need to focus more than they have on educational quality and student learning. And they will need to develop self-correcting mechanisms that allow them to identify and address essential pursuits that are in need of attention and resources. In many universities these pursuits include the liberal arts, undergraduate education, and even basic research in the natural and social sciences. What is at stake is not the survival of universities; for the top tier, at least, that is assured. Instead, the difference is between an influential institution subservient to corporations, government,

and philanthropies, as compared to a true radiating center of the country's growing knowledge sector. These are facets of the "heteronomy-autonomy puzzle" facing universities, and I will suggest approaches to addressing this puzzle at several points in the book and a fully framed method for sustaining balance in the concluding chapter.

Beyond the Multiversity

This book focuses on the years 1980–2015, a period in which both the opportunities and problems of growth became defining. But it is necessary to go back to the early 1960s to capture the essence of the postwar research university as an organizational structure and cultural ethos. At the time that he gave the Godkin Lectures at Harvard University, Clark Kerr was president of the University of California. In the lectures, published as *The Uses of the University* (1963), he provided a now classic portrait of the new kind of university that was coming into focus at the time of his presidency. He called this new institution the "multiversity." Kerr envisioned the multiversity as a kind of service station to society. It was connected to every important institution in the state and nation, and it provided research and expert advice to help these institutions solve problems. The university was run by the leading researchers who brought renown to the university and, not incidentally, had the option to leave to take up better offers. These researchers were one-part entrepreneur, one-part research manager, and one-part working scientist or scholar. The emphasis on service was central to Kerr's vision. Most university researchers stayed on campus much of the time to work on publications and grant proposals. Others launched themselves out into society to help solve problems either as private consultants or as members of national commissions. As Kerr conceived it, this was essentially a one-way traffic. Neither representatives of social institutions nor the ideas they generated launched themselves into the university to reconfigure research agendas or to engender new research programs.

Senior administrators did not hold the power to direct the enterprise; although increasing complexity brought them close to the center of action on most issues, they were, in Kerr's view, mostly mediators, trying to find common ground among competing faculty, staff, and student interests.

Kerr's multiversity was already in 1963 a very large operation:

The University had operating expenditures from all sources of nearly half a billion dollars with almost another 100 million for construction;

a total employment of over 40,000, more than IBM and in a far greater variety of endeavors; operations in over a hundred locations, counting campuses, experiment stations, agricultural and urban extension centers, and projects abroad involving more than fifty countries; nearly 10,000 courses in its catalogues; some form of contact with nearly every industry, nearly every level of government, nearly every person in its region. (Kerr 1963, 7)

The multiversity in Kerr's view suffered from the problems of its successes. Students often felt lost in the anonymous environment of the large multiversity campus, a situation made worse by the research interests of the faculty; in Kerr's words, "[One of our more pressing problems] is [h]ow to escape the cruel paradox that a superior faculty leads to an inferior concern for undergraduate teaching" (1963, 65). Professors in the humanities were in Kerr's time already feeling alienated from the aspirations of the multiversity, while natural scientists were for the most part highly satisfied with it and prospering. Dependence on the federal government for research funding "substantially reduced" the autonomy of the university, as leading researchers responded with "fidelity and alacrity" to the federal government's priorities (58). But it was not as yet challenged by legions of outside parties, from corporate partners to billion-dollar foundations, seeking to align the interests of the university with their own. In his mind's eye, Kerr may have been thinking of the prospects of the sixty members of the elite Association of American Universities or, more likely, a subset of that membership. Certainly his vision seems more closely aligned to the aspirations of public than private universities.

Today the number of large research universities would extend at least to the 100-plus institutions classified by the Carnegie Foundation as having "very high" research activity. These are the institutions with which I will be principally concerned when I discuss the research activities of universities, though some of my analyses will include the top 200 research producers. By contrast, my discussions of enrollment, curriculum, and staffing will extend to the broader population of four-year colleges and universities, more than 3,000 in number. I have split the frames of research and instruction self-consciously. Discussions of research should be focused on the institutions that produce the great majority of it, while discussions of enrollments and programs should extend to a broader range of institutions. Two-year community colleges are an important but very different type of postsecondary institution, and I will not discuss them in this book except in passing.⁷

“NEOLIBERAL” UNIVERSITIES?

The era analyzed in this book has been described by some social scientists as “neoliberal” (see, e.g., Hall and Lamont 2013; Harvey 2005; Wacquant 2009). I have strong reservations about the use of this term because it has been employed so loosely and so pejoratively that its implications and connotations can become an impediment to understanding (Boas and Gans-Morse 2009; Jones 2012). Those who use the term sometimes seem to minimize the spillover effects of the dynamic industries that lead economic growth and the positive, if unevenly distributed, social changes produced by growth. They have little interest in the ways organizations balance pre-existing institutional priorities and new market incentives. Instead, they focus on the social dislocations and social injustices they see as the by-product of neoliberalism and, frequently, on social movements as the most effective—perhaps the only effective—way to confront them. But if the term “neoliberalism” is constrained to focus solely on the transformation of institutions in the direction of greater (though incomplete) responsiveness to market signals and the rise of managers attuned to performance metrics compatible with those signals, then the post-1980 Thatcher/Reagan era certainly merits the designation “neoliberal”—and the label, so revised, also applies to the assumptions and practices of a large proportion of university managers during the period.

There is nothing magical about the year 1980 itself as a marker of a new era. Many of the trends I will discuss had their origins in the decade of the 1970s. President Jimmy Carter began deregulating industries in the late 1970s, though many associate deregulation with his successor, Ronald Reagan. The introduction of heightened concerns for efficiency in the delivery of services and the use of metrics to measure effectiveness of service delivery were also beginning in the 1970s to creep into discussions about how to reform government agencies (Osborne and Gaebler 1992). At universities, too, the trends toward a more utilitarian and entrepreneurial attitude were evident in the 1970s, with higher rates of patenting and industry-sponsored research (Berman 2012). The tax revolt in California led to declines in state spending on higher education beginning in the 1970s, not the 1980s, and the accompanying search for new sources of revenue (Lo 1990). The sociologist David Riesman (1980) published a book on the consequences of rising student consumerism based on observations made about student culture in the 1970s. The National Science Foundation began to experiment with large-scale research centers to contribute to social and economic

development under Director Richard Atkinson in the late 1970s (Cole 2009, 162).

The year 1980 is a convenient and symbolically meaningful date because of the election of Ronald Reagan as president and the passage of the Bayh-Dole Act, which encouraged deeper ties between universities and industry. But the era I discuss in this book is best understood as a time when seeds planted in the decade before began to bear fruit—not at a few institutions but at a great many.⁸

POST-1980 GROWTH NARRATIVES

The new visions of research universities that emerged after 1980 lacked Clark Kerr's humane consciousness of institutional weaknesses as a balance to his appreciation of the strengths and contributions of the multiversity. But they did clearly expose the assumptions of the historical period out of which Kerr's vision emerged, and they identified paths that ambitious institutions followed in their pursuit of growth and prominence. When we consider the new visions as responses to a common set of organizational challenges, we can see more clearly the aspirations of managers of already powerful institutions seeking to break out of the constraints of Kerr's nationally focused, federally dependent, and disciplinary-based "service station" into something more encompassing, more accessible, more porous, and more central to the economic and social development of the country.

Each of the new visions can be interpreted as a growth narrative. Each was aware of the contributions of the multiversity and convinced of its service to society. Each anticipated still greater contributions and service in the future. Each was predicated, explicitly or implicitly, on the pursuit of additional sources of funds to allow for greater flexibility and more impactful contributions. They differed, however, in the new sources of revenue they identified and the new types of service to society they anticipated. To put the matter perhaps a bit baldly, universities needed additional revenue to support their complex and far-flung operations—in the public universities this search was hastened by declining state subsidies—and they needed new conceptions of service to society to justify the expansions required to support these operations. For most, motivations for greater service were undoubtedly sincere but brought to speed along the tracks of organizational interest.

The "global university" is an umbrella term encompassing disparate efforts by universities to expand their global status and presence (Marginson

2011). The global university strove for ranking as a “world-class” university in one or both of the two major ranking systems, the *Times Higher Education Supplement* ranking and the Shanghai Jiao Tong ranking (Salmi 2009). The global university also developed one or more international branch campuses to educate its own and foreign students abroad. The development of stronger international ties, both diplomatic and intellectual, justified these engagements as an expansion of the universities’ service to society, as of course did long-standing aspirations for students to become “citizens of the world.” The economic incentives were clear for foreign governments: they could hope to keep academically talented students in the country rather than pursuing study and careers abroad. Accordingly, foreign governments frequently provided generous subsidies for building and staffing international branch campuses—in the case of NYU Abu Dhabi \$50 million (Redden 2013). Although the management issues were formidable (Lane 2011), economic incentives were also evident for U.S. partner institutions: overseas programs could raise the status of American universities, could build potentially beneficial relationships with foreign governments and entrepreneurs, could attract new research talent, and could provide access to a new pool of tuition-paying students. They also allowed universities to increase enrollment by placing a sizable number of home-country students in global satellite campuses.

The “entrepreneurial university,” as articulated by Burton Clark (1998), anticipated a wide variety of expanded “third-stream” revenues (i.e., revenues coming from sources other than tuition and research grants). For the entrepreneurial university, the goal was to generate as much third-stream income as possible as a prerequisite for greater adaptability and opportunity. These sources included contracts with corporations, contracts and grants from state and local governments, grants from philanthropies, royalty income from the licensing of intellectual property, and a vast expansion of fund-raising from alumni and other donors. Of course, many of these sources of revenue were familiar at the time of Kerr. The most important new elements were increasing interactions with for-profit businesses and the generation of revenues from the patenting and licensing of intellectual property. The idea of social entrepreneurship also arose to foster problem-solving engagements with community organizations. Clark proposed that universities protect their “academic core” of basic science and scholarship while encouraging professional schools and auxiliary service units on the “academic periphery” to pursue entrepreneurial activities in an aggressive, strategically guided way.

The “interdisciplinary university,” a favored project of the Association of American Universities (2005), the National Academies (2005), and many university patrons foresaw the potential for larger grants from federal agencies and major donors based on the universities’ capacity to mobilize and integrate larger teams of researchers to address complex problems requiring the skills of many different types of researchers (Gibbons et al. 1994). It justified greater attention to interdisciplinary organization for its capacity to address “grand challenges,” such as deceleration of climate change, mapping of the brain, and solving global health problems. The underlying model was the corporate R&D facility, as a complement to the “invisible colleges” uniting researchers with shared interests across disparate institutions. Federal agencies remained the primary sources of funding but with increasing support from private philanthropists who saw the solution of problems largely ignored by academic departments but embraced by interdisciplinary units. The service to society anticipated in these visions amounted to changes in scale as a necessary response to the emergence of complex and highly consequential problems that required the coordinated activity of large teams composed of people with different types of expertise. This was, in essence, the “big-science” model expanded into many more areas of the scientific and scholarly enterprise.

The “broad-access university,” a keystone project of the leading higher education philanthropies (see, e.g., Gates 2010; Merisotis 2010), as well as Democratic politicians (see Obama 2010), created opportunities for augmented revenue through higher enrollments, from philanthropy, and from federal and state financial aid as a reward for broadening the demographic makeup of the undergraduate student body. Here the university’s expanded service to society was a product of the inclusion of students whose families had for generations lacked opportunities to benefit from a higher education. For the advocates of the broad-access university, elite institutions gained prestige at the expense of meeting national needs to expand access to high-quality higher education experiences. The broad-access university, by contrast, reversed this logic and made inclusivity, rather than exclusion, the watchword. Service to society was based on human capital development among qualified but low-income students and the consequent improved economic prospects of students from these backgrounds. This expansion was in line with the aspirations of U.S. higher education policy under the Obama administration, which called for the doubling of the proportion of eighteen- to twenty-four-year-olds with postsecondary credentials (Obama

2010). Very often advocacy of the broad-access university went hand in hand with support for shifting a large share of enrollments to online courses and degree programs as the most efficient way to accommodate much larger student bodies (see, e.g., Carey 2012; Christensen, Johnson, and Horn 2008; Christensen and Eyring 2011; Smith 2012).

DESIGN FOR A “NEW AMERICAN UNIVERSITY”

Michael M. Crow’s New American University stands out as a synthesis of the post-1980s growth narratives in so far as it integrated the themes of entrepreneurialism, interdisciplinary organization, and broad-access into a coherent design plan. (Global reach was included in Crow’s vision as well, but received comparatively little attention.) As president of Arizona State University (ASU), Crow worked to shape the New American University design following his arrival in 2002. His *Designing the New American University* (co-authored with William B. Dabars) is a brief for redesigning universities into organizations that are both much larger and much less separated from the communities that surround them. Crow and Dabars’s primary complaints about American research universities were that they have not “educated citizens in sufficient numbers” and that they have not adequately addressed “the challenges that beset the world” (2015, 7). They were particularly critical of private research universities whose status is derived, in large measure, by the number of prospective students they reject rather than the number they accept. For Crow and Dabars, the (old) “gold standard” universities include the Ivy League universities, the leading public flagships such as Berkeley, Michigan, and Wisconsin that grew up in the wake of the Morrill Act, and the private universities, such as Johns Hopkins, the University of Chicago, and Stanford, that were founded in the nineteenth century by wealthy industrialists. These universities are excellent at what they do, Crow and Dabars wrote, but “design limitations . . . restrict or subvert their vast potential to contribute to knowledge production as well as societal well-being” (18). Most research universities tried to emulate gold-standard campuses such as Harvard, Stanford, and Chicago, in so far as they were able. Crow and Dabars thought this was both a major mistake and a lost opportunity.

To show why, they contrasted gold-standard universities with “the New American University” (NAU): like other leading research universities, the NAU “expressed competitive interest regarding the intensity of discovery and knowledge production” (60). In other respects, the differences between the two were stark: whereas gold-standard universities were exclusive, the

New American University was inclusive and accessible; it sought to enroll not the top 2 to 5 percent nationally but the top 25 percent of students in its region or state. Where the gold-standard university was oriented to the production of scholarly and scientific knowledge meeting the highest standards of the academic disciplines (with confidence that these achievements would in due course have practical benefits), the New American University was explicitly oriented to the needs of the broader society, with a focus on knowledge that could be applied to solve its problems and contribute to its economic development. Its faculty members and graduate students pursued research and discovery “that benefits the public good,” assuming “major responsibility for the economic, social, and cultural vitality and health and well-being of the community” (61). Where gold-standard universities retained the structural integrity of discipline-based academic departments, interdisciplinary and transdisciplinary arrangements were the primary mechanisms through which the New American University’s contributions to the community were created. The New American University “creates a distinctive institutional profile by building on existing strengths to produce a federation of unique transdisciplinary departments, centers, institutions, schools, and colleges,” and it does so by consolidating “a number of traditional academic departments, which henceforth no longer serve as the sole institutional locus of . . . disciplines” (62).⁹

Crow recounted that research expenditures increased by over 250 percent during the first twelve years of his presidency at Arizona State. Enrollment increased by nearly 50 percent and degree production by more than that. At the same time, ASU became one of the most diverse campuses in the country, with minority enrollments, now one-third of the total, growing by more than 120 percent. ASU is the largest research university in the country with more than 90,000 students on four campuses (including more than 10,000 students enrolled in fully online programs). ASU’s six-year graduation rates (58 percent) may not have been impressive, but they showed considerable improvement during Crow’s presidency at a time when the student body had grown more diverse and the faculty had not increased dramatically in size (Crow and Dabars 2015, 255–57).

A foundation of Crow’s design strategy was to attract highly productive scholars and scientists capable of competing effectively for research grants. ASU’s upward trajectory in R&D expenditures, publications, and citations began in the 1980s but continued apace under Crow’s administration.¹⁰ The vast expansion of enrollments supported the generous pay and state-of-the-art working conditions of these scholars. Among the augmented

senior stratum of scholars and scientists, Crow hired four Nobel Laureates, three Pulitzer Prize winners, and two MacArthur Fellows. Thus rapid enrollment growth was a prerequisite for ASU's capacity to compete for research dollars, because student tuition, when managed using least-cost principles, provided a surplus that could be used to support expensive but productive faculty members. As is true in many private and public universities, the light teaching loads of research-productive scholars were purchased, in part, through increased teaching loads among adjunct faculty. Undoubtedly, Crow's commitment to inclusiveness was genuine, and he pioneered a number of new technologies to produce efficiencies in degree production, including extensive online materials and an "E-Advisor" system that helped students keep on track for timely graduation by displaying current and future required credits and availability of classes for accumulating these credits. Yet ASU had one of the higher student-to-faculty ratios in the country at 22:1 compared to the national average of 15:1. Forty percent of faculty were part-time, or full-time but not on tenure track (College Factual 2015).¹¹ Writing instructors, for example, were increased to a five-course load per semester and expected to teach double the number of students recommended as a maximum by the National Council of Teachers of English (Warner 2015).¹²

DESIGN LIMITATIONS OF THE "NEW AMERICAN UNIVERSITY"

The question is whether the new models advanced by these visionaries suffered from their own design limitations. As states disinvested, public research universities required greater interaction with external resource providers, and they were driven in this direction in any event by their ambitions for greater centrality in the knowledge society of the future. The New American University model was attractive for its frank recognition of those needs and its embrace of those ambitions. It was an attractive model also because it was not merely a blueprint; through his work at ASU Crow had shown that it could be achieved.

But for many in academe it seemed an unattractive model in so far as it began to blur the lines between universities and other large knowledge-producing organizations. Crow and Dabars emphasized that discovery-based research remained at the heart of the New American University, but discovery-based research no longer distinguishes universities from other enterprises, such as the research arms of pharmaceutical firms, biotechnology firms, Internet service providers, or government R&D facilities. Discovery is

essential, but, in addition to discovery, faculty autonomy, faculty participation in governance, commitments to educational quality, and a continuing focus on basic knowledge production are at the heart of the university's capacity to self-direct and ultimately to add value to the individuals and organizations with whom it interacts. From the evidence of Arizona State, as described in *Designing the New American University*, faculty autonomy and participation in governance were of minimal, if any, interest to Crow. Crow and his senior staff were the architects of the New American University design strategy. The faculty were sometimes consulted, but in the end they either adapted to the new strategy or left for other employment. The term "autonomy" rates a few scattered mentions in *Designing the New American University* but no index entries. Educational attainment receives dozens of entries in the index, but neither education as a primary purpose of the university nor educational quality merits an index entry. Use-inspired research receives a warm embrace throughout but basic research only a single passing reference. It is difficult to escape the conclusion that the model may be a prescription for the diminishment of key value-added features and organizational principles of research universities in the guise of a bold plan for the vast expansion of their societal impact.

When we compare the discovery-oriented research arms of corporations and government agencies with research universities, we can see that the soul of a university's distinctiveness stems from the pursuit of self-chosen purposes by faculty researchers, faculty influence in the management of the enterprise, basic science and scholarship as fundamental contributions to both culture and economic development, and a commitment to depth of undergraduate and graduate education. Thus, the key questions are: How can universities solve the heteronomy-autonomy puzzle in a way that preserves a working balance between the two? And how can universities grow in both size and centrality and create more porous boundaries without sacrificing the distinctive features and values that have allowed them to flourish as independent, creative entities?

The Sociology of Educational Expansion

Beyond the big macrolevel pictures of the relationship between universities and American society produced by theorists such as Daniel Bell, Richard Florida, and Pierre Bourdieu, a narrower literature on the causes and consequences of educational expansion has also yielded insights relevant to the argument of this book. Sociologists have been interested in

exploring the causes and consequences of educational expansion for more than 150 years. They have frequently told overly simple stories about it.

The earliest sociological narrative conjured an image of the civilizational progress afforded by the spread of higher learning. The post-Napoleonic visionaries of industrial society expected commercial development to bring an era of greater rationality, what Auguste Comte called “the positive stage” of social development, as the knowledge made possible by the flourishing of industry and commerce diffused throughout society, aided by the concomitant growth of scientific understanding. This narrative was adopted, with few reservations, by the late nineteenth-century builders of research universities, such as Andrew White and Daniel Coit Gilman, who replaced Comte’s emphasis on industry and commerce with an emphasis on universities as the principal agents of increasing societal progress, and it was carried into the postwar era by those who described an economy and society led by people with advanced degrees (see, e.g., Bell 1973; Drucker 1969; Galbraith 1967).¹³ The influence of the Comtean theme will be obvious in this book, though my analysis rests on a much stronger appreciation of internal contradictions of universities and the specific pathways that knowledge advance has taken under the influence of patrons and consumers.

Another of the early sociological narratives about educational expansion focused on the role of institutional differentiation as a means for maintaining social equilibrium in the face of population growth (Durkheim [1893] 1964). In education, this became a story about the differentiation of tiers of varying prestige levels and more and less demanding curricular tracks. Differentiated tracks have been promoted, both in secondary schools and higher education, since the early nineteenth century to maintain high standards at the top and training for a wider range of destinations below the top in the face of increased demand. In the early twentieth century, the Russian sociologist Pitrim Sorokin added a corollary emphasis on vertical channels for the upward circulation of the talented as a necessary complement to legitimize these hierarchically differentiated tracks (Sorokin 1927). Echoes of these functionalist themes will be evident in this book as well but in a form attentive to such new structures of differentiation as quantitative fields, honors programs, and professional master’s degrees, as well as the impact of credential inflation in the shaping of educational hierarchies.

Other sociological analyses have emphasized the state’s interest in a well-educated labor force and citizenry. This interest derives from education’s capacity to build economically valuable skills, thereby contributing to the creation of more productive workers and more numerous taxpayers. It also

derives from the host of socially beneficial characteristics associated with higher levels of educational attainment; those most relevant to the state include higher levels of trust in institutions, greater community involvement, and fewer social problems, such as criminal behavior and drug use, that require state expenditures (Fuller and Rubinson 1992). Education is involved in nation-building in so far as schools and universities socialize “modern actors,” who are expected to have plans and opinions and whose thinking is at least putatively associated with cognitive rationality (Meyer 2008). The state also has a substantial interest in research that leads to economic and social development. These interests help explain why state subsidies for higher education enrollments are substantial throughout the world and why in the United States enrollments in public universities account for more than 70 percent of the total. But it fails to account for the declining role of the fifty states in funding the basic educational activities of public universities in the United States or what universities have done to make up for the weakened support their states have provided.

MARTIN TROW'S CONTRIBUTIONS

The UC Berkeley sociologist Martin Trow was undoubtedly the most important theorist of higher education expansion.¹⁴ Trow developed a conceptual model that shed light on a wide range of changes associated with the sheer expansion of the proportion of young people pursuing higher degrees (see, e.g., Trow 1970, 1973, 2000, 2005). Trow divided the history of higher education systems into three stages: “elite,” “mass,” and “universal.” Elite systems reach their apogee when no more than 4 to 5 percent of the relevant age cohort attends college. Elite systems are characterized by a sense of common culture, in the West typically focusing on the liberal arts; an emphasis on character and intellectual development; and boundaries between academe and the rest of society, marked off by physical separation of campuses as well as many traditional rituals and ceremonies. Those who receive a college education can recognize one another as members of a distinct status group. In the United States, Ivy League colleges are the archetypal institutions whose origins date to the elite era.

According to Trow, when the proportion of students attending colleges and universities reaches beyond 15 percent or so of the age cohort, the system is moving toward the “mass” stage of higher education development. The mass stage reaches its zenith when about 25 to 30 percent of the age cohort attends colleges and universities. In the mass stage, higher education

becomes much more bureaucratically organized with well-defined courses of study and specialized faculties. The dominant ethos shifts from character development to specialized skills development. No longer is the training function of universities subordinate to liberal education for leadership or, in so far as occupational training is involved, focused on preparation for the classical professions of medicine, law, and theology. Instead, training stretches out to embrace an ever-widening range of occupations.

In Trow's account, the transition from elite to mass higher education was triggered by an increasing number of high school graduates seeking credentials to help raise their educational status above their peers. Egalitarian sentiments about access began to spring up and the boundaries between colleges and the rest of society loosened. In the United States, the Morrill Act was one signature expression of a society moving from the elite to the mass stage of higher education development. No longer an institution apart, universities were expected to admit undergraduates from all walks of life and to participate in the development of agriculture and "the mechanical arts." The founding of metropolitan universities beyond the traditional northeastern centers of learning, in cities such as Louisville, Cincinnati, and Detroit, provided further impetus. The idea that higher education is engaged with institutions in the surrounding society became a popular notion at the turn of the twentieth century—and outreach activities, such as agricultural extension and product-testing laboratories, began to develop.

For Trow the "universal" stage—one can quibble with his terminology—arrives when 50 percent or more of the age cohort attends a postsecondary institution. Here we see the growth of short-cycle (one- or two-year) programs in occupational fields. We see more emphasis on engaging students' energies than meeting rigorous academic standards. Higher education is no longer a privilege or even a right but an expectation, even an obligation, for those in the middle and upper classes. The sentiments of democratic egalitarianism permeate the system, not just in two-year colleges but even in "mass" and to some extent in "elite" institutions. Highly structured courses of study begin to weaken in universal-stage institutions, and students may sign up for just a course at a time or a few courses leading to a certificate valuable in the labor market. Boundaries between universal higher education institutions and the rest of society all but disappear. The student role is just one among many experiences that those attending school value. They may spend equal or greater time on their work or family life—and the proportion of students who are working full- or part-time grows dramatically and may reach well above 50 percent. The idea of higher education as a special

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