Why the Rich Are Getting Richer and the Poor, Poorer

The division of labour is limited by the extent of the market.


Regardless of how your job is officially classified (manufacturing, service, managerial, technical, secretarial, and so on), or the industry in which you work (automotive, steel, computer, advertising, finance, food processing), your real competitive position in the world economy is coming to depend on the function you perform in it. Herein lies the basic reason why incomes are diverging. The fortunes of routine producers are declining. In-person servers are also becoming poorer, although their fates are less clear-cut. But symbolic analysts—who solve, identify, and broker new problems—are, by and large, succeeding in the world economy.

All Americans used to be in roughly the same economic boat. Most rose or fell together, as the corporations in which they were employed, the industries comprising such corporations, and the national economy as a whole became more productive—or languished. But national borders no longer define our economic fates. We are now in different boats, one sinking rapidly, one sinking more slowly, and the third rising steadily.

The boat containing routine producers is sinking rapidly. Recall that by mid-century routine production workers in the United States were paid relatively well. The pyramid-like organizations at the core of each major industry coordinated their prices and investments—avoiding the harsh winds of competition and thus maintaining healthy earnings. Some of those earnings, in turn, were reinvested in new plant and equipment (yielding ever-larger-scale economies); another portion went to top managers and investors. But a large and increasing portion went to middle managers and production workers. Work stoppages posed such a threat to high-volume production that organized labor was able to exact an ever-larger premium for its cooperation. And the pattern of wages established within the core corporations influenced the pattern throughout the national economy. Thus the growth of a relatively affluent middle class, able to purchase all the wondrous things produced in high volume by the core corporations.

But, as has been observed, the core is rapidly breaking down into global webs which earn their largest profits from clever problem-solving, identifying, and brokering. As the costs of transporting standard things and of communicating information about them continue to drop, profit margins on high-volume, standardized production are thinning, because there are few barriers to entry. Modern factories and state-of-the-art machinery can be installed almost anywhere on the globe. Routine producers in the United States, then, are in direct competition with millions of routine producers in other nations. Twelve thousand people are added to the world’s population every hour, most of whom, eventually, will happily work for a small fraction of the wages of routine producers in America.¹

¹The reader should note, of course, that low wages in other areas of the world are of no particular attraction to global capital unless workers there are sufficiently productive to make the labor cost of producing each unit lower there than in higher-wage regions. Productivity in many low-wage areas of the world has improved due to the ease with which state-of-the-art factories and equipment can be installed there.
The consequence is clearest in older, heavy industries, where high-volume, standardized production continues its ineluctable move to where labor is cheapest and most accessible around the world. Thus, for example, the Maquiladora factories clustered along the Mexican side of the U.S. border in the sprawling shanty towns of Tijuana, Mexicali, Nogales, Agua Prieta, and Ciudad Juárez—factories owned mostly by Americans, but increasingly by Japanese—in which more than a half million routine producers assemble parts into finished goods to be shipped into the United States.

The same story is unfolding worldwide. Until the late 1970s, AT&T had depended on routine producers in Shreveport, Louisiana, to assemble standard telephones. It then discovered that routine producers in Singapore would perform the same tasks at a far lower cost. Facing intense competition from other global webs, AT&T’s strategic brokers felt compelled to switch. So in the early 1980s they stopped hiring routine producers in Shreveport and began hiring cheaper routine producers in Singapore. But under this kind of pressure for ever lower high-volume production costs, today’s Singaporean can easily end up as yesterday’s Louisianan. By the late 1980s, AT&T’s strategic brokers found that routine producers in Thailand were eager to assemble telephones for a small fraction of the wages of routine producers in Singapore. Thus, in 1989, AT&T stopped hiring Singaporeans to make telephones and began hiring even cheaper routine producers in Thailand.

The search for ever lower wages has not been confined to heavy industry. Routine data processing is equally footloose. Keypunch operators located anywhere around the world can enter data into computers, linked by satellite or transoceanic fiber-optic cable, and take it out again. As the rates charged by satellite networks continue to drop, and as more satellites and fiber-optic cables become available (reducing communication costs still further), routine data processors in the United States find themselves in ever more direct competition with their counterparts abroad, who are often eager to work for far less.

By 1990, keypunch operators in the United States were earning, at most, $4.50 per hour. But keypunch operators throughout the rest of the world were willing to work for a fraction of this. Thus, many potential American data-processing jobs were disappearing, and the wages and benefits of the remaining ones were in decline. Typical was Szatrec International, a $20-million-a-year data-processing firm headquartered in Kansas City, whose American strategic brokers contracted with routine data processors in Manila and with American-owned firms that needed such data-processing services. Compared with the average Philippine income of $1,700 per year, data-entry operators working for Szatrec earn the princely sum of $2,650. The remainder of Szatrec’s employees were American problem-solvers and -identifiers, searching for ways to improve the worldwide system and find new uses to which it could be put.

By 1990, American Airlines was employing over 1,000 data processors in Barbados and the Dominican Republic to enter names and flight numbers from used airline tickets (flown daily to Barbados from airports around the United States) into a giant computer bank located in Dallas. Chicago publisher R. R. Donnelley was sending entire manuscripts to Barbados for entry into computers in preparation for printing. The New York Life Insurance Company was dispatching insurance claims to Castle Island, Ireland, where routine processors, guided by simple directions, entered the claims and determined the amounts due, then instantly transmitted the computations back to the United States. (When the firm advertised in Ireland for twenty-five data-processing jobs, it received six hundred applications.) And McGraw-Hill was processing subscription renewal and marketing information for its magazines in nearby Galway. Indeed, literally millions of routine workers around the world were receiving information, converting it into computer-readable form, and then sending it back—at the speed of electronic impulses—whence it came.

The simple coding of computer software has also entered into world commerce. India, with a large English-speaking population of technicians happy to do routine programming cheaply, is proving to be particularly attractive to global webs in need of this service. By 1990, Texas Instruments maintained a software development facility in Bangalore, linking fifty Indian programmers by satellite to TI’s Dallas headquarters. Spurred by this and similar
ventures, the Indian government was building a teleport in Poona, intended to make it easier and less expensive for many others to send their routine software design specifications for coding.²

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This shift of routine production jobs from advanced to developing nations is a great boon to many workers in such nations who otherwise would be jobless or working for much lower wages. These workers, in turn, now have more money with which to purchase symbolic-analytic services from advanced nations (often embedded within all sorts of complex products). The trend is also beneficial to everyone around the world who can now obtain high-volume, standardized products (including information and software) more cheaply than before.

But these benefits do not come without certain costs. In particular the burden is borne by those who no longer have good-paying routine production jobs within advanced economies like the United States. Many of these people used to belong to unions or at least benefited from prevailing wage rates established in collective bargaining agreements. But as the old corporate bureaucracies have flattened into global webs, bargaining leverage has been lost. Indeed, the tacit national bargain is no more.

Despite the growth in the number of new jobs in the United States, union membership has withered. In 1960, 35 percent of all nonagricultural workers in America belonged to a union. But by 1980 that portion had fallen to just under a quarter, and by 1989 to about 17 percent. Excluding government employees, union membership was down to 13.4 percent.³ This was a smaller proportion even than in the early 1930s, before the National Labor Relations Act created a legally protected right to labor representation. The drop in membership has been accompanied by a growing number of collective bargaining agreements to freeze wages at current levels, reduce wage levels of entering workers, or reduce wages overall. This is an important reason why the long economic recovery that began in 1982 produced a smaller rise in unit labor costs than any of the eight recoveries since World War II—the low rate of unemployment during its course notwithstanding.

Routine production jobs have vanished fastest in traditional unionized industries (autos, steel, and rubber, for example), where average wages have kept up with inflation. This is because the jobs of older workers in such industries are protected by seniority; the youngest workers are the first to be laid off. Faced with a choice of cutting wages or cutting the number of jobs, a majority of union members (secure in the knowledge that there are many who are junior to them who will be laid off first) often have voted for the latter.

Thus the decline in union membership has been most striking among young men entering the work force without a college education. In the early 1950s, more than 40 percent of this group joined unions; by the late 1980s, less than 20 percent (if public employees are excluded, less than 10 percent).⁴ In steelmaking, for example, although many older workers remained employed, almost half of all routine steelmaking jobs in America vanished between 1974 and 1988 (from 480,000 to 260,000). Similarly with automobiles: During the 1980s, the United Auto Workers lost 500,000 members—one-third of their total at the start of the decade. General Motors alone cut 150,000 American production jobs during the 1980s (even as it added employment abroad). Another consequence of the same phenomenon: The gap between the average wages of unionized and nonunionized workers widened dramatically—from 14.6 percent in 1973 to 20.4 percent by end of the 1980s.⁵ The lesson is clear. If you drop out of high school or have no more than a high school diploma, do not expect a good routine production job to be awaiting you.

Also vanishing are lower- and middle-level management jobs involving routine production. Between 1981 and 1986, more than

780,000 foremen, supervisors, and section chiefs lost their jobs through plant closings and layoffs. Large numbers of assistant division heads, assistant directors, assistant managers, and vice presidents also found themselves jobless. GM shed more than 40,000 white-collar employees and planned to eliminate another 25,000 by the mid-1980s.\textsuperscript{2} As America’s core pyramids metamorphosed into global webs, many middle-level routine producers were as obsolete as routine workers on the line.

As has been noted, foreign-owned webs are hiring some Americans to do routine production in the United States. Philips, Sony, and Toyota factories are popping up all over—to the self-congratulatory applause of the nation’s governors and mayors, who have lured them with promises of tax abatements and new sewers, among other amenities. But as these ebullient politicians will soon discover, the foreign-owned factories are highly automated and will become far more so in years to come. Routine production jobs account for a small fraction of the cost of producing most items in the United States and other advanced nations, and this fraction will continue to decline sharply as computer-integrated robots take over. In 1977 it took routine producers thirty-five hours to assemble an automobile in the United States; it is estimated that by the mid-1980s, Japanese-owned factories in America will be producing finished automobiles using only eight hours of a routine producer’s time.\textsuperscript{3}

The productivity and resulting wages of American workers who run such robotic machinery may be relatively high, but there may not be many such jobs to go around. A case in point: In the late 1980s, Nippon Steel joined with America’s ailing Inland Steel to build a new $400 million cold-rolling mill fifty miles west of Gary, Indiana. The mill was celebrated for its state-of-the-art technology, which cut the time to produce a coil of steel from twelve days to about one hour. In fact, the entire plant could be run by a small team of technicians, which became clear when Inland

\textsuperscript{3}figures from the International Motor Vehicles Program, Massachusetts Institute of Technology, 1989.
jobs paying at least 20 percent less.\textsuperscript{11} In-person servers must also compete with high school graduates and dropouts who years before had moved easily into routine production jobs but no longer can. And if demographic predictions about the American work force in the first decades of the twenty-first century are correct (and they are likely to be, since most of the people who will comprise the work force are already identifiable), most new entrants into the job market will be black or Hispanic women or women in groups that in years past have possessed relatively weak technical skills. This will result in an even larger number of people crowding into in-person services. Finally, in-person servers will be competing with growing numbers of immigrants, both legal and illegal, for whom in-person services will comprise the most accessible jobs. (It is estimated that between the mid-1980s and the end of the century, about a quarter of all workers entering the American labor force will be immigrants.\textsuperscript{12})

Perhaps the fiercest competition that in-person servers face comes from labor-saving machinery (much of it invented, designed, fabricated, or assembled in other nations, of course). Automated tellers, computerized cashiers, automatic car washes, robotized vending machines, self-service gasoline pumps, and all similar gadgets substitute for the human beings that customers once encountered. Even telephone operators are fast disappearing, as electronic sensors and voice simulators become capable of carrying on conversations that are reasonably intelligent, and always polite. Retail sales workers—among the largest groups of in-person servers—are similarly imperiled. Through personal computers linked to television screens, tomorrow’s consumers will be able to buy furniture, appliances, and all sorts of electronic toys from their living rooms—examining the merchandise from all angles, selecting whatever color, size, special features, and price seem most appealing, and then transmitting the order instantly to warehouses from which the selections will be shipped directly to their homes. So, too, with financial transactions, airline and hotel reservations, rental car agreements, and similar contracts, which will be executed between consumers in their homes and computer banks somewhere else on the globe.\textsuperscript{13}

Advanced economies like the United States will continue to generate sizable numbers of new in-person service jobs, of course, the automation of older ones notwithstanding. For every bank teller who loses her job to an automated teller, three new jobs open for aerobics instructors. Human beings, it seems, have an almost inextinguishable desire for personal attention. But the intense competition nevertheless ensures that the wages of in-person servers will remain relatively low. In-person servers—working on their own, or else dispersed widely amid many small establishments, filling all sorts of personal-care niches—cannot readily organize themselves into labor unions or create powerful lobbies to limit the impact of such competition.

In two respects, demographics will work in favor of in-person servers, buoying their collective boat slightly. First, as has been noted, the rate of growth of the American work force is slowing. In particular, the number of younger workers is shrinking. Between 1985 and 1995, the number of eighteen- to twenty-four-year-olds will have declined by 17.5 percent. Thus, employers will have more incentive to hire and train in-person servers whom they might previously have avoided. But this demographic relief from the competitive pressures will be only temporary. The cumulative procreative energies of the postwar baby-boomers (born between 1946 and 1964) will result in a new surge of workers by 2010 or thereabouts.\textsuperscript{14} And immigration—both legal and illegal—shows every sign of increasing in years to come.

Next, by the second decade of the twenty-first century, the number of Americans aged sixty-five and over will be rising precipitously, as the baby-boomers reach retirement age and live longer. Their life expectancies will lengthen not just because fewer of them will have smoked their way to their graves and more will have eaten better than their parents, but also because they will receive all sorts of expensive drugs and therapies designed to keep


them alive—barely. By 2035, twice as many Americans will be elderly as in 1980, and the number of octogenarians is expected to triple. As these decaying baby-boomers ingest all the chemicals and receive all the treatments, they will need a great deal of personal attention. Millions of deteriorating bodies will require nurses, nursing-home operators, hospital administrators, orderlies, home-care providers, hospice aides, and technicians to operate and maintain all the expensive machinery that will monitor and temporarily stave off final disintegration. There might even be a booming market for euthanasia specialists. In-person servers catering to the old and ailing will be in strong demand.15

One small problem: The decaying baby-boomers will not have enough money to pay for these services. They will have used up their personal savings years before. Their Social Security payments will, of course, have been used by the government to pay for the previous generation’s retirement and to finance much of the budget deficits of the 1980s. Moreover, with relatively fewer young Americans in the population, the supply of housing will likely exceed the demand, with the result that the boomers’ major investments—their homes—will be worth less (in inflation-adjusted dollars) when they retire than they planned for. In consequence, the huge cost of caring for the graying boomers will fall on many of the same people who will be paid to care for them. It will be like a great sump pump: In-person servers of the twenty-first century will have an abundance of health-care jobs, but a large portion of their earnings will be devoted to Social Security payments and income taxes, which will in turn be used to pay their salaries. The net result: no real improvement in their standard of living.

The standard of living of in-person servers also depends, indirectly, on the standard of living of the Americans they serve who are engaged in world commerce. To the extent that these Americans are richly rewarded by the rest of the world for what they contribute, they will have more money to lavish upon in-person services. Here we find the only form of “trickle-down” economics that has a basis in reality. A waitress in a town whose

5 The Census Bureau estimates that by the year 2000, at least 12 million Americans will work in health services—well over 5 percent of the total work force.

major factory has just been closed is unlikely to earn a high wage or enjoy much job security; in a swank resort populated by film producers and banking moguls, she is apt to do reasonably well. So, too, with nations. In-person servers in Bangladesh may spend their days performing roughly the same tasks as in-person servers in the United States, but have a far lower standard of living for their efforts. The difference comes in the value that their customers add to the world economy. I shall return to this issue in a later chapter.

Unlike the boats of routine producers and in-person servers, however, the vessel containing America’s symbolic analysts is rising. Worldwide demand for their insights is growing as the ease and speed of communicating them steadily increases. Not every symbolic analyst is rising as quickly or as dramatically as every other, of course; symbolic analysts at the low end are barely holding their own in the world economy. But symbolic analysts at the top are in such great demand worldwide that they have difficulty keeping track of all their earnings. Never before in history has opulence on such a scale been gained by people who have earned it, and done so legally.

Among symbolic analysts in the middle range are American scientists and researchers who are busily selling their discoveries to global enterprise webs. They are not limited to American customers. If the strategic brokers in General Motors’ headquarters refuse to pay a high price for a new means of making high-strength ceramic engines dreamed up by a team of engineers affiliated with Carnegie-Mellon University in Pittsburgh, the strategic brokers of Honda or Mercedes-Benz are likely to be more than willing.

So, too, with the insights of America’s ubiquitous management consultants, which are being sold for large sums to eager entrepreneurs in Europe and Latin America. Also, the insights of America’s energy consultants, sold for even larger sums to Arab sheikhs. American design engineers are providing insights to Olivetti, Mazda, Siemens, and other global webs. American marketers, techniques for learning what worldwide consumers will
buy; American advertisers, ploys for ensuring that they actually do. American architects are issuing designs and blueprints for opera houses, art galleries, museums, luxury hotels, and residential complexes in the world's major cities. American commercial property developers, marketing these properties to worldwide investors and purchasers.

Americans who specialize in the genteel art of public relations are in demand by corporations, governments, and politicians in virtually every nation. So, too, are American political consultants, some of whom, at this writing, are advising the Hungarian Socialist Party, the remnant of Hungary's ruling Communists, on how to salvage a few parliamentary seats in the nation's first free election in more than forty years. Also at this writing, a team of American agricultural consultants are advising the managers of a Soviet farm collective employing 1,700 Russians eighty miles outside Moscow. As noted, American investment bankers and lawyers specializing in financial cunnings are selling their insights to Asians and Europeans who are eager to discover how to make large amounts of money by moving large amounts of capital.

Developing nations, meanwhile, are hiring American civil engineers to advise on building roads and dams. The present thaw in the Cold War will no doubt expand these opportunities. American engineers from Bechtel (a global firm notable for having employed both Caspar Weinberger and George Shultz for much larger sums than either earned in the Reagan administration) have begun helping the Soviets design and install a new generation of nuclear reactors. Nations also are hiring American bankers and lawyers to help them renegotiate the terms of their loans with global banks, and Washington lobbyists to help them with Congress, the Treasury, the World Bank, the IMF, and other politically sensitive institutions. In fits of obvious desperation, several nations emerging from communism have even hired American economists to teach them about capitalism.

Almost everyone around the world is buying the skills and insights of Americans who manipulate oral and visual symbols—musicians, sound engineers, film producers, makeup artists, directors, cinematographers, actors and actresses, boxers, scriptwriters, songwriters, and set designers. Among the wealthiest of symbolic analysts are Steven Spielberg, Bill Cosby, Charles Schulz, Eddie Murphy, Sylvester Stallone, Madonna, and other stars directors and performers—who are almost as well known on the streets of Dresden and Tokyo as in the Back Bay of Boston. Less well rewarded but no less renowned are the innumerable anchors on Turner Broadcasting's Cable News, who appear daily, via satellite, in places ranging from Vietnam to Nigeria. Vanna White is the world's most watched game-show hostess. Behind each of these familiar faces is a collection of American problem-solvers, ideologues, and brokers who train, coach, advise, promote, amplify, direct, groom, represent, and otherwise add value to their talents.

There are also the insights of senior American executives who occupy the world headquarters of global "American" corporations and the national or regional headquarters of global "foreign" corporations. Their insights are duly exported to the rest of the world through the webs of global enterprise. IBM does not export many machines from the United States, for example. Big Blue makes machines all over the globe and services them on the spot. Its prime American exports are symbolic and analytic. From IBM's world headquarters in Armonk, New York, emanate strategic brokerage and related management services bound for the rest of the world. In return, IBM's top executives are generously rewarded.

The most important reason for this expanding world market and increasing global demand for the symbolic and analytic insights of Americans has been the dramatic improvement in worldwide communication and transportation technologies. Designs, instructions, advice, and visual and audio symbols can be communicated more and more rapidly around the globe, with ever-greater precision and at ever-lower cost. Madonna's voice can be transported to billions of listeners, with perfect clarity, on digital compact disks. A new invention emanating from engineers in

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Battelle’s laboratory in Columbus, Ohio, can be sent almost anywhere via modem, in a form that will allow others to examine it in three dimensions through enhanced computer graphics. When face-to-face meetings are still required—and videoconferencing will not suffice—it is relatively easy for designers, consultants, advisers, artists, and executives to board supersonic jets and, in a matter of hours, meet directly with their worldwide clients, customers, audiences, and employees.

With rising demand comes rising compensation. Whether in the form of licensing fees, fees for service, salaries, or shares in final profits, the economic result is much the same. There are also nonpecuniary rewards. One of the best-kept secrets among symbolic analysts is that so many of them enjoy their work. In fact, much of it does not count as work at all, in the traditional sense. The work of routine producers and in-person servers is typically monotonous; it causes muscles to tire or weaken and involves little independence or discretion. The “work” of symbolic analysts, by contrast, often involves puzzles, experiments, games, a significant amount of chatter, and substantial discretion over what to do next. Few routine producers or in-person servers would “work” if they did not need to earn the money. Many symbolic analysts would “work” even if money were no object.

7

At midcentury, when America was a national market dominated by core pyramid-shaped corporations, there were constraints on the earnings of people at the highest rungs. First and most obviously, the market for their services was largely limited to the borders of the nation. In addition, whatever conceptual value they might contribute was small relative to the value gleaned from large scale—and it was dependent on large scale for whatever income was to be gained. Most of the problems had been identified and solved had to do with enhancing the efficiency of production and improving the flow of materials, parts, assembly, and distribution. Inventors searched for the rare breakthrough revealing an entirely new product to be made in high volume; management consultants, executives, and engineers thereafter tried to speed and synchronize its manufacture, to better achieve scale efficiencies; advertisers and marketers sought then to whet the public’s appetite for the standard item that emerged. Since white-collar earnings increased with larger scale, there was considerable incentive to expand the firm; indeed, many of America’s core corporations grew far larger than scale economies would appear to have justified.

By the 1990s, in contrast, the earnings of symbolic analysts were limited neither by the size of the national market nor by the volume of production of the firms with which they were affiliated. The marketplace was worldwide, and conceptual value was high relative to value added from scale efficiencies.

There had been another constraint on high earnings, which also gave way by the 1990s. At midcentury, the compensation awarded to top executives and advisers of the largest of America’s core corporations could not be grossly out of proportion to that of low-level production workers. It would be unseemly for executives who engaged in highly visible rounds of bargaining with labor unions, and who routinely responded to government requests to moderate prices, to take home wages and benefits wildly in excess of what other Americans earned. Unless white-collar executives restrained themselves, moreover, blue-collar production workers could not be expected to restrain their own demands for higher wages. Unless both groups exercised restraint, the government could not be expected to forbear from imposing direct controls and regulations.

At the same time, the wages of production workers could not be allowed to sink too low, lest there be insufficient purchasing power in the economy. After all, who would buy all the goods flowing out of American factories if not American workers? This, too, was part of the tacit bargain struck between American managers and their workers.

Recall the oft-repeated corporate platitudes of the era about the chief executive’s responsibility to carefully weigh and balance the interests of the corporation’s disparate stakeholders. Under the stewardship of the corporate statesman, no set of stakeholders—least of all white-collar executives—was to gain a disproportionately large share of the benefits of corporate activity; nor was any stakeholder—especially the average worker—to be left with a share that was disproportionately small. Banal though it was, this idea helped to maintain the legitimacy of the core
American corporation in the eyes of most Americans, and to ensure continued economic growth.

But by the 1990s, these informal norms were evaporating, just as (and largely because) the core American corporation was vanishing. The links between top executives and the American production worker were fading: An ever-increasing number of subordinates and contractees were foreign, and a steadily growing number of American routine producers were working for foreign-owned firms. An entire cohort of middle-level managers, who had once been deemed “white collar,” had disappeared; and, increasingly, American executives were exporting their insights to global enterprise webs.

As the American corporation itself became a global web almost indistinguishable from any other, its stakeholders were turning into a large and diffuse group, spread over the world. Such global stakeholders were less visible, and far less noisy, than national stakeholders. And as the American corporation sold its goods and services all over the world, the purchasing power of American workers became far less relevant to its economic survival.

Thus have the inhibitions been removed. The salaries and benefits of America’s top executives, and many of their advisers and consultants, have soared to what years before would have been unimaginable heights, even as those of other Americans have declined.

I have never seen anybody improve on the art and technique of inquiry by any means other than engaging in inquiry.

JEROME BRUNER, On Knowing (1960)

As the value placed on new designs and concepts continues to grow relative to the value placed on standard products, the demand for symbolic analysis will continue to surge. This burgeoning demand should assure symbolic analysts ever higher incomes in the years ahead.

Of course, the worldwide supply of symbolic analysts is growing as well. Millions of people across the globe are trying to learn symbolic-analytic skills, and many are succeeding. Researchers and engineers in East Asia and Western Europe are gathering valuable insights into microelectronics, microbionics, and new materials, and translating these insights into new products. Young people in many developing nations are swarming into universities to learn the symbolic and analytic secrets of design engineering, computer engineering, marketing, and management. By 1990, for example, more than one-third of all nineteen-year-old Argentines, Singaporeans, and South Koreans were pursuing college degrees.

But even with a larger supply, it is likely that Americans will continue to excel at symbolic analysis. For two reasons: First, no nation educates its most fortunate and talented children—its future symbolic analysts—as well as does America. Second, no nation
possesses the same agglomerations of symbolic analysts already in place and able to learn continuously and informally from one another. While these two advantages may not last forever, American symbolic analysts will continue to enjoy a head start for the foreseeable future at least.

2

AMERICANS love to get worked up over American education. Everyone has views on education because it is one of the few fields in which everyone can claim to have had some direct experience. Those with the strongest views tend to be those on whom the experience has had the least lasting effect. The truly educated person understands how multifaceted are the goals of education in a free society, and how complex are the means.

Recall that America's educational system at midcentury fitted nicely into the prevailing structure of high-volume production within which its young products were to be employed. American schools mirrored the national economy, with a standard assembly-line curriculum divided neatly into subjects, taught in predictable units of time, arranged sequentially by grade, and controlled by standardized tests intended to weed out defective units and return them for reworking.

By the last decade of the twentieth century, although the economy had changed dramatically, the form and function of the American educational system remained roughly the same. But now a palpable sense of crisis surrounded the nation's schools, featuring daily lamentations in the media about how terrible they had become. The fact, however, was that most schools had not changed for the worse; they simply had not changed for the better. Early in his presidential campaign, George Bush bestowed upon himself the anticipatory title of "Education President." But, although he continued to so style himself after his election, the title's meaning remained elusive, since Bush did not want to spend any more federal money on education and urged instead that the nation's schools fix themselves. Some people who called themselves educational "reformers" suggested that the standard curriculum should become even more uniform across the nation and that standardized tests should be still more determinative of what was poured into young heads as they moved along the school conveyor belt. (Of course, standardized tests remained, as before, a highly accurate method for measuring little more than the ability of children to take standardized tests.) Popular books contained lists of facts that every educated person should know. Remarkably often in American life, when the need for change is most urgent, the demands grow most insistent that we go "back to basics."

The truth is that while the vast majority of American children are still subjected to a standardized education designed for a standardized economy, a small fraction are not. By the 1990s, the average American child was ill equipped to compete in the high-value global economy, but within that average was a wide variation. American children as a whole are behind their counterparts in Canada, Japan, Sweden, and Britain in mathematical proficiency, science, and geography.1 Fully 17 percent of American seventeen-year-olds are functionally illiterate.2 Some American children receive almost no education, and many more get a poor one. But some American children—no more than 15 to 20 percent—are being perfectly prepared for a lifetime of symbolic-analytic work.

The formal education of the budding symbolic analyst follows a common pattern. Some of these young people attend elite private schools, followed by the most selective universities and prestigious graduate schools; a majority spend childhood within high-quality suburban public schools where they are tracked through advanced courses in the company of other similarly fortunate symbolic-analytic offspring,3 and thence to good four-year colleges. But their experiences are similar. Their parents are involved and interested in their education. Their teachers and professors are attentive to their academic needs. They have access to state-of-the-art science laboratories, interactive computers and video systems in the classroom, language laboratories, and high-tech school libraries. Their classes are relatively small; their peers are intellectually stimulating. Their parents take them to museums

1A dismally large number of surveys have charted the relative backwardness of the average American student. For a sample, see "U.S. Students Near the Foot of the Class," Science, March 1988, p. 1857.2National Assessment of Educational Progress, various issues.
and cultural events, expose them to foreign travel, and give them music lessons. At home are educational books, educational toys, educational videotapes, microscopes, telescopes, and personal computers replete with the latest educational software. Should the children fall behind in their studies, they are delivered to private tutors. Should they develop a physical ailment that impedes their learning, they immediately receive good medical care.

The argument here is not that America’s formal system for training its future symbolic analysts is flawless. There is room for improvement. European and Japanese secondary students routinely outperform even top American students in mathematics and science. Overall, however, no other society prepares its most fortunate young people as well for lifetimes of creative problem-solving, identifying, and brokering. America’s best four-year colleges and universities are the best in the world (as evidenced by the number of foreign students who flock to them);4 the college-track programs of the secondary schools that prepare students for them are equally exceptional. In Japan, it has been the other way around. The shortcomings of Japanese universities and the uninspiring fare offered by Japanese secondary schools have been widely noted. Japan’s greatest educational success has been to ensure that even its slowest learners achieve a relatively high level of proficiency.5

3

The underlying content of America’s symbolic-analytic curriculum is not generally addressed openly in suburban PTA meet-

ings, nor disclosed in college catalogues. Yet its characteristics and purposes are understood implicitly by teachers, professors, and symbolic-analytic parents.

Budding symbolic analysts learn to read, write, and do calculations, of course, but such basic skills are developed and focused in particular ways. They often accumulate a large number of facts along the way, yet these facts are not central to their education; they will live their adult lives in a world in which most facts learned years before (even including some historical ones) will have changed or have been reinterpreted. In any event, whatever data they need will be available to them at the touch of a computer key.

More important, these fortunate children learn how to concretize problems and solutions. The formal education of an incipient symbolic analyst thus entails refining four basic skills: abstraction, system thinking, experimentation, and collaboration.6

Consider, first, the capacity for abstraction. The real world is nothing but a vast jumble of noises, shapes, colors, smells, and textures—essentially meaningless until the human mind imposes some order upon them. The capacity for abstraction—for discovering patterns and meanings—is, of course, the very essence of symbolic analysis, in which reality must be simplified so that it can be understood and manipulated in new ways. The symbolic analyst wields equations, formulae, analogies, models, constructs, categories, and metaphors in order to create possibilities for reinterpreting, and then rearranging, the chaos of data that are already swirling around us. Huge gobs of disorganized information can thus be integrated and assimilated to reveal new solutions, problems, and choices. Every innovative scientist, lawyer, engineer, designer, management consultant, screenwriter, or advertiser is continuously searching for new ways to represent reality which will be more compelling or revealing than the old. Their tools may vary, but the abstract processes of shaping raw data into workable, often original patterns are much the same.

For most children in the United States and around the world, formal education entails just the opposite kind of learning. Rather

4In fact, university education is one of the few remaining industries in which the United States retains a consistently positive trade balance. As a university teacher, I continuously “export” my lectures and seminars to the rest of the world by virtue of the fact that over a third of my graduate students are foreign nationals.


6Suggestions for further reading about these skills, and how formal education can enhance them, can be found at the end of this book in "A Note on Additional Sources."
than construct meanings for themselves, meanings are imposed upon them. What is to be learned is prepackaged into lesson plans, lectures, and textbooks. Reality has already been simplified; the obedient student has only to commit it to memory. An efficient educational process, it is assumed, imparts knowledge much as an efficient factory installs parts on an assembly line. Regardless of what is conveyed, the underlying lesson is that it is someone else’s responsibility to interpret and give meaning to the swirl of data, events, and sensations that surround us. This lesson can only retard students’ ability to thrive in a world brimming with possibilities for discovery.

America’s most fortunate students escape such spoon-feeding, however. On the advanced tracks of the nation’s best primary and secondary schools, and in the seminar rooms and laboratories of America’s best universities, the curriculum is fluid and interactive. Instead of emphasizing the transmission of information, the focus is on judgment and interpretation. The student is taught to get behind the data—to ask why certain facts have been selected, why they are assumed to be important, how they were deduced, and how they might be contradicted. The student learns to examine reality from many angles, in different lights, and thus to visualize new possibilities and choices. The symbolic-analytic mind is trained to be skeptical, curious, and creative.

4

System thinking carries abstraction a step further. Seeing reality as a system of causes and consequences comes naturally to a small baby who learns that a glass of milk hurled onto a hardwood floor will shatter, its contents splashing over anyone in the vicinity, and that such an event—though momentarily quite amusing—is sure to incur a strong reaction from the adult in charge. More refined forms of system thinking come less naturally. Our tendency in later life is often to view reality as a series of static snapshots—here a market, there a technology, here an environmental hazard, there a political movement. Relationships among such phenomena are left unexplored. Most formal education perpetuates this compartmental fallacy, offering up facts and figures in bite-sized units of “history,” “geography,” “mathematics,” and “biology,” as if each were distinct and unrelated to the others. This may be an efficient system for conveying bits of data, but not for instilling wisdom. What the student really learns is that the world is made up of discrete components, each capable of being substantially understood in isolation.

To discover new opportunities, however, one must be capable of seeing the whole, and of understanding the processes by which parts of reality are linked together. In the real world, issues rarely emerge predefined and neatly separable. The symbolic analyst must constantly try to discern larger causes, consequences, and relationships. What looks like a simple problem susceptible to a standard solution may turn out to be a symptom of a more fundamental problem, sure to pop up elsewhere in a different form. By solving the basic problem, the symbolic analyst can add substantial value. The invention of a quickly biodegradable plastic eliminates many of the problems of designing safe landfills; a computerized workstation for the home solves the myriad problems of rush-hour traffic.

The education of the symbolic analyst emphasizes system thinking. Rather than teach students how to solve a problem that is presented to them, they are taught to examine why the problem arises and how it is connected to other problems. Learning how to travel from one place to another by following a prescribed route is one thing; learning the entire terrain so that you can find shortcuts to wherever you may want to go is quite another. Instead of assuming that problems and their solutions are generated by others (as they were under high-volume, standardized production), students are taught that problems can usually be redefined according to where you look in a broad system of forces, variables, and outcomes, and that unexpected relationships and potential solutions can be discovered by examining this larger terrain.

5

In order to learn the higher forms of abstraction and system thinking, one must learn to experiment. Small children spend most of their waking hours experimenting. Their tests are random and repetitive, but through trial and error they increase their capacity to create order out of a bewildering collage of sensations.
and to comprehend causes and consequences. More advanced forms of experimentation also entail many false starts, often resulting in frustration, disappointment, and even fear. Exploring a city on your own rather than following a prescribed tour may take you far afield—you may even get lost, for a time. But there is no better way to learn the layout or to see the city from many different points of view. Thus are symbolic analysts continuously experimenting. The cinematographer tries out a new technique for shooting scenes; the design engineer tries out a new material for fabricating engine parts. The habits and methods of experimentation are critical in the new economy, where technologies, tastes, and markets are in constant flux.

But most formal schooling (both in the United States and elsewhere) has little to do with experimentation. The tour through history or geography or science typically has a fixed route, beginning at the start of the textbook or the series of lectures and ending at its conclusion. Students have almost no opportunity to explore the terrain for themselves. Self-guided exploration is, after all, an inefficient means of covering ground that “must” be covered.

And yet in the best classes of the nation’s best schools and universities, the emphasis is quite different. Rather than being led along a prescribed path, students are equipped with a set of tools for finding their own way. The focus is on experimental techniques: holding certain parts of reality constant while varying others in order to better understand causes and consequences; systematically exploring a range of possibilities and outcomes and noting relevant similarities and differences; making thoughtful guesses and intuitive leaps and then testing them against previous assumptions. Most important, students are taught to accept responsibility for their own continuing learning. (Japan’s schools, it should be noted, are weakest in this dimension.)

Finally, there is the capacity to collaborate. As has been noted, symbolic analysts typically work in teams—sharing problems and solutions in a somewhat more sophisticated version of a child’s play group. The play of symbolic analysts may appear undirected, but it is often the only way to discover problems and solutions that are not known to be discoverable in advance. Symbolic analysis also spend much of their time communicating concepts—through oral presentations, reports, designs, memoranda, layouts, scripts, and projections—and then seeking a consensus to go forward with the plan.

Learning to collaborate, communicate abstract concepts, and achieve a consensus are not usually emphasized within formal education, however. To the contrary, within most classrooms in the United States and in other nations, the overriding objective is to achieve quiet and solitary performance of specialized tasks. No talking! No passing of notes! No giving one another help! Here again, the rationale is efficiency and the presumed importance of evaluating individual performance. Group tasks are not as easily monitored or controlled as is individual work. It is thus harder to determine whether a particular student has mastered the specified material.

Yet in America’s best classrooms, again, the emphasis has shifted. Instead of individual achievement and competition, the focus is on group learning. Students learn to articulate, clarify, and then restate for another how they identify and find answers. They learn how to seek and accept criticism from peers, solicit help, and give credit to others. They also learn to negotiate—to explain their own needs, to discern what others need and view things from others’ perspectives, and to discover mutually beneficial resolutions. This is an ideal preparation for lifetimes of symbolic-analytic teamwork.

Again, the claim here is not that America’s schools and colleges are doing their jobs adequately. The argument is narrower: That our best schools and universities are providing a small subset of America’s young with excellent basic training in the techniques essential to symbolic analysis. When supplemented by interested and engaged parents, good health care, visits to museums and symphonies, occasional foreign travel, home computers, books, and all the other cultural and educational paraphernalia that symbolic-analytic parents are delighted to shower on their progeny, the education of this fortunate minority is an exceptionally good preparation for the world that awaits.
The Education of the Symbolic Analyst (II)

The education of the symbolic analyst does not end with graduation. As the data on American incomes reveal, a college education is usually necessary but far from sufficient for symbolic-analytic success. Learning continues on the job.

Herewith the second reason why America's symbolic analysts will continue to excel in global markets: In the United States as in no other nation, symbolic analysts are concentrated in specialized geographic pockets where they live, work, and learn with other symbolic analysts devoted to a common kind of problem-solving, identifying, and brokering. The cities and regions around which they have clustered, and the specialties with which these places are identified, are valued around the world: Los Angeles in music and film; the San Francisco Bay area and greater Boston in science and engineering; New York and Chicago in global finance; Washington, D.C., in international affairs, government relations, and the worldwide marketing of weapons; New York for law, advertising, and publishing. Within these areas, and in many others, exist more specific zones of super-specialized symbolic analysis, also sold directly to world markets: just north and west of Boston, software engineers who have particular experience in computer graphics; between Little Rock and Fayetteville, Arkansas, scientists specializing in molecular biology and biotechnology; along New York's Park Avenue, between Forty-second and Fifty-ninth streets, bankers with expertise in the Korean financial market; near Minneapolis, researchers specializing in medical devices and instruments; south of Portland, Oregon, specialists in advanced semiconductors; in Irvine and Pasadena, California, industrial designers specializing in automobiles and consumer electronics products; and around every major American university, teams of professors, graduate students, and recent graduates selling world-class expertise in particular technologies, markets, or management practices.

Such symbolic-analytic zones cannot easily be duplicated elsewhere on the globe. While specific inventions and insights emanating from them traverse the globe in seconds, the cumulative, shared learning on which such ideas are based is far less portable. Other nations may try, with varying degrees of success, to create a Hollywood, a Wall Street, or a Silicon Valley. But to do so requires more than money. Each of these symbolic-analytic zones represents a complex of institutions and skills which has evolved over time. To contrive exactly the right balance is no easy task.

These zones serve as design centers, development laboratories, and strategic-brokering hubs for worldwide operations. The plans, designs, images, formulae, and strategies that spring from them enter global webs, where they are added to other high-value concepts issuing from other symbolic-analytic zones and to high-volume objects fabricated and assembled around the world. While it is of course possible to solve, identify, and broker new problems without living in one of these pockets, proximity helps. The building movie director can gain significant insight into the making of a successful motion picture without setting foot in Hollywood, and the point is that one can learn so much, so easily, by being there. Recall the importance of on-the-job learning to symbolic analysis. The fortunate student gains from formal education the techniques and habits of abstraction, system thinking, experimentation, and collaboration—all of which are prerequisites for a lifetime of creative problem solving, identifying, and brokering. From then on, learning comes from doing. The struggle over complex problems yields new insights and approaches relevant to even more complex problems, and so on, as learning builds on itself.

1 Among the seminal studies of the development of regional agglomerations are R. Vernon, Metropoli 1985 (Cambridge: Harvard University Press, 1960), and M. Hall, Made in New York (Cambridge: Harvard University Press, 1959). For a list of more recent studies, see "A Note on Additional Sources" at the end of the text.
Abstraction becomes more sophisticated; system thinking expands and deepens; the repertoire of experimental techniques widens; collaborative skills improve.

Recall also the importance of rapid, informal communications among participants. Since complex problems usually cannot be structured in advance, continuous and even haphazard sharing of puzzles and solutions reveals new possibilities that no person would have uncovered alone. Within the symbolic-analytic zone, insights and experiences are widely shared. The sharing extends beyond the immediate working team to include friends, former associates, informal acquaintances. It occurs spontaneously over lunches, at dinner parties, over drinks, at the gym. Such sharing is a feature of daily gossip—the continuous chatter about who's doing what, who's discovering what, where the action is. Software engineers specializing in computer graphics, who work and live in the same Boston "technoburb," informally pick up new tricks from one another as they trade war stories. So, too, with scriptwriters working in and around Hollywood, advertising executives on Madison Avenue, Washington lobbyists, Chicago futures traders, New York editors and publishers, and so on—informally, at all hours. When one's job is to think about and communicate abstract ideas, "work" occurs wherever and whenever ideas are communicated. Thus the creative benefits of proximity.

There are other benefits. The local gossip serves as a highly efficient and highly specialized job grapevine. It alerts everyone in the area to who is good at doing what and where skills can be best utilized. In this way strategic brokers can readily locate the exact talents and skills needed to identify and solve specific problems—the record producer who took a similarly weak back-casting band and coaxed a hard-edged performance out of them, the lawyer who structured a similar kind of contract and devised a novel arbitration clause, the software engineer who figured out a simple way to program a complex graphic-user interface. And problem-solvers and -identifiers like these can likewise discover more opportunities to apply, and thus refine, what they know.

Here, the young symbolic analyst finds opportunity. The ru-

mor mill reveals who has solved or identified what problem for which strategic broker and, more revealingly, whose name is ascending and whose is descending. The huddling scriptwriter goes to Hollywood not because of the air quality but because of the opportunities available there for learning the craft and making the right connections. Contemporary speech identifies the phenomenon widespread within symbolic-analytic zones, of "networking"—the studied process of knowing what is happening and simultaneously making oneself known.

Within the zone, the symbolic analyst moves from project to project, adding experience and skill—from one software project to another, to another movie script, another advertising campaign, another financial restructuring. Sometimes the next project is undertaken with the same team that worked together on the preceding project under the auspices of the same firm. The symbolic analyst may remain for years with this organization, working with teams drawn from the same pool of partners or employees. Often, however, the tenure will be shorter. At the extreme, the symbolic analyst will see—jumping from firm to firm, and team to team, as different projects beckon. But even under these more fluid arrangements, team members are likely to have worked with one another before on different projects, for different firms. The engineers and marketers who join together to create a new computer graphic software under the auspices of a start-up firm may include many of the same engineers and marketers who tackled another software project three years before for another start-up.

In sum, the symbolic-analytic zone functions as a kind of large, informal organization all its own, whose members' skills are combined in certain ways for particular projects and subsequently recombined in different ways for others. Information travels quickly within this fluid geographic organization. The computer graphics specialist informally stays in touch even when they are not working together—sharing judgments about which firms and projects seem most promising and which are likely to fold. They get word the moment a strategic broker has financing for a new project and when a star software engineer is signed up to work on it. They quickly gauge their chances of joining the new team and whether they should try. In this highly efficient but informal system, talents and abilities continuously shift to wherever they can add the most value.
There is yet another advantage stemming from the concentration of symbolic analysts within such zones. Their numbers and proximity create a local market for all kinds of specialized in-person services and facilities needed at hand. It is no accident that Hollywood is home to a disproportionately large number of voice coaches, fencing trainers, dancing instructors, performers' agents, and suppliers of photographic, acoustic, and lighting equipment. Also found in close proximity are restaurants with precisely the ambiance favored by producers wooing directors and directors wooing screenwriters, and everyone else in Hollywood wooing everyone else. There are sound stages for state-of-the-art recording, delivery services experienced in moving large and delicate props, and car rental agencies specializing in classic and antique cars as well as conspicuous limousines. Services like these cannot be found in Des Moines; there is not sufficient demand for them. Yet the supply of them in Hollywood creates further demand for them there. Hollywood becomes even more attractive to symbolic analysts specializing in activities that require such services.

Also relevant are public amenities found in or near symbolic-analytic zones, like convention centers, research parks, world-class universities, international airports, and convenient transport to mountain or seashore. The convention center allows symbolic analysts to meet and congregate in large numbers for presentations, exhibits, and intense rounds of networking. The research park, made conveniently accessible through the state's power of eminent domain, gives symbolic analysts adequate and sometimes low-cost working space in proximity to one another. The university offers a steady supply of bright and eager graduates delighted to labor at low initial wages for the opportunity to gain experience in the hope of greater rewards later on. The international airport provides direct access to the rest of the world. The mountains or seashores offer easy access to recreation.

So important are these public amenities, in particular the university and the airport, that their presence would stimulate some collective symbolic-analytic effort even on parched desert or frozen tundra. A world-class university and an international airport combine the basic rudiments of global symbolic analysis—brains, and quick access to the rest of the world.

Symbolic-analytic zones evolve. The initial spur may be the presence of some such set of public amenities coupled with a few inventive geniuses. This promising setting attracts some symbolic analysts, whose presence attracts others. As the group gains experience solving and identifying problems, they begin to add value to global enterprise webs. Some then break off to start their own firms or otherwise recombine their skills to tackle new projects. Strategic brokers, attracted by this growing concentration of specialized skills, bring even more complex problems, which, in turn, enhance the skills of those who work on them. As even more value is added to global enterprise webs, the area begins to gain a worldwide reputation for the unique skills and insights of the symbolic analysts working there, which attracts additional talent from around the nation (and even the world). Meanwhile, specialized services become available, making the area even more attractive. This pattern, or one like it, has marked the evolution of America's international centers of software engineering, finance, publishing, music and film, broadcasting, advertising, management consulting, and automotive design, among many others.

Such an evolutionary pattern is not inevitable, of course. Many budding symbolic-analytic zones have failed to blossom into world centers. The point is that when it does succeed the process is likely to be gradual, complex, and dependent on many public and private interactions. Hence the difficulty of attempting to replicate such symbolic-analytic nodes from scratch in other places around the globe.

For two excellent discussions about the relationship between universities and regional economic development, see Adam Jaffe, "Universities and Regional Patterns of Commercial Innovation," REI Review, Case Western Reserve University, September 1989; and Stuart W. Leslie, "From Backwater to Powerhouse: Stanford Engineering and Silicon Valley," Stanford, March 1990.
Even if a zone does emerge as a worldwide center, there are no guarantees it will remain one. Success may, in fact, contribute to subsequent decline. The zone may become too congested, polluted, or expensive to attract the young, talented symbolic analysts it once did. On such grounds have perennial predictions of the imminent demise of Hollywood, Silicon Valley, and midtown Manhattan been based. Or the very intensity and speed of communications within the zone may jeopardize it. Energies of symbolic analysts may be diverted too readily from sustained innovation to prevailing fashion; gossip may serve less as a source of useful data than of gamesmanship. It is not unheard of, within such tightly knit communities, that trade secrets are disclosed, insider stock tips are exchanged, or trusted employers defect to competitors, carrying away customers and clients. Such escapades generate lawsuits, and worse. Symbolic-analytic centers are not infrequently the scenes of furious claims and counterclaims, recriminations, and seemingly endless grudges and disputes. These, in turn, may serve to further enliven the local scuttlebutt, but they do not foster a climate of trusting relationships.

Such regressive tendencies notwithstanding, America's symbolic-analytic zones remain, for the most part, wondrously resilient. Within them, America's symbolic analysts continue to improve their abilities to solve, identify, and broker ever more challenging conceptual problems. Competition from foreign symbolic analysts is intensifying, of course. But without direct access to such large, dynamic learning communities, non-Americans begin at a substantial disadvantage.
the former have little political leverage over the latter. They cannot force symbolic analysts to share their incomes with them or to invest in their futures. The politics of secession are relatively peaceful, in other words, because the other side lacks any political artillery.

25

Who Is “Us”?

It is right to prefer our own country to all others, because we are children and citizens before we can be travellers and philosophers.

GEORGE SANTAYANA,
The Life of Reason (1935)

What is the role of a nation within the emerging global economy, in which borders are ceasing to exist? My answer has, I hope, been clear. Rather than increase the profitability of corporations flying its flag, or enlarge the worldwide holdings of its citizens, a nation’s economic role is to improve its citizens’ standard of living by enhancing the value of what they contribute to the world economy. The concern over national “competitiveness” is often misplaced. It is not what we own that counts; it is what we do.

Viewed in this way, America’s problem is that while some Americans are adding substantial value, most are not. In consequence, the gap between those few in the first group and everyone else is widening. To improve the economic position of the bottom four-fifths will require that the fortunate fifth share its wealth and invest in the wealth-creating capacities of other Americans. Yet as the top becomes ever more tightly linked to the global economy, it has less of a stake in the performance and potential of its less fortunate compatriots. Thus our emerging dilemma, and that of other nations as well.

History rarely proceeds in a direct line, however. Those who project that today’s steady improvement (or deterioration) over yesterday’s will become even more pronounced tomorrow often end up embarrassed when the future finally arrives. In the intervening moments there will occur an earthquake, a potent idea, a
revolution, a sudden loss of business confidence, a scientific discovery—reversing the seemingly most intransigent of trends and causing people to wonder how they could ever have been deluded into believing that any other outcome was ever remotely possible. The predictable failure of all prediction notwithstanding, the public continues to pay attention to stock analysts, trend spotters, futurologists, weather forecasters, astrologers, and economists. Presumably, such respect is due less to the accuracy of their prophecies than to the certainty with which they are delivered.

The reader of these pages is duly warned. An all-too-simple extrapolation of the past into the future would show a continuing rise in the fortunes of symbolic analysts and a steady decline in the fortunes of almost everyone else. The costs of worldwide transportation and communications will continue to decline—creating an ever larger market, and burgeoning demand, for the services of America's problem-solvers, identifiers, and brokers, but simultaneously generating an ever larger supply of unskilled workers. In consequence, America's symbolic analysts will become even wealthier; routine producers will grow poorer and fewer in number; and, with the enhanced mobility of world labor and the versatility of labor-saving machinery, in-person servers will become less economically secure.

The fortunes of the most well-off and the least will thus continue to diverge. By 2020, the top fifth of American earners will account for more than 60 percent of all the income earned by Americans; the bottom fifth, for 2 percent. Symbolic analysts will withdraw into ever more isolated enclaves, within which they will pool their resources rather than share them with other Americans or invest them in ways that improve other Americans' productivity. An ever smaller proportion of their incomes will be taxed and thence redistributed or invested on behalf of the rest of the public.

Government spending on education, training, and infrastructure will continue to decline as a proportion of the nation's total resources; any savings attributable to a smaller defense budget will result in further tax reductions and the diminution of the fiscal deficit. Poorer cities, towns, and states will be unable to make up the difference.

Distinguished from the rest of the population by their global linkages, good schools, comfortable lifestyles, excellent health care, and abundance of security guards, symbolic analysts will complete their secession from the union. The townships and urban enclaves where they reside, and the symbolic-analytic zones where they work, will bear no resemblance to the rest of America. Nor will there be any direct connections between the two. America's poorest citizens, meanwhile, will be isolated within their own enclaves of urban and rural desperation; an ever-larger proportion of their young men will fill the nation's prisons. The remainder of the American population, growing gradually poorer, will feel powerless to alter any of these trends.

It is not that simple, of course. Other events will likely intervene to deflect this trajectory. Not the least is the inability of symbolic analysts to protect themselves, their families, and their property from the depredations of a larger and ever more desperate population outside. The peace of mind potentially offered by platoons of security guards, state-of-the-art alarm systems, and a multitude of prisons is limited.

There is also the possibility that symbolic analysts will decide that they have a responsibility to improve the well-being of their compatriots, regardless of any personal gain. A new patriotism would thus be born, founded less upon economic self-interest than upon loyalty to the nation.
behavior, so did they, with the result that we benefited all the more. The resulting networks of economic interdependence induced the habits of citizenship.

Between 1950 and the early 1970s, the American economy as a whole began to exemplify this principle. Labor, business, and the broader public, through its elected representatives, tacitly cooperated to promote high-volume production; the resulting efficiencies of scale generated huge profits; some of the profits were reinvested to create even vaster scale, and some were returned to production workers and middle-level managers in the form of higher wages and benefits. As a result, large numbers of Americans entered the middle class, ready to consume the output of this burgeoning system.

But as the borders of cities, states, and even nations no longer come to signify special domains of economic interdependence, Tocqueville’s principle of enlightened self-interest is less compelling. Nations are becoming regions of a global economy; their citizens, laborers in a global market. National corporations are turning into global webs whose high-volume, standardized activities are undertaken wherever labor is cheapest worldwide, and whose most profitable activities are carried out wherever skilled and talented people can best conceive and solve problems. Under such circumstances, economic sacrifice and restraint exercised within a nation’s borders is less likely to come full circle than it was in a more closed economy.

The question is whether the habits of citizenship are sufficiently strong to withstand the centrifugal forces of the new global economy. Is there enough of simple loyalty to place—a civic obligation, even when unadorned by enlightened self-interest—to elicit sacrifice nonetheless? We are, after all, citizens as well as economic actors; we may work in markets but we live in societies. How tight is the social and political bond when the economic bond unravels?

The question is relevant to all nations subject to global economic forces—forces which are reducing the interdependence of their citizens and separating them into global winners and losers. In some societies, where national allegiances are stronger than in others, the balance between societal ties and economic ties tilts toward the former. The pull of the global economy notwithstanding, national allegiances are sufficiently potent to motivate the winners to continue helping the losers. The “we’re all in it togetherness” nationalism that characterizes such places is founded not only on enlightened self-interest but also on a deeply ingrained sense of shared heritage and national destiny. The Japanese, Swedes, Austrians, Swiss, and Germans, for example, view themselves as cultures whose strength and survival depend, to some extent, on sacrifices by the more fortunate among them. It is a matter of national duty and pride. Partly as a result, the distribution of income within these nations has been among the most equal of any countries (although the global division of labor is beginning to drive a wedge between their rich and poor and testing their commitment to economic equality). These nations, incidentally, experienced during the decades of the 1960s and 1970s some of the most spectacular records of growth of all industrialized nations.

Could such sentiments be nurtured in America? Should they be?

3

Nationalism can be a hazardous sentiment. The same “we’re all in it together” attitude that elicits mutual sacrifice within a nation can easily degenerate into jingoistic contempt for all things foreign. Indeed the two emotions tend to reinforce one another. It is a commonplace notion in Britain that the nation’s citizens have never since displayed such virtue and solidarity as when they

1 Much has been written about the “developmental state” of modern Japan, South Korea and Hong Kong, once touted by orthodox free marketeers as models of laissez-faire economic individualism, on closer inspection look remarkably like their more advanced neighbor to the north. See, for example, Alice Amsden, Asia’s Next Giant (New York: Oxford University Press, 1989); and M. Castelli and L. Toon, “High Technology and the Changing International Division of Production,” in R. Parcell (ed.), The Newly Industrializing Countries in the World Economy (Boulder, Colo.: Lynne Rienner, 1989). Austria, Switzerland, and Sweden represent a different path, of course, but these nations also are characterized by systems of internal bargaining which soften adjustment for their least fortunate citizens and elicit sacrifices from their most fortunate. See, for example, Peter Raab, Cooperation and Change: Austria, Switzerland, and the Politics of Industry (Ithaca, N.Y.: Cornell University Press, 1980).
fought Hitler. America's Cold War with the Soviet Union inspired, and provided justification for, billions of dollars of public expenditure on highways, education, and research. The willingness of talented Japanese citizens to work long hours and receive relatively low incomes for the honor of doing their part for their country is fueled by the same set of emotions that makes it difficult for the Japanese to open their borders to foreign products and immigrants.

History offers ample warning of how "zero-sum" nationalism—the assumption that either we win or they win—can corrode public values to the point where citizens support policies that marginally improve their own welfare while harming everyone else on the planet, thus forcing other nations to do the same in defense. Armaments escalate; trade barriers rise; cold wars turn hot. The same social discipline and fierce loyalty that have elicited sacrifices among Germans and Japanese have also, in this century, generated mind-numbing atrocities.

Unbridled nationalism can also cause civic values to degenerate at home. Nations grow paranoid about foreign agents in their midst; civil liberties are restricted on grounds of national security. Neighbors begin to distrust one another. Tribal allegiances can even tear nation-states apart. The violence that periodically erupts between Greek and Turkish Cypriots, Armenians and Azerbaijanis, Albanians and Serbs, Flemings and Walloons, Vietnamese and Cambodians, Israelis and Palestinians, Sikhs and other Indians, Tamils and Sinhalese, and Lebanon's Christian and Moslem sects is grim evidence of the costs of tribal loyalty.

The argument against zero-sum nationalism, and in favor of a larger and more cosmopolitan perspective, seems especially strong in light of the growing inequalities in the world. The gap between the top fifth and bottom four-fifths of incomes within the United States is negligible in comparison with the gap between the top fifth and bottom four-fifths of the world's population. North America, Western Europe, and East Asia—together comprising the top fifth—account for three-quarters of the gross world product and 80 percent of the value of world trade. As these wealthy regions have become uncoupled from the rest of the world, much of what remains behind is sinking precipitously into hopeless poverty.

Between 1970 and 1980, the number of undernourished peo-

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Everyone on the planet benefits from smaller and more powerful semiconductor chips regardless of who makes them.

It is true, of course, that the nation whose workers first gain the insights are likely to benefit disproportionately. This advantage may cause other nations’ citizens to feel relatively poorer, notwithstanding their absolute gain. Sociologists have long noted the phenomenon of “relative deprivation,” whereby people evaluate their well-being in light of others’ wealth. The average citizen of Great Britain is in absolute terms far better off than twenty years ago but feels poorer now that the average Italian has pulled ahead. When I ask my students whether they would prefer living in a world in which every American is 25 percent wealthier than now and every Japanese is much wealthier than the average American, or in one in which Americans are only 10 percent wealthier than now but ahead of the average Japanese, a large number usually vote for the second option. People may be willing to forgo absolute gains to prevent their perceived rivals from enjoying even greater gains. While understandable, such zero-sum impulses are hardly to be commended as a principle of international economic behavior. Since economic advances rarely benefit the citizens of all nations in equal proportion, such an approach, if widely adopted, would block most efforts to increase global wealth.

Economic interdependence runs so deep, in fact, that any zero-sum strategy is likely to boomerang, as the members of the Organization of Petroleum Exporting Countries discovered in the 1970s when their sky-high oil prices plunged the world into recession and reduced the demand for oil. Today, no nation’s central banker can control its money supply or the value of its currency without the help of other nations’ central bankers, nor can a nation unilaterally raise its interest rates or run large budget surpluses or deficits without others’ cooperation or acquiescence. These days, every advanced nation depends on others as a market for, and source of, its goods. The Japanese need a strong and prosperous America as a market for their goods and a place to invest their money. If any step they might take were to precipitate a steep economic decline in the United States, the results would be disastrous for the Japanese as well.

But what if foreigners dominate a major technology, as it seems likely the Japanese soon will with advanced semiconductors, high-definition television, and dozens of other gadgets? Again, we should beware of zero-sum assumptions. The Japanese mastery of particular technologies will not forestall technological progress in the United States or elsewhere. Technologies are not commodities for which world demand is finite, nor do they come in fixed quantities that either get or get less. Technologies are domains of knowledge. They are like the outer branches of a giant bush on which countless other branches are growing all the time. While Americans need direct experience in researching, designing, and fabricating technologies on outer branches if they are to share in future growth, these need not be exactly the same branches that are occupied by another nation’s work force.

The cosmopolitan man or woman with a sense of global citizenship is thus able to maintain appropriate perspective on the world’s problems and possibilities. Devoid of strong patriotic impulse, the global symbolic analyst is likely to resist zero-sum solutions and thus behave more responsibly (in this sense) than citizens whose frame of reference is narrower.

But will the cosmopolitan with a global perspective choose to act fairly and compassionately? Will our current and future symbolic analysts—acknowledging any special sense of responsibility toward a particular nation and its citizens—share their wealth with the less fortunate of the world and devote their resources and energies to improving the chances that others may contribute to the world’s wealth? Here we find the darker side of cosmopolitanism. For without strong attachments and loyalties extending beyond family and friends, symbolic analysts may never develop the habits and attitudes of social responsibility. They will be world citizens, but without accepting or even acknowledging any of the obligations that citizenship in a polity normally implies. They will resist zero-sum solutions, but they may also resist all other solutions that require sacrifice and commitment. Without a real political community in which to learn, refine, and practice the ideals of justice and fairness, they may find these ideals to be meaningless abstractions.

Senses of justice and generosity are learned. The learning has many roots, but significant among them is membership in a po-
not come as a surprise, then, that all great social movements have
begun locally. Those who aim to reform the world in one great
swipe often have difficulty signing up credulous recruits.

In short, while a cosmopolitan view provides a useful and ap-
propriate perspective on many of the world's problems and avoids
the pitfalls of zero-sum thinking, it may discourage the very steps
necessary to remedy the problems it illuminates. It is not clear
that mankind is significantly better off with an abundance of wise
"cosmopolitans feeling indifferent or ineffective in the face of the
world's ills than it is with a bunch of foolish nationalists intent on
making their particular society Number One.

6

But must we choose between zero-sum nationalism and impos-
sive cosmopolitanism? Do these two positions describe the only
alternative modes of future citizenship? Unfortunately, much of
the debate we hear about America's national interest in the global
economy is framed in just these dichotomous terms. On one side
are zero-sum nationalists, typically representing the views of rou-
tine producers and in-person servers, urging that government
advances America's economic interests—even at the expense of
others around the globe. In their view, unless we become more
assertive, foreigners will continue to increase their market shares
at America's expense in industry after industry—exploiting our
openness, gaining competitive advantage over us, ultimately rob-
ing us of control over our destinies. On the other side are laissez-
faire cosmopolitans, usually representing the views of symbolic
analysts, arguing that government should simply stay out. In their
view, profit-seeking individuals and firms are far better able to
decide what gets produced where; governments only mess things
up. Free movement of all factors of production across national
boundaries ultimately will improve everyone's lot.

What is being lost in this debate is a third, superior position:
a positive economic nationalism, in which each nation's citizens
take primary responsibility for enhancing the capacities of their
countrymen for full and productive lives, but who also work with
other nations to ensure that these improvements do not come at
others' expense. This position is not that of the laissez-faire cos-

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7Jonathan Glover, "It Makes No Difference Whether or Not I Do It," Sup-
metropolitan, because it rests on a sense of national purpose—of principled historic and cultural connection to a common political endeavor. It seeks to encourage new learning within the nation, to smooth the transition of the labor force from older industries, to educate and train the nation's workers, to improve the nation's infrastructure, and to create international rules of fair play for accomplishing all these things. The objectives of such investments are unambiguously public.

Neither is this the position of a zero-sum nationalist: Here the overarching goal is to enhance global welfare rather than to advance one nation's well-being by reducing another's. There is not a fixed amount of world profit to be divided or a limited market to be shared. It is not "their" corporations against "ours" in a fight for dominance in world commerce. We meet instead on an infinitely expanding terrain of human skills and knowledge. Human capital, unlike physical or financial capital, has no inherent bounds.

Indeed, these nationalist sentiments are likely to result in greater global wealth than will cosmopolitan sentiments founded upon loyalty to no nation. For like villagers whose diligence in tending to their own gardens results in a bounteous harvest for all, citizens who feel a special obligation to cultivate the talents and abilities of their compatriots end up contributing to the well-being of compatriots and noncompatriots alike. One nation's well-being is enhanced whenever other nations improve the capacities of their own citizens. To extend the metaphor, while each garden tender may feel competitive with every other, each also understands that the success of the total harvest requires cooperation. While each has a primary responsibility to tend his own garden, each has a secondary responsibility to ensure—and a genuine interest in seeing—that all gardens flourish.

Thus positive economic nationalism would eschew trade barriers against the products of any work force as well as obstacles to the movement of money and ideas across borders. Even were such obstacles enforceable, they would only serve to reduce the capacity of each nation's work force to enjoy the fruits of investments made in them, and in others. But not all government intervention would be avoided. Instead, an approach would encourage public spending within each nation in any manner that enhanced the capacities of its citizens to lead full and productive lives—including pre- and postnatal care, child care and preschool preparation, excellent primary and secondary education, access to college regardless of financial condition, training and retraining, and good infrastructure. Such investments would form the core of national economic policy.

Positive nationalism also would tolerate—even invite—public subsidies to firms that undertook within the nation's borders high-value-added production (complex design, engineering, fabrication, systems integration, and so forth), so that the subsidy-granting nation's work force could gain specialized on-the-job skills. But it would draw no distinctions based on the nationalities of the firm's shareholders or top executives. To ensure against zero-sum ploys in which nations bid against one another to attract the same set of global firms and related technologies, nations would negotiate over the appropriate levels and targets of such subsidies. The result would be a kind of "GATT for direct investment"—a logical extension of the General Agreement on Tariffs and Trade that the United States sponsored after World War II—setting out the rules by which nations could bid for high-value-added investments by global corporations. Barred would be threats to close the domestic market unless certain investments were undertaken within it, for such threats would likely unravel into zero-sum contests. Instead, the rules would seek to define fair tactics, depending upon the characteristics of the national economy and the type of investment being sought. For example, the amount of permissible subsidy might be directly proportional to the size of the nation's work force but inversely proportional to its average skills. Nations with large and relatively unskilled work forces would be allowed greater leeway in bidding for global investment than nations with smaller and more highly skilled work forces.

Other kinds of subsidies would be pooled and parcelled out to where they could do the most good, as the European Community has begun to do regionally. For example, nations would jointly fund basic research whose fruits are likely to travel almost immediately across international borders—projects such as the high-energy particle accelerator, the human genome, and the exploration of space. (Single governments are unlikely to support many such projects on their own, given that the entire world so easily benefits from them.) How such funds were apportioned, and toward what ends, would, of course, be subject to negotiation.
Positive economic nationalism also would ease the transition of a work force out of older industries and technologies in which there was worldwide overcapacity. This might take the form of severance payments, relocation assistance, extra training grants, extra unemployment insurance, regional economic aid, and funds for retooling or upgrading machinery toward higher-value-added production. Since every nation benefits when overcapacity anywhere is reduced, these subsidies might come from a common fund established jointly by all nations. Payments into the fund could be apportioned according to how much of that particular industry's capacity lay within each nation's borders at the start.

Finally, positive economic nationalism would seek to develop the capacities of the work forces of the Third World—not as a means of forestalling world communism or stabilizing Third World regimes so that global companies can safely extract raw materials and sell products within them—but as a means of promoting indigenous development and thereby enhancing global wealth. To this end, the shift of high-volume, standardized production to Third World nations would be welcomed, and markets in advanced economies would be open to them. Advanced nations would reduce the Third World's debt burden, make new lending available, and monitor the loans more carefully than in the past.

The pressures of global change have fragmented the American electorate. Routine producers and in-person servers—tending toward zero-sum nationalism—fear that foreigners, the Japanese in particular, are taking over the nation's assets and secretly influencing American politics. They resent low-wage workers in Southeast Asia and Latin America who are inheriting many of America's routine production jobs and seem in addition to be swarming into American cities. Many symbolic analysts—tending toward laissez-faire cosmopolitanism—feel no particular urgency about the economic plight of other Americans, on the one hand, and, on the other, feel ineffectual and overwhelmed with regard to many of the larger problems facing the rest of the world.

Neither constituency, in other words, is naturally disposed to positive nationalism. Those who are threatened by global competition feel that they have much to lose and little to gain from an approach that seeks to enhance world wealth, while those who are benefiting the most from the blurring of national borders sense that they have much to lose and little to gain from government intervention intended to spread such benefits.

The direction we are heading is reasonably clear. If the future could be predicted on the basis of trends already underway, laissez-faire cosmopolitanism would become America's dominant economic and social philosophy. Left to unfold on its own, the worldwide division of labor not only will create vast disparities of wealth within nations but may also reduce the willingness of global winners to do anything to reverse this trend toward inequality—either within the nation or without. Symbolic analysts, who hold most of the cards in this game, could be confident of "victory." But what of the losers?

We are presented with a rare historical moment in which the threat of worldwide conflict seems remote and the transformations of economies and technology are blurring the lines between nations. The modern nation-state, some two hundred years old, is no longer what it once was: Vanishing is a nationalism founded upon the practical necessities of economic interdependence within borders and security outside. There is thus an opportunity for us, as for every society, to redefine who we are, why we have joined together, and what we owe each other and the other inhabitants of the world. The choice is ours to make. We are no more slaves to present trends than to vestiges of the past. We can, if we choose, assert that our mutual obligations as citizens extend beyond our economic usefulness to one another, and act accordingly.