

## CHAPTER 2

### *The Creative Ethos*

Powering the great ongoing changes of our time is the rise of human creativity as the defining feature of economic life. Creativity has come to be valued—and systems have evolved to encourage and harness it—because new technologies, new industries, new wealth and all other good economic things flow from it. And as a result, our lives and society have begun to resonate with a creative ethos. An ethos is defined as “the fundamental spirit or character of a culture.” It is our commitment to creativity in its varied dimensions that forms the underlying spirit of our age. To grasp the spirit and character of the emerging Creative Age, this chapter takes a closer look at creativity itself: what it is, and where it comes from. In order to structure the arguments that follow, I want to start with three basic points.

First, creativity is *essential* to the way we live and work today, and in many senses always has been. As the Stanford University economist Paul Romer likes to say, the big advances in standard of living—not to mention the big competitive advantages in the marketplace—always have come from “better recipes, not just more cooking.”<sup>1</sup> One might argue that’s not strictly true. One might point out, for instance, that during the long period from the early days of the Industrial Revolution to modern times, much of the growth in productivity and material wealth in the industrial nations came not just from creative inventions like the steam engine, but from the widespread application of hard-nosed, “cooking in quantity” business methods like massive division of labor, concentration of assets, vertical integration and economies of scale. But those methods themselves were creative developments. They were the new business models of their time, seldom used before and never in such forms or on such a scale. Factories with massive division of labor were a radical departure from the small-shop craftsmanship of the 1700s. In the late 1800s, when Andrew Carnegie built his highly integrated steel empire, he was hailed as one of the first to truly understand the power of such integration.<sup>2</sup> Since then creativity has grown even more important. Traditional economic factors such as land

and natural resources, physical labor and capital have become either less crucial or more readily obtainable. Moreover, as the next chapter will show, new structures for systematically eliciting and applying creativity—such as large-scale funding for basic research and an extensive system of venture capital, as well as a broad milieu for harnessing artistic and cultural creativity—have become ingrained features of our economic life.

Second, human creativity is multifaceted and multidimensional. It is not limited to technological innovation or new business models. It is not something that can be kept in a box and trotted out when one arrives at the office. Creativity involves distinct kinds of thinking and habits that must be cultivated both in the individual and in the surrounding society. Thus, the creative ethos pervades everything from our workplace culture to our values and communities, reshaping the way we see ourselves as economic and social actors—our very identities. It reflects norms and values that both nurture creativity and reinforce the role that it plays. Furthermore, creativity requires a supportive environment that provides a broad array of social and cultural as well as economic stimuli. It is thus associated with the rise of new work environments, lifestyles, associations and neighborhoods, which in turn are conducive to creative work. Such a broadly creative environment is critical for generating technological creativity and the commercial innovations and wealth that flow from it.

Third, perhaps the biggest issue at stake in this emerging age is the ongoing tension between creativity and organization. The creative process is social, not just individual, and thus forms of organization are necessary. But elements of organization can and frequently do stifle creativity. A defining feature of life in the early to mid-twentieth century—a period referred to as the organizational age—was the dominance of large-scale and highly specialized bureaucratic organizations. Writing in the 1940s, the great economist Joseph Schumpeter called attention to the chilling effect of large organizations on creativity. In his landmark book *Capitalism, Socialism and Democracy*, Schumpeter noted that capitalism's great strength had long been the "function of entrepreneurs" who "revolutionize the pattern of production." And then he gloomily predicted its demise:

This social function is already losing its importance. . . . Technological progress is increasingly becoming the business of teams of trained specialists who turn out what is required and make it work in predictable ways. . . . Bureau and committee work tends to replace individual action. . . . The perfectly bureaucratized giant industrial unit not only ousts the small or

medium-sized firm and "expropriates" its owners, but in the end it also ousts the entrepreneur.<sup>3</sup>

In an interview that I conducted in 2000, a young woman described this same chilling effect in stark and memorable terms:

Where I grew up, we were conditioned to play the roles that we were dealt. We were not encouraged to create and build our visions, but rather to fit into the visions of a select few. I like to say that we were "institutionalized" individuals—because institutions defined our lives.<sup>4</sup>

The rise of creativity as an economic force over the past few decades has brought new economic and social forms into existence that mitigate this tension to some degree, but they have not fully resolved it. Everything from the rise of the entrepreneurial startup company and the formal venture capital system to the loosening of traditional cultural norms regarding work and life reflects attempts to elude the strictures of organizational conformity. Of course large organizations still play dominant roles in our society, and are required to do many things. Whereas one person can write brilliant software, it takes large organizations to consistently upgrade, produce and distribute that software. And though many larger organizations have become more nimble and flexible, they remain large-scale bureaucracies. As a result, organizations are evolving too—developing new ways to foster creativity while providing a structure in which to produce and manage work.

This does not mean that creativity has won the day and now powers everything we do. Our new creative economic system is far from fully formed and continues to evolve. Furthermore, it is not a panacea for the myriad social and economic ills that confront modern society. It will not somehow magically alleviate poverty, eliminate unemployment, overcome the business cycle and lead to greater happiness and harmony for all. In some respects, left unchecked and without appropriate forms of human intervention, this creativity-based system may well make some of our problems worse.

### Myths and Misconceptions

While many commentators have picked up on aspects of these themes, we still lack a good overall working model of the economic and social system that is carrying us into the Creative Age. One problem is that most public

discourse about what's really new in our economy and society tends to polarize. Time and again, we are offered utopian prophecies versus prophecies of gloom and doom—those who believe technology will liberate us versus those who see it as a new oppressor; those who herald the rise of so-called New Economies and those who deplore them. What I'd like to do here is dispel a few of the more popular strains of happy talk. Some of these lines of thinking may easily be confused with what I am trying to say. Indeed, I occasionally agree with some of their premises. So by making it clear exactly where and why I get off the boat, perhaps I can also make it clear what I do think is happening. Herewith, then, a mild rant on four common happy-talk themes.

*"Technology Will Liberate Us"*

One of the most enduring myths of the modern age is that technology will liberate us from large, faceless organizations—be they large corporations or bureaucratic governments—as well as from other burdens and constraints, and somehow give us the lives we want. Techno-utopianism has been around for a long time. In the early 1900s, some claimed that the car would set us free from the constraints of geography and liberate us from dirty congested cities, and that the airplane would eliminate war by bringing the peoples of the earth closer together. In the 1950s, nuclear power was going to make electricity "too cheap to meter."

Techno-utopianism gathered steam again with the advent of computing and networks. Perhaps its most extreme contemporary spokesman is George Gilder, the former conservative social commentator turned technology guru. His 2000 book *Telecosm* is subtitled *How Infinite Bandwidth Will Revolutionize Our World*.<sup>5</sup> The savior this time is optical networking. Gilder declares that new advances in the use of optics to transmit data will give us almost "infinite bandwidth," such vast signal-carrying capacity that there will be virtually no limits on who can communicate how much to whom. It will all be lightning-fast and affordable; the true potential of the Internet and our other networks will be unlocked at last.

*Telecosm* evokes the great themes of computer-age techno-utopianism in florid, almost hallucinogenic prose. As Gilder describes it, the optical web will usher in a new age of wonders:

Imagine gazing at the web from far in space . . . the web appears as a global efflorescence, a resonant sphere of light. It is the physical expression of the

converging telecosm, the radiant chrysalis from which will spring a new global economy.<sup>6</sup>

It will transform business from a dreary dog-eat-dog game to a Zen-like activity:

The customers are the product and the product is the customer and both serve one another, in a rhythm of creativity between producers and users, a resonance of buyers and sellers in which the buyers also sell and the sellers also buy in widening webs of commerce. The resonance is the wealth and the light and there is no impedance in the middle.<sup>7</sup>

It will free us from the stinking oppression of governments everywhere:

At the millennium, the incandescence is diffusing around the world, offering a promise of new freedom and prosperity. . . . Encircling the globe under oceans and beaming from satellites, the radiance is increasingly eroding the powers of despots and bureaucracies, powers and principalities.<sup>8</sup>

Because surely we can all agree that:

Within the market space of the net, anyone anywhere can issue a petition or publication, utter a cry for help, broadcast a work of art. Anyone can create a product, launch a company, finance its growth, and spin it off into the web of trust.<sup>9</sup>

I would just warn that before you spin anything off into the web of trust, be sure your credit card number is properly encrypted. One of the great flaws of techno-utopianism is the notion that a new technology will give rein only to that which is good and positive in us, and not be used for deception, destruction—or, indeed, for oppression. I haven't seen a technology yet that cures the dark side of human nature.

But Gilder does not stop there. In his telecosmic wonder-world, the web will erase the limits of geography and even of physicality:

Imagine that any worker could collaborate with any other worker at any time. . . . Imagine the mesh of lights—the radiance of sine waves—as an efflorescence of learning curves as people around the world launch projects and experiments without requiring the physical plant and equipment and

regimented workers in Adam Smith's factory. Without the overhead and entropy, noise and geographical friction, entrepreneurial creativity takes off.<sup>10</sup>

Best of all, time itself will be transcended:

The entire [present-day] economy is riddled with time-wasting routines and regimes. . . . The message of the telecosm is that this era is over. . . . Liberated from hierarchies that often waste their time and talents, people will be able to discover their most productive roles.<sup>11</sup>

Techno-utopianism is a variant of the old great-man theory of history, in which leaders, generals and discoverers shape the course of human events. In this version—the killer app theory—it's the technology that does it. The Liberator is not Simón Bolívar; it's bandwidth.

Moreover, even if we resist the unbridled optimism of utopian thinking—even if we admit, for instance, that we've found plenty of ways to let computers and networks waste our time as well as save it—we can still fall prey to techno-utopianism's more sober and rational-sounding cousin, techno-determinism: the notion that technology is the key factor in social change. Of course, technology has impact. Economists from Adam Smith to Karl Marx to Joseph Schumpeter have acknowledged it. But each of them also knew that this is not the whole story. For technology to be effective, it requires a whole set of supportive organizational, social and economic adjustments. After all technology is a human creation. The great wonder of our times is not what technological artifacts can do or how quickly they have evolved and grown. The greater wonder is the tremendous outpouring of human creativity that has produced such things. The most fundamental changes are the social structures and mind-sets we are adopting, which feed and sustain this outpouring of creativity.

*"The Dinosaurs Are Doomed"*

A related myth is that the age of large corporations is over—that they have outlived their usefulness, their power has been broken, and they will eventually fade away along with other big organizational forms, like Big Government. The classic metaphor is the lumbering dinosaur made obsolete and usurped by small, nimble mammals—the usurpers in this case being small, nimble startup companies.<sup>12</sup>

The death-to-the-dinosaurs fallacy has been fed by diverse streams of thought: the small-is-beautiful movement of the 1960s, the culture of entrepreneurship that emerged in the wake of Silicon Valley and of course the great New Economy hype of the late 1990s, which promoted the notion that any twenty-six-year-old with a good idea could start a company, make a mint and retire by forty. This pipe dream is an old one with deep roots in American culture. From the outset, we have seen ourselves as a nation of entrepreneurs and self-created individuals. We are steeped in the myth of Horatio Alger. Note how the ideal of the self-made person toiling away in the "garage"—from the garage startup to the garage band—permeates our popular culture today. It is as important for a modern enterprise to have been born in a garage as it was for a nineteenth-century presidential candidate to have been born in a log cabin.

But big companies are by no means going away. Microsoft and Intel continue to control much of the so-called information economy, along with Oracle, Cisco, IBM and AOL Time Warner. Big industrial concerns, from General Motors to General Electric, General Dynamics and General Foods, still turn out most of the nation's goods. Our money is managed not by upstarts but by large financial institutions. The resources that power our economy are similarly managed and controlled by giant corporations. Mega-mergers among mega-corporations have if anything accelerated in recent years. A September 2000 cover story in *Business Week* raised the question: "Too Much Corporate Power?" The answer according to most Americans was a resounding yes. According to a *Business Week*/Harris Poll featured in the story, nearly three-quarters (72 percent) of Americans said "business had too much power over many aspects of American life."<sup>13</sup> Nor as far as I can tell, is government being replaced by some newer, smaller form of organization.

The economy, like nature, is a dynamic system. New companies form and help to propel it forward, with some dying out while others carry on to grow quite large themselves, like Microsoft and Intel. An economy composed only of small, short-lived entities would be no more sustainable than an ecosystem composed only of insects. And the mere fact that an organization has existed for a long time or is engaged in a long-standing business does not make it "Old Economy" and therefore obsolescent. The key point is that organizations of *all* sizes and types have distinct roles to play in a creative economy. Small firms, big firms, the federal government, and nonprofit research universities all come into play in interlocking ways

to develop and refine ideas and bring them to market. To borrow a concept from my colleague Ashish Arora, it is this very “division of innovative labor” that has spurred so much of our recent creativity.<sup>14</sup>

#### “Power to the People”

A related myth is the “power to the people” fantasy. This too goes back a long time and achieved wide currency in the 1960s. An increasingly influential view, associated with Daniel Pink, is that of the so-called “free agent.”<sup>15</sup> In this view, more and more workers are becoming independent agents, blissfully hopping from one short-term engagement to the next in pursuit of the top dollar and the hottest projects. Free agents, so the argument goes, are able to break free from the stranglehold of large organizations and take control of their lives. Companies are accepting and helping to promote this state of affairs, since they no longer have to carry as many long-term employees, the result being freedom and prosperity for all.

There is some truth in this view. Creative people are indeed the chief currency of the emerging economic age. And these people tend to be mobile and change jobs frequently. But the upshot is complex. First, it’s certainly not true that all leverage and bargaining power devolves to the free-agent worker—more likely, the balance of power shifts back and forth with supply and demand for particular talents. The free agent assumes more risk and responsibility along with more freedom. While the system looks lovely during good times, these risks and their consequences can be quite dire when the economy turns down. Furthermore, people are complex. Their motivations are many and varied, and not all creative people want to be self-employed or job-hopping free agents. The one consistent quality I detect among creative people is that they seek opportunities to exercise their creativity. If they can find these opportunities by becoming free agents they will do so, and if they can find them by joining a firm and staying with it for a good while, they will do that.

#### “Going Hollywood”

In the view of many evangelists of the new world of work, much of the economy is coming to operate on the same principles as the Hollywood movie industry, with the fundamental shifts reflecting what has happened in Hollywood itself.<sup>16</sup> Hollywood once was ruled by big studios that em-

ployed actors and production crews under long-term contracts, and cranked out movies in assembly-line fashion, much like the factories of the old corporate world. Then in the 1950s the studio system broke down and Hollywood began to run on a more fluid model. Typically, a producer today will sell a group of investors on a script idea, then pull together an ad hoc team of actors, technicians and others to make the film. Once the project is done the team dissolves, and its members re-form in new combinations around other ideas.

Now, so the argument goes, the rest of our economy is emulating Hollywood. Entire business firms are often pulled together on an ad hoc basis—with an independent “producer” (i.e. an entrepreneur) selling investors on a “script idea” (a business plan)—only to dissolve soon after, with the “talent” (skilled professionals) moving on to mobilize around new ventures. In a sense, the Hollywood model is similar to the free-agent approach. As Dan Pink has written, “Large permanent organizations with fixed rosters of individuals are giving way to small flexible networks with ever changing talents.” There is some truth in the Hollywood model. Companies are certainly coming to demand flexibility. And there are some strong similarities between the way Hollywood operates and the workings of high-tech areas like Silicon Valley.

But the Hollywood model suffers from several overblown claims. Clearly large organizations still matter a lot—both in Silicon Valley, where Stanford University was and still is a key hub, and in Hollywood, where corporations like Disney, Sony and Universal play key roles. In some ways a Hollywood-like system may well benefit large organizations—which can attract and shed labor at will—more than it does the majority of the people who work under it. But as the business writer James Surowiecki pointed out in a stinging *New Yorker* critique, the Hollywood model may not always be the most efficient way of doing business. Noting the dreadfully low rates of return at most Hollywood studios, Surowiecki writes: “Without a cadre of in-house performers studios lurch from movie to movie, wasting enormous amounts of time and money assembling the talent for each project. Hollywood needs to look more like a business and less like a crapshoot.”<sup>17</sup> Likewise in high-technology industry, many researchers have noted the high cost of “churn”—the inefficiency, for instance, of constantly having to replace people who leave just after they’ve learned their way around the firm and become truly valuable.<sup>18</sup>

Yet in other senses the Hollywood analogy is, ironically, more potent

than its advocates may realize. It actually applies—is valid, and useful and provocative—in two ways that most people have overlooked. Perhaps the most salient point is the fact that Hollywood is a *place*. Business gets done there because creative people congregate there, network with one another and are readily available. Ditto Silicon Valley or any other booming creative economy center. These places are talent magnets and talent aggregators. Their key economic function is to provide a regional talent pool into which firms can dip as needed, and from which new ideas and firms bubble up. The real economic sense in which we're "going Hollywood" is that places have replaced companies as the key organizing units in our economy. That's why much of my research, and much of the latter part of this book, has been devoted to learning what makes such places work and what makes them more or less attractive to creative people.

The other salient point is that we're also going Hollywood in a social sense. Hollywood is a place where social ties are notoriously tenuous and contingent. Similarly, many Creative Class people I study prefer loose ties, quasi-anonymous communities and shifting networks of social alliance. Does this mean we're turning into a nation of stereotypical Hollywood rats, hugging and kissing our associates before we stab them in the back? I don't believe so. But it's clear that our society is coming to look quite different from that of the past. We need to develop a clearer picture of where the new creative society seems to be taking us—so we can decide if we want to go there.

### Dimensions of Creativity

Creativity is often viewed as a rather mystical affair. Our understanding of it has grown, however, through systematic study over the past few decades. Researchers have observed and analyzed creativity in subjects ranging from eminent scientists and artists to preschoolers and chimpanzees. Occasionally but notably, they have studied its workings across entire human societies. They have pored through the biographies, notebooks and letters of great creators of the past; modeled the creative process by computer; and tried to get computers to *be* creative.<sup>19</sup> From the existing body of literature I will abstract several main themes that surface repeatedly. As we trace these themes and begin to see what creativity really is, we will also begin to get a deeper sense of how and why the creative ethos is emerging in our lives today.

Let's start with a couple of basics. First, creativity is not the same as "intelligence." Says one scholarly review:

Many studies recognize creativity as cognitive ability separate from other mental functions and particularly independent from the complex of abilities grouped under the word intelligence. Although intelligence—the ability to deal with or process large amounts of data—favors creative potential, it is not synonymous with creativity.<sup>20</sup>

Creativity involves the ability to synthesize. Einstein captured it nicely when he called his own work "combinatory play." It is a matter of sifting through data, perceptions and materials to come up with combinations that are *new and useful*. A creative synthesis is useful in such varied ways as producing a practical device, or a theory or insight that can be applied to solve a problem, or a work of art that can be appreciated.<sup>21</sup>

Creativity requires self-assurance and the ability to take risks. In her comprehensive review of the field, *The Creative Mind*, Margaret Boden writes that creativity

involves not only a passionate interest but self-confidence too. A person needs a healthy self-respect to pursue novel ideas, and to make mistakes, despite criticism from others. Self-doubt there may be, but it cannot always win the day. Breaking generally accepted rules, or even stretching them, takes confidence. Continuing to do so, in the face of scepticism and scorn, takes even more.<sup>22</sup>

Small wonder that the creative ethos marks a strong departure from the conformist ethos of the past. Creative work in fact is often downright *subversive*, since it disrupts existing patterns of thought and life. It can feel subversive and unsettling even to the creator. One famous definition of creativity is "the process of destroying one's gestalt in favor of a better one." And to the economist Joseph Schumpeter, the "perennial gale of creative destruction" was the very essence of capitalism:

in capitalist reality as distinguished from its textbook picture, it is not [price] competition which counts but the competition from the new commodity, the new technology, the new source of supply, the new type of organization . . . competition which commands a decisive cost or quality advantage and

which strikes not at the margins of the profits and the outputs of the existing firms but at their foundations and their very lives.<sup>23</sup>

The economic historian Joel Mokyr puts it even more bluntly in the preface to his landmark book *The Lever of Riches*, a sweeping study of technological creativity from classical antiquity through the Industrial Revolution. Drawing upon Schumpeter's famous distinction between the typical "adaptive response" and the disruptive and innovative "creative response," Mokyr writes:

Economists and historians alike realize that there is a deep difference between *homo economicus* and *homo creativus*. One makes the most of what nature permits him to have. The other rebels against nature's dictates. Technological creativity, like all creativity, is an act of rebellion.<sup>24</sup>

Yet creativity is not the province of a few select geniuses who can get away with breaking the mold because they possess superhuman talents. It is a capacity inherent to varying degrees in virtually all people. According to Boden, who sums up a wealth of research: "Creativity draws crucially on our ordinary abilities. Noticing, remembering, seeing, speaking, hearing, understanding language, and recognizing analogies: all these talents of Everyman are important."<sup>25</sup> While the capacity to synthesize vast amounts of information and wrestle with very complex problems can be an advantage, Boden argues, genius can also cut both ways. "These rare individuals, then, can search—and transform—high-level space much larger and complex than those explored by other people. They are in a sense more free than us, for they can generate more possibilities than we can imagine. Yet they respect constraints *more* than we do." Later, she adds:

The romantic myth of "creative genius" rarely helps. Often it is insidiously self-destructive. It can buttress the self-confidence of those individuals who believe themselves to be among the chosen few (perhaps it helped Beethoven to face his many troubles). But it undermines the self-regard of those who do not. Someone who believes that creativity is a rare or special power cannot sensibly hope that perseverance, or education, will enable them to join the creative elite. Either one is already a member, or will never be. Monolithic notions of creativity, talent, or intelligence are discouraging in the same way. Either one has got "it" or one hasn't. Why bother to try if one's efforts can lead only to a slightly less dispiriting level of mediocrity? . . . A very different

attitude is possible for someone who sees creativity as based in ordinary abilities we all share, and in practised expertise to which we can all aspire.<sup>26</sup>

Even though much about the creative process seems strange and elusive, there does appear to be a consistent method underlying it. Many researchers see creative thinking as a four-step process: preparation, incubation, illumination and verification or revision.<sup>27</sup> Preparation is consciously studying a task, and perhaps trying to attack it logically by standard means. Incubation, the "mystical" step, is one in which both the conscious mind and the subconscious mull over the problem in hard-to-define ways. Illumination, the "Eureka!" step, is seeing a new synthesis; and verification and revision include all the work that comes after. Anyone who's done creative work of *any kind* will recognize the steps. Indeed more of us today do precisely this sort of work, and that, for instance, is why so many of us are moving to irregular work schedules: The alternating periods of different kinds of mental activity require it.

Creativity is multidimensional and experiential. The psychologist Dean Keith Simonton, a leading scholar in the field, writes, "creativity is favored by an intellect that has been enriched with diverse experiences and perspectives."<sup>28</sup> It is "associated with a mind that exhibits a variety of interests and knowledge." Thus, the varied forms of creativity that we typically see as different from one another—technological creativity (or invention), economic creativity (entrepreneurship) and artistic and cultural creativity, among others—are in fact deeply interrelated. Not only do they share a common thought process, they reinforce each other through cross-fertilization and mutual stimulation. And so through history practitioners of the different forms of creativity have tended to congregate and feed off one another in teeming, multifaceted creative centers—Florence in the early Renaissance; Vienna in the late 1800s and early 1900s; the many fast-growing creative centers across the United States today.

Stimulating and glamorous as it may sometimes be, creativity is in fact work. Both Thomas Edison (a paragon of technological creativity) and George Bernard Shaw (a cultural creative) liked to say that genius is 90 percent perspiration and 10 percent inspiration.<sup>29</sup> Or as the journalist Red Smith once said of the demands of his craft: "There's nothing to writing. All you do is sit down at the typewriter and open a vein." Here we have an inventor, a playwright and a sportswriter sounding a common theme: The creative ethos is built on discipline and focus, sweat and blood. As Boden observes,

### The Ultimate Source of Creativity

To the economist Paul Romer, not only is creativity inherent in humans, it is literally what distinguishes us, economically, from other species:

We produce goods by rearranging physical objects, but so do other animals, often with remarkable precision. Birds build nests, bees build hives, and we build guns and cars. . . . Where people excel as economic animals is in their ability to produce ideas, not just physical goods. An ant will go through its life without ever coming up with even a slightly different idea about how to gather food. But people are almost incapable of this kind of rote adherence to instruction. We are incurable experimenters and problem solvers.<sup>37</sup>

Indeed it was a “different idea about how to gather food,” the agricultural idea, that launched the beginnings of modern human society, as the next chapter will detail. It was experimenting and problem solving—proceeding in fits and starts over many centuries, then building rapidly since late medieval times—that led to a series of revolutionary scientific discoveries, followed by waves of practical invention. “We are not used to thinking of ideas as economic goods,” writes Romer, “but they are surely the most significant ones that we produce. The only way for us to produce more economic value—and thereby generate economic growth—is to find ever more valuable ways to make use of the objects available to us.”<sup>38</sup>

Romer is a leading proponent of an economic school of thought called *New Growth Theory*, which assigns a central role to creativity or idea generation.<sup>39</sup> He notes that ideas are especially potent “goods” because they are not like other goods, such as mineral deposits and machines, which deplete or wear out with use. A good idea, like the concept of the wheel, “can be used over and over again” and in fact grows in value the more it is used. It offers not diminishing returns, but *increasing returns*. Moreover, an idea can be built upon. As other people apply their own creativity to a new scientific theory or product design, they can tinker with it, improve it and combine it with other ideas in growing proliferations of new forms. This is what has happened in recent centuries. The early 1900s were a time when waves of invention—the accumulated fruits of that creativity—were being harnessed, mass-produced and widely promulgated through society as never before. What we are living through now is the next step. Not just the

fruits or artifacts of the creativity, but human creativity itself is being widely harnessed on a truly massive scale and promulgated as never before.

Today we like to think that we clearly understand creativity as a source of economic value. Many commentators, for instance, trumpet the point that “intellectual property”—useful new knowledge embodied in computer programs, or patents or formulas—has now become more valuable than any kind of physical property. It’s no surprise that we often litigate over intellectual property, and argue about the proper means of protecting it, as fiercely as miners in the California Gold Rush battling over a claim. But as Stanford University law professor Lawrence Lessing has powerfully argued, our pendant for overprotecting and overlitigating intellectual property may well serve to constrain and limit the creative impulse.<sup>40</sup> In the long run, we cannot forget what the fundamental cornerstone of our wealth is. Though useful knowledge may reside in programs or formulas, it does not originate there. It originates with people. The ultimate intellectual property—the one that really replaces land, labor and capital as the most valuable economic resource—is the human creative faculty.

To some degree, Karl Marx had it partly right when he foresaw that workers would someday control the means of production. This is now beginning to happen, although not as Marx thought it would, with the proletariat rising to take over factories. Rather, more workers than ever control the means of production because it is inside their heads; they *are* the means of production. Thus, the ultimate “control” issue is not who owns the patents that may result, nor is it whether the creative worker or the employer holds the balance of power in labor market negotiations. While those battles swing back and forth, the ultimate control issue—the one we have to stay focused on, individually and collectively—is how to keep stoking and tapping the creative furnace inside each human being.

### The Creative Factory

Not just the scientific laboratory but the factory itself can be an arena for creative work. Factory workers, given the chance, often are the ones who come up with basic improvements in productivity and performance.<sup>41</sup> I saw this time and again in my studies of Japanese and U.S. factories. Even in areas such as environmental quality, it was line workers doing little things—like putting in drip pans—who were the key to making factories greener and more productive at the same time.<sup>42</sup> More and more factory

jobs today require creativity as a condition of employment. At Sony's electronics plant outside Pittsburgh, as in many advanced manufacturing plants, even candidates for entry-level assembly jobs must pass a battery of tests screening them for aptitudes such as problem solving and the ability to work in self-directed teams.<sup>43</sup> And increasing numbers of factory workers no longer directly touch the products they make but essentially monitor, control and at times program computers that run the production process.<sup>44</sup> The manager of a fully automated steel mill in the American Midwest summed it up best when he told me, "This is not a traditional factory. It's a living laboratory with bright capable people."<sup>45</sup>

I first came to understand the power of creativity at work not from economic textbooks or from my research, but very early in life, from my father, Louis Florida. Born to Italian immigrant parents in Newark, New Jersey, he quit school at age fourteen to help support his family during the Great Depression. He took a job in a factory that made eyeglass frames. After fighting in the Second World War—he was one of those who stormed the beaches at Normandy—he returned to his previous line of work at a place called Victory Optical. By the early 1960s, when I was a small boy, he had worked his way up from laborer to a supervisory post. On some Saturdays he had to put in a few hours at work, and occasionally he would give in to my pants-tugging pleas to tag along. My eyes ablaze with youthful curiosity, we drove through Newark's sprawling, industrial Ironbound Section, so called because it was latticed with railroad lines, to the giant brick factory. Inside the plant, the energy was incredible. I would race on small legs to keep up with my father as he strode past the banks of machines: the presses, the lathes, the vats of plating solutions and the huge bins with eyeglass frames of all sorts. It was all a hurly-burly kaleidoscope of rapidly moving people, set amid the sounds of whirring machines and foreign-accented English, and the smells of cutting fluids, melted plastic and finely shaved metal chips.

I recall my father working on weekends with his colleague Karl, a German-born machinist, on new designs and layouts for various machines. I remember them discussing the latest machinery available from Italy and Germany and the advanced production systems used by their European competitors. But my father would always remind me that the productive power of the factory lay not in the machines and presses but in the intelligence and creativity of its workers. "Richard," he would say, "the factory does not run itself. It is those incredibly skilled men who are the heart, soul and mind of this factory."

My most vivid lesson on that score occurred when I was a Cub Scout about to enter the Pinewood Derby competition. This was a racing event for small model cars. Each Scout was given the same basic materials to work with: a rectangular block of wood, plastic wheels and metal axles. The instructions were to fashion a car from the materials supplied, and not to add additional weight in excess of five ounces. The cars would race by rolling down a sloped track. The week before my first race, I worked on the car with my father. We basically fastened the wheels to the block of wood, added a coat of paint and showed up. Suffice it to say we were badly beaten. Our primitive clunker came out of the gate down the track and literally fell apart, wheels flying in all directions, as the sleek cars of other Scouts flew by. Those sharp-looking cars fascinated me and I made my father promise to help me build one.

The next year we set to work early designing a streamlined racer. We started talking to the machinists and machine tool designers at Victory Optical, taking the car to the factory on weekends to seek advice. We honed that block of wood into an efficient aerodynamic design. We added a precise amount of lead weight, per the guidelines, to gain additional speed. We fashioned a little test track. In trial runs, the front axle began to crack under the strain of repeated nose-first impacts with the stopping barrier at the bottom. With the help of the skilled machinists, we developed an innovative solution, carving a bit of wood from the rear of the car and gluing it to the nose to protect the axle. We added a metallic paint job, decals, a roll bar and the *pièce de résistance*—a little plastic driver. The finished car looked like a Formula One racer. And with the collective ingenuity of Victory Optical in our corner, we went on to win every Pinewood Derby championship for the remainder of my Cub Scout career, at which point the dynasty passed along to my younger brother's racers. The creativity of the workers in the eyeglass-frame factory was multidimensional: It could be applied to my world, too.

The image of the factory as an arena only for rote physical labor was always wrong. It never gave a complete picture of the economic activity that went on inside. Workers always used their intellect and creative capabilities to get things done. And though they were increasingly stifled for a long period in many industries, factory workers today are coming to be valued more for these capabilities—for their ideas on quality and continuous improvement—than for their ability to perform routine manual tasks. Across the board, in a multitude of jobs, work has taken on a creative component.

### Creativity Versus Organization

Creative people come in many different forms. Some are mercurial and intuitive in their work habits, others methodical. Some prefer to channel their energies into radical big ideas; others are tinkerers and improvers. Some like to move from job to job, whereas others like the security of a large organization. Some are best working in groups; others like nothing better than to be left alone. Moreover, many people don't fall at the extremes—and their work and lifestyle preferences may change as they mature.

What all of these people have in common is a strong desire for organizations and environments that let them be creative—that value their input, challenge them, have mechanisms for mobilizing resources around ideas and are receptive to both small changes and the occasional big idea. Companies and places that can provide this kind of environment, regardless of size, will have an edge in attracting, managing and motivating creative talent. The same companies and places will also tend to enjoy a flow of innovation, reaping competitive advantage in the short run and evolutionary advantage in the long run.

While certain environments promote creativity, others can most certainly kill it. Adam Smith noted this as early as 1776, in *The Wealth of Nations*. In his famous description of the pin factory, Smith praised the division of labor, a concept that allowed pins to be made efficiently by splitting the process into eighteen distinct steps, with each worker or group of workers typically doing only one step. But he also warned that this system—a creative achievement in its own right—had a downside:

The man whose whole life is spent in performing a few simple operations . . . has no occasion to exert his understanding or to exercise his invention. . . . He naturally loses, therefore, the habit of such exertion, and generally becomes as stupid and ignorant as it is possible for a human creature to become. The torpor of his mind renders him, not only incapable of relishing or bearing a part in any rational conversation, but of conceiving any generous, noble, or tender sentiment.<sup>46</sup>

In their insightful book *The Social Life of Information*, John Seely Brown and Paul Duguid describe the inherent tug-of-war between how organizations generate knowledge and creativity, and how they translate those as-

sets into actual products and services.<sup>47</sup> Creativity comes from individuals working in small groups, which Brown and Duguid refer to as “communities of practice.” These communities emphasize exploration and discovery. Each develops distinctive habits, customs, priorities and insights that are the secrets of its creativity and inventiveness. But to link these communities to one another, transfer knowledge, achieve scale and generate growth requires process and structure. Practice without process becomes unmanageable, but process without practice damps out the creativity required for innovation; the two sides exist in perpetual tension. Only the most sophisticated and aware organizations are able to balance these countervailing forces in ways that lead to sustained creativity and long-run growth.

This fundamental tension between organization and creativity, which remains with us today, is reflected in a remarkable dialogue between two of the greatest chroniclers of everyday life in the mid-1900s, William Whyte and Jane Jacobs. Whyte's classic book, *The Organization Man*, published in 1956, documented the stifling effect of organization and bureaucracy on individuality and creativity.<sup>48</sup> A journalist at *Fortune* magazine, Whyte chronicled how big corporations of the time selected and favored the type of person who goes along to get along, rather than those who might go against the grain. The result, he wrote, was “a generation of bureaucrats.” Even research and development, despite growing funds, was becoming bureaucratized: “Money, money everywhere...but not a cent to think.” Whyte's organization man had an average workweek of 50 to 60 hours, was more interested in work than in his spouse and was dependent on the corporation for his very identity. He often lived in prepackaged suburban developments like Park Forest, Illinois, a place Whyte studied exhaustively. The new suburban communities were seen as more progressive and liberating than the old small towns. But as Whyte showed, they came to exert strong pressures of their own for social adaptation and conformity. In Park Forest, as in the corporations for whom many of its upwardly mobile residents worked, the idiosyncratic individual was quickly stigmatized.

Jane Jacobs's monumental work, *The Death and Life of Great American Cities*, published just five years later in 1961, celebrated the creativity and diversity of urban neighborhoods like her own Greenwich Village.<sup>49</sup> Whereas Whyte found conformity and homogeneity, Jacobs's neighborhoods were veritable fountainheads of individuality, difference and social interaction. The miracle of these places, she argued, was found in the hurly-burly life of the street. The street, where many different kinds of

people came together, was both a source of civility and a font for creativity. Since people lived close together in small private spaces, the street provided the venue for a more or less continuous conversation and interaction, kept alive by frequent random collisions of people and ideas. Jacobs documented in painstaking detail how this worked in and around Hudson Street where she lived, a neighborhood of tenement apartments and town houses, bars and shops, and her famed White Horse Tavern, where workers, writers, musicians and intellectuals gathered for relaxation, conversation and the occasional new idea.

What made Hudson Street work was its combination of physical and social environments. It had short blocks that generated the greatest variety in foot traffic. It had a wide diversity of people from virtually every ethnic background and walk of life. It had wide sidewalks and a tremendous variety of types of buildings—apartments, bars, shops, even small factories—which meant that there were always different kinds of people outside and on different schedules. And it had lots of old, underutilized buildings, ideal for individualistic and creative enterprises ranging from artists' studios to entrepreneurial shops. Hudson Street also fostered and attracted a certain type of person—Jacobs's all-important "public characters"—shopkeepers, merchants and neighborhood leaders of various sorts. These people, the antitheses of Whyte's organization men, played a critical role in resource mobilization. Performing a catalytic role in the community, they utilized their position in social networks to connect people and ideas. The creative community, Jacobs argued, required diversity, the appropriate physical environment and a certain kind of person to generate ideas, spur innovation and harness human creativity.

Ironically, but not surprisingly, Jacobs and Whyte were the closest of friends. When asked in March of 2001, on the fortieth anniversary of her classic book, to name her most admired contemporaries she had this to say: "Holly Whyte, William H. Whyte. . . . He was an important person to me and he was somebody whose ideas, yes, were on the same wavelength. And it was through Holly that I met my . . . publisher. . . . I told him what I wanted and he agreed to publish it [*The Death and Life of Great American Cities*] and gave me a contract."<sup>50</sup>

Upon closer examination, this bond is evident in their work. Whyte lamented the rise of organizational society and the alienation, isolation and conformity it carried with it. Jacobs showed the possibility of an alternative, a setting where difference, nonconformity and creativity could thrive. Who at the time could have guessed what history would render?

For much of the past half century, intelligent observers of modern life believed it was Whyte's world that had triumphed. But now it appears that Jacobs's world may well carry the day. Not only are urban neighborhoods similar to Hudson Street reviving across the country, but many of the principles that animated Hudson Street are diffusing through our economy and society. Workplaces, personal lives, entire industries and entire geographic regions are coming to operate on principles of constant, dynamic creative interaction.

a person needs time, and enormous effort, to amass mental structures and to explore their potential. It is not always easy (it was not easy for Beethoven). Even when it is, life has many other attractions. Only a strong commitment to the domain—music, maths, medicine—can prevent someone from dissipating their energies on other things.<sup>30</sup>

Creativity can take a long time—there are many stories of great mathematicians and scientists mulling a problem for months or more, to be finally “illuminated” while stepping onto a bus or staring into a fireplace—and even this apparent magic is the result of long preparation. Thus Louis Pasteur’s famous dictum: “Chance favors only the prepared mind.” Or as Wesley Cohen and Daniel Levinthal have put it in their studies of firm-based innovation: “Fortune favors the prepared firm.”<sup>31</sup>

Moreover, it has been observed that because of the all-absorbing nature of creative work, many great thinkers of the past were people who “formed no close ties”: They had lots of colleagues and acquaintances, but few close friends and often no spouse or children. In fact, muses the psychiatrist Anthony Storr, “if intense periods of concentration over long periods are required to attain fundamental insights, the family man is at a disadvantage.” Quoting the famous bachelor Isaac Newton on his process of discovery—“I keep the subject constantly before me, and wait till the first dawns open slowly by little and little into the full and clear light”—Storr notes that “If Newton had been subject to the demands of a wife for companionship or interrupted by the patter of tiny feet, it would certainly have been less easy for him.”<sup>32</sup>

Creativity is largely driven by intrinsic rewards. Surely some creative people are driven by money, but studies find that truly creative individuals from artists and writers to scientists and open-source software developers are driven primarily by internal motivations. In a study of motivation and reward, Harvard Business School psychologist Teresa Amabile observed, “Intrinsic motivation is conducive to creativity, but extrinsic motivation is detrimental. It appears that when people are primarily motivated to do some creative activity by their own interest and enjoyment of that activity, they may be more creative than when they are primarily motivated by some goal imposed upon them by others.”<sup>33</sup>

Although creativity is often viewed as an individual phenomenon, it is an inescapably social process. It is frequently exercised in creative teams. Even the lone creator relies heavily on contributors and collaborators. Successful creators have often organized themselves and others for system-

atic effort. When Edison opened his laboratory in Menlo Park, New Jersey, he called the lab an “invention factory” and announced his intention to produce “a minor invention every ten days and a big thing every six months or so.”<sup>34</sup> The artist Andy Warhol similarly dubbed his Manhattan studio The Factory, and though Warhol liked to cultivate a public image of bemused indifference, he was a prolific organizer and worker—mobilizing friends and colleagues to publish a magazine and produce films and music, all while pursuing his own art.

Furthermore, creativity flourishes best in a unique kind of social environment: one that is stable enough to allow continuity of effort, yet diverse and broad-minded enough to nourish creativity in all its subversive forms. Simonton finds creativity flourishing in places and times marked by four characteristics: “domain activity, intellectual receptiveness, ethnic diversity, [and] political openness.” In a study of the history of Japanese culture—a culture that has been “highly variable in its openness to outside influences”—Simonton found that “those periods in which Japan was receptive to alien influx were soon followed by periods of augmented creative activity.”<sup>35</sup>

One final cautionary note is in order. Joel Mokyr notes that technological creativity has tended to rise and then fade dramatically at various times in various cultures, when social and economic institutions turn rigid and act against it. Spectacular fade-outs occurred, for instance, in late medieval times in the Islamic world and in China. Both societies, which had been leaders in fields from mathematics to mechanical invention, then proceeded to fall far behind Western Europe economically. When one takes the long view of human history, Mokyr writes, one sees that

technological progress is like a fragile and vulnerable plant, whose flourishing is not only dependent on the appropriate surroundings and climate, but whose life is almost always short. It is highly sensitive to the social and economic environment and can easily be arrested.<sup>36</sup>

Thus a continued outpouring of creativity “cannot and should not be taken for granted,” Mokyr warns—even today. Sustaining it over long periods is not automatic, but requires constant attention to and investment in the economic and social forms that feed the creative impulse. All the more reason to study the institutions of our emerging Creative Age closely, so that we can understand their inner workings and nourish them appropriately.

neers and MBAs to oversee the factory operations. With considerable book knowledge but little experience in the actual workings of the factory—without the intelligence of the men who ran the machines—these new recruits would propose complicated ideas and systems that inevitably failed and, at worst, brought production to a grinding halt. Their ideas not only were ineffective but created growing animosity among the workforce. The bitter standoff between workers and management finally became intolerable. One day in the late 1970s, when I was at college, my father called me on the phone and said, “Today, I quit.”

At the time, I wasn’t quite sure about my father’s story: Could college-educated experts really have ruined the factory? I was a college student, after all, trying to use education to move up the socioeconomic ladder. But within a couple of years, I realized how right he had been. As the workforce grew more demoralized, problems mounted. Skilled people quit. Machinists left in droves. The self-taught foremen and supervisors who had worked their way up from the factory floor quickly followed. Without their storehouse of knowledge and institutional memory, the factory could not operate. Less than three years after my father’s departure, Victory Optical was bankrupt. The huge, vibrant factory that had captivated me in my youth was shuttered, vacant, abandoned. And surely one contributing factor was this great irony. Just when the leading edge of the corporate world had begun moving toward the creative factory concept—the concept that Victory had always been run by—Victory had moved in the opposite direction: back to the past, to the deadly organizational age model that delegated creativity to the men at the top and denied it to the rank and file.

We are now living through another large-scale economic transformation, the creative transformation, the main contours of which I have already outlined. As we have seen, its roots can be traced to the 1940s and 1950s—many of its key systems arose in response to the creative limits of the organizational age—and it came to full bloom in the 1980s and 1990s. During this time we have seen the emergence of new economic systems explicitly designed to foster and harness human creativity, and the emergence of a new social milieu that supports it. And it has given rise to a new dominant class, the topic to which I now turn.

## CHAPTER 4

### *The Creative Class*

The rise of the Creative Economy has had a profound effect on the sorting of people into social groups or classes. Others have speculated over the years on the rise of new classes in the advanced industrial economies. During the 1960s, Peter Drucker and Fritz Machlup described the growing role and importance of the new group of workers they dubbed “knowledge workers.”<sup>1</sup> Writing in the 1970s, Daniel Bell pointed to a new, more meritocratic class structure of scientists, engineers, managers and administrators brought on by the shift from a manufacturing to a “postindustrial” economy. The sociologist Erik Olin Wright has written for decades about the rise of what he called a new “professional-managerial” class.<sup>2</sup> Robert Reich more recently advanced the term “symbolic analysts” to describe the members of the workforce who manipulate ideas and symbols.<sup>3</sup> All of these observers caught economic aspects of the emerging class structure that I describe here.

Others have examined emerging social norms and value systems. Paul Fussell presciently captured many that I now attribute to the Creative Class in his theory of the “X Class.” Near the end of his 1983 book *Class*—after a witty romp through status markers that delineate, say, the upper middle class from “high proles”—Fussell noted the presence of a growing “X” group that seemed to defy existing categories:

[Y]ou are not born an X person . . . you earn X-personhood by a strenuous effort of discovery in which curiosity and originality are indispensable. . . . The young flocking to the cities to devote themselves to “art,” “writing,” “creative work”—anything, virtually, that liberates them from the presence of a boss or superior—are aspirant X people. . . . If, as [C. Wright] Mills has said, the middle-class person is “always somebody’s man,” the X person is nobody’s. . . . X people are independent-minded. . . . They adore the work they do, and they do it until they are finally carried out, “retirement” being a con-

cept meaningful only to hired personnel or wage slaves who despise their work.<sup>4</sup>

Writing in 2000, David Brooks outlined the blending of bohemian and bourgeois values in a new social grouping he dubbed the Bobos. My take on Brooks's synthesis, which will come in Chapter 11, is rather different, stressing the very transcendence of these two categories in a new creative ethos.

The main point I want to make here is that the basis of the Creative Class is economic. I define it as an economic class and argue that its economic function both underpins and informs its members' social, cultural and lifestyle choices. The Creative Class consists of people who add economic value through their creativity. It thus includes a great many knowledge workers, symbolic analysts and professional and technical workers, but emphasizes their true role in the economy. My definition of class emphasizes the way people organize themselves into social groupings and common identities based principally on their economic function. Their social and cultural preferences, consumption and buying habits, and their social identities all flow from this.

I am not talking here about economic class in terms of the ownership of property, capital or the means of production. If we use class in this traditional Marxian sense, we are still talking about a basic structure of capitalists who own and control the means of production, and workers under their employ. But little analytical utility remains in these broad categories of bourgeoisie and proletarian, capitalist and worker. Most members of the Creative Class do not own and control any significant property in the physical sense. Their property—which stems from their creative capacity—is an intangible because it is literally in their heads. And it is increasingly clear from my field research and interviews that while the members of the Creative Class do not yet see themselves as a unique social grouping, they actually share many similar tastes, desires and preferences. This new class may not be as distinct in this regard as the industrial Working Class in its heyday, but it has an emerging coherence.

### The New Class Structure

The distinguishing characteristic of the Creative Class is that its members engage in work whose function is to “create meaningful new forms.” I define the Creative Class as consisting of two components. The Super-

Creative Core of this new class includes scientists and engineers, university professors, poets and novelists, artists, entertainers, actors, designers and architects, as well as the thought leadership of modern society: nonfiction writers, editors, cultural figures, think-tank researchers, analysts and other opinion-makers. Whether they are software programmers or engineers, architects or filmmakers, they fully engage in the creative process. I define the highest order of creative work as producing new forms or designs that are readily transferable and widely useful—such as designing a product that can be widely made, sold and used; coming up with a theorem or strategy that can be applied in many cases; or composing music that can be performed again and again. People at the core of the Creative Class engage in this kind of work regularly; it's what they are paid to do. Along with problem solving, their work may entail problem finding: not just building a better mousetrap, but noticing first that a better mousetrap would be a handy thing to have.

Beyond this core group, the Creative Class also includes “creative professionals” who work in a wide range of knowledge-intensive industries such as high-tech sectors, financial services, the legal and health care professions, and business management. These people engage in creative problem solving, drawing on complex bodies of knowledge to solve specific problems. Doing so typically requires a high degree of formal education and thus a high level of human capital. People who do this kind of work may sometimes come up with methods or products that turn out to be widely useful, but it's not part of the basic job description. What they *are* required to do regularly is think on their own. They apply or combine standard approaches in unique ways to fit the situation, exercise a great deal of judgment, perhaps try something radically new from time to time. Creative Class people such as physicians, lawyers and managers do this kind of work in dealing with the many varied cases they encounter. In the course of their work, they may also be involved in testing and refining new techniques, new treatment protocols, or new management methods and even develop such things themselves. As a person continues to do more of this latter work, perhaps through a career shift or promotion, that person moves up to the Super-Creative Core: producing transferable, widely usable new forms is now their primary function.

Much the same is true of the growing number of technicians and others who apply complex bodies of knowledge to working with physical materials. And they are sufficiently engaged in creative problem solving that I have included a large subset of them in the Creative Class. In an insightful

1996 study, Stephen Barley of Stanford University emphasized the growing importance and influence of this group of workers.<sup>5</sup> In fields such as medicine and scientific research, technicians are taking on increased responsibility to interpret their work and make decisions, blurring the old distinction between white-collar work (done by decisionmakers) and blue-collar work (done by those who follow orders). Barley notes that in medicine, for instance, “emergency medical technicians take action on the basis of diagnoses made at the site,” while sonographers and radiology technicians draw on “knowledge of biological systems, pharmacology, and disease processes to render diagnostically useful information”—all of which encroaches on turf once reserved for the M.D.

Barley also found that in some areas of biomedical work, like the breeding of monoclonal antibodies, labs have had increasing difficulty duplicating each other’s work: They might use the same formulas and well-documented procedures but not get the same results. The reason is that although the lead scientists at the labs might be working from the same theories, the lab technicians are called upon to make myriad interpretations and on-the-spot decisions. And while different technicians might all do these things according to accepted standards, they do them differently. Each is drawing on an arcane knowledge base and exercising his or her own judgment, by individual thought processes so complex and elusive that they could not easily be documented or communicated. Though counterproductive in this case, this individuality happens to be one of the hallmarks of creative work. Lest you think this sort of thing happens only in the rarefied world of the biomedical laboratory, Barley notes a similar phenomenon among technicians who repair and maintain copying machines. They acquire their own arcane bodies of knowledge and develop their own unique ways of doing the job.

As the creative content of other lines of work increases—as the relevant body of knowledge becomes more complex, and people are more valued for their ingenuity in applying it—some now in the Working Class or Service Class may move into the Creative Class and even the Super-Creative Core. Alongside the growth in essentially creative occupations, then, we are also seeing growth in creative content across other occupations. A prime example is the secretary in today’s pared-down offices. In many cases this person not only takes on a host of tasks once performed by a large secretarial staff, but becomes a true office manager—channeling flows of information, devising and setting up new systems, often making key decisions on the fly. This person contributes more than “intelligence”

or computer skills. She or he adds creative value. Everywhere we look, creativity is increasingly valued. Firms and organizations value it for the results that it can produce and individuals value it as a route to self-expression and job satisfaction. Bottom line: As creativity becomes more valued, the Creative Class grows.

Not all workers are on track to join, however. For instance in many lower-end service jobs we find the trend running the opposite way; the jobs continue to be “de-skilled” or “de-creativized.” For a counter worker at a fast-food chain, literally every word and move is dictated by a corporate template: “Welcome to Food Fix, sir, may I take your order? Would you like nachos with that?” This job has been thoroughly taylorized—the worker is given far less latitude for exercising creativity than the waitress at the old, independent neighborhood diner enjoyed. Worse yet, there are many people who do not have jobs, and who are being left behind because they do not have the background and training to be part of this new system.

Growing alongside the Creative Class is another social grouping I call the Service Class—which contains low-end, typically low-wage and low-autonomy occupations in the so-called “service sector” of the economy: food-service workers, janitors and groundskeepers, personal care attendants, secretaries and clerical workers, and security guards and other service occupations. In U.S. Bureau of Labor Statistics projections from the late 1990s and 2000, the fastest-growing job categories included “janitors and cleaners” and “waiters and waitresses” alongside “computer support specialists” and “systems analysts.” The growth of this Service Class is in large measure a response to the demands of the Creative Economy. Members of the Creative Class, because they are well compensated and work long and unpredictable hours, require a growing pool of low-end service workers to take care of them and do their chores. This class has thus been created out of economic necessity because of the way the Creative Economy operates. Some people are temporary members of the Service Class, have high upward mobility and will soon move into the Creative Class—college students working nights or summers as food clerks or office cleaners, and highly educated recent immigrants driving cabs in New York City or Washington, D.C. A few, entrepreneurial ones may be successful enough to open their own restaurants, lawn and garden services and the like. But many others have no way out and are stuck for life in menial jobs as food-service help, janitors, nursing home orderlies, security guards and delivery drivers. At its minimum-wage worst, life in the Service Class is a grueling struggle for existence amid the wealth of others. By going “under-

cover” as a service worker, Barbara Ehrenreich provided a moving chronicle of what life is like for people in these roles in her book *Nickel and Dimed*.<sup>6</sup>

A study of the Austin, Texas, economy sheds light on the growing gaps between the Creative and Service Classes. Austin is a leading center of the Creative Economy and consistently ranks among the top regions on my indicators. A study by Robert Cushing and Musseref Yetim of the University of Texas compared Austin, which in 1999 had a whopping 38 percent of its private-sector workforce in high-tech industries, to other regions in the state. Between 1990 and 1999, average private-sector wages in Austin grew by 65 percent, far and away the most in the state. During that same time, the gap between wages earned by the top fifth and the bottom fifth of the people in Austin grew by 70 percent—also far and away the most in the state. Remove the high-tech sector from the equation and both effects go away. There is a perfectly logical reason for the gap: High-tech specialists were in short supply so their wages were bid up. And in fairness, it should be noted that Austin’s bottom fifth of wage earners weren’t left out entirely. Their income did go up from 1990 to 1999, and more than for their counterparts in other Texas regions. Apparently Austin had a growing need for their services, too. But these trends do more than illustrate a widening income gap. They point to a real divide in terms of what people do with their lives—with the economic positions and lifestyle choices of some people driving and perpetuating the types of choices available to others.<sup>7</sup>

### Counting the Creative Class

It is one thing to provide a compelling description of the changing class composition of society, as writers like Bell, Fussell or Reich have done. But I believe it is also important to calibrate and quantify the magnitude of the change at hand. In 1996, Steven Barley estimated that professional, technical and managerial occupations increased from 10 percent of the workforce in 1900 to 30 percent by 1991, while both blue-collar work and agricultural work fell precipitously.<sup>8</sup> In a 2001 article, the sociologist Steven Brint estimated that the “scientific, professional and knowledge economy” accounted for 36 percent of all U.S. employment in 1996—a human capital-based estimate including industries where at least 5 percent of the workforce has graduate degrees. His definition includes agricultural services, mass media, chemicals, plastics, pharmaceuticals, computers and

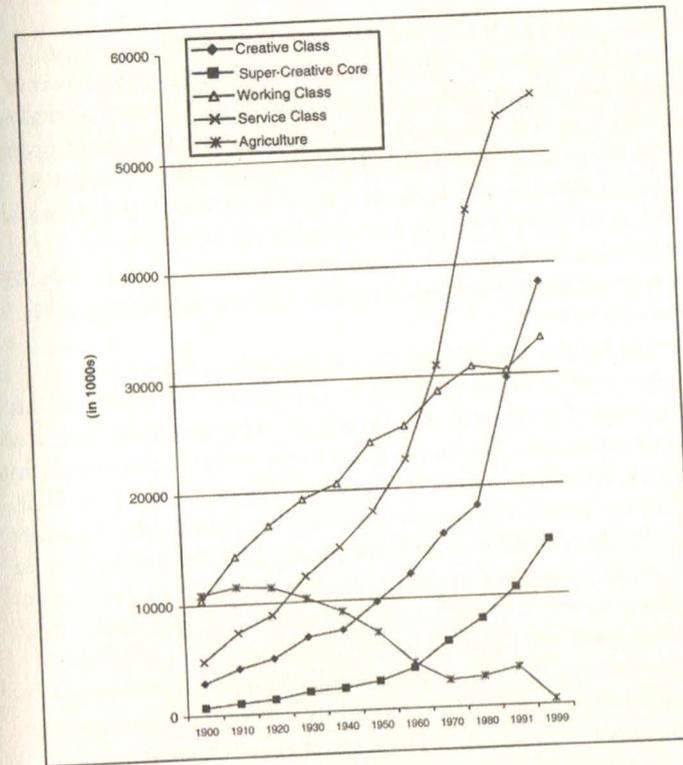


FIGURE 4.1 The Class Structure, 1900–1999

(SOURCE: See Appendix.)

electric equipment, scientific instruments, banking, accounting, consulting and other business services, health services and hospitals, education, legal services and nearly all religious and governmental organizations.<sup>9</sup>

Working with colleagues and graduate students at Carnegie Mellon, I developed a detailed statistical portrait of the rise of the Creative Class and the changing class structure of the United States over the twentieth century (see Figs. 4.1 and 4.2). I believe this definition is an improvement over previous concepts of knowledge workers and the like. I base it on the “standard occupational classifications” collected by the U.S. Census and available in its historical statistics from 1900 to the present. (The Appendix provides a complete explanation of all data and sources.) Let’s take a look at the key trends.

- The *Creative Class* now includes some 38.3 million Americans, roughly 30 percent of the entire U.S. workforce. It has grown from roughly 3 million workers in 1900, an increase of more than tenfold. At the turn of the twentieth century, the Creative Class made up just 10 percent of the workforce, where it hovered until 1950 when it began a slow rise; it held steady around 20 percent in the 1970s and 1980s. Since that time, this new class has virtually exploded, increasing from less than 20 million to its current total, reaching 25 percent of the working population in 1991 before climbing to 30 percent by 1999.
- At the heart of the Creative Class is the *Super-Creative Core*, comprising 15 million workers, or 12 percent of the workforce. It is made up of people who work in science and engineering, computers and mathematics, education, and the arts, design and entertainment, people who work in directly creative activity, as we have seen. Over the past century, this segment rose from less than 1 million workers in 1900 to 2.5 million in 1950 before crossing 10 million in 1991. In doing so, it increased its share of the workforce from 2.5 percent in 1900 to 5 percent in 1960, 8 percent in 1980 and 9 percent in 1990, before reaching 12 percent by 1999.
- The traditional *Working Class* has today 33 million workers, or a quarter of the U.S. workforce. It consists of people in production operations, transportation and materials moving, and repair and maintenance and construction work. The percentage of the workforce in working-class occupations peaked at 40 percent in 1920, where it hovered until 1950, before slipping to 36 percent in 1970, and then declining sharply over the past two decades.
- The *Service Class* includes 55.2 million workers or 43 percent of the U.S. workforce, making it the largest group of all. It includes workers in lower-wage, lower-autonomy service occupations such as health care, food preparation, personal care, clerical work and other lower-end office work. Alongside the decline of the Working Class, the past century has seen a tremendous rise in the Service Class, from 5 million workers in 1900 to its current total of more than ten times that amount.

It's also useful to look at the changing composite picture of the U.S. class structure over the twentieth century. In 1900, there were some 10 million people in the Working Class, compared to 2.9 million in the Cre-

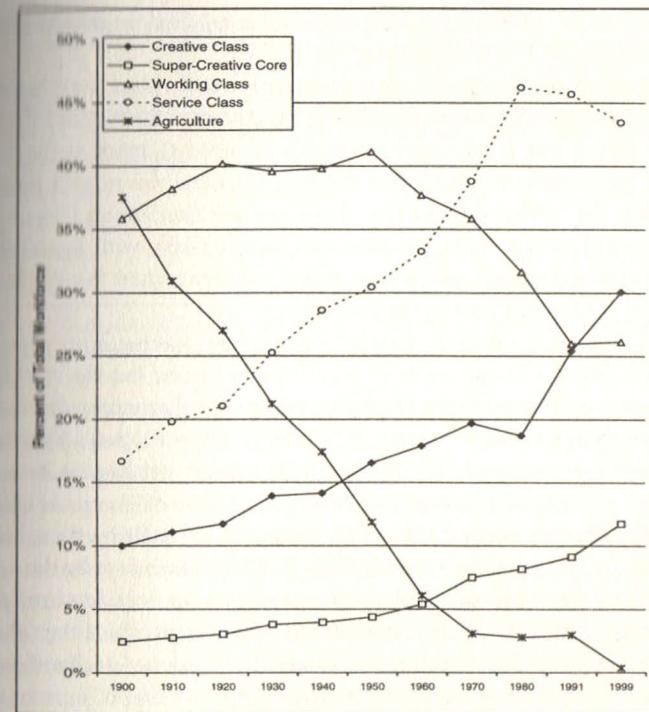


FIGURE 4.2 The Class Structure, 1900–1999 (Percent of Work Force)

(SOURCE: See Appendix.)

ative Class and 4.8 million in the Service Class. The Working Class was thus larger than the two other classes combined. Yet the largest class at that time was agricultural workers, who composed nearly 40 percent of the workforce but whose numbers rapidly declined to just a very small percentage today. In 1920, the Working Class accounted for 40 percent of the workforce, compared to slightly more than 12 percent for the Creative Class and 21 percent for the Service Class.

In 1950, the class structure remained remarkably similar. The Working Class was still in the majority, with 25 million workers, some 40 percent of the workforce, compared to 10 million in the Creative Class (16.5 percent) and 18 million in the Service Class (30 percent). In relative terms, the Working Class was as large as it was in 1920 and bigger than it was in 1900. Though the Creative Class had grown slightly in percentage terms, the

Service Class had grown considerably, taking up much of the slack coming from the steep decline in agriculture.

The tectonic shift in the U.S. class structure has taken place over the past two decades. In 1970, the Service Class pulled ahead of the Working Class, and by 1980 it was much larger (46 versus 32 percent), marking the first time in the twentieth century that the Working Class was not the dominant class. By 1999, both the Creative Class and the Service Class had pulled ahead of the Working Class. The Service Class, with 55 million workers (43.4 percent), was bigger in relative terms than the Working Class had been at any time in the past century.

These changes in American class structure reflect a deeper, more general process of economic and social change. The decline of the old Working Class is part and parcel of the decline of the industrial economy on which it was based, and of the social and demographic patterns upon which that old society was premised. The Working Class no longer has the hand it once did in setting the tone or establishing the values of American life—for that matter neither does the 1950s managerial class. Why, then, have the social functions of the Working Class not been taken over by the new largest class, the Service Class? As we have seen, the Service Class has little clout and its rise in numbers can be understood only alongside the rise of the Creative Class. The Creative Class—and the modern Creative Economy writ large—depends on this ever-larger Service Class to “outsource” functions that were previously provided within the family. The Service Class exists mainly as a supporting infrastructure for the Creative Class and the Creative Economy. The Creative Class also has considerably more economic power. Members earn substantially more than those in other classes. In 1999, the average salary for a member of the Creative Class was nearly \$50,000 (\$48,752) compared to roughly \$28,000 for a Working Class member and \$22,000 for a Service Class worker (see Table 4.1).

I see these trends vividly played out in my own life. I have a nice house with a nice kitchen but it's often mostly a fantasy kitchen—I eat out a lot, with “servants” preparing my food and waiting on me. My house is clean, but I don't clean it, a housekeeper does. I also have a gardener and a pool service; and (when I take a taxi) a chauffeur. I have, in short, just about all the servants of an English lord except that they're not mine full-time and they don't live below stairs; they are part-time and distributed in the local area. Not all of these “servants” are lowly serfs. The person who cuts my hair is a very creative stylist much in demand, and drives a new BMW. The woman who cleans my house is a gem: I trust her not only to clean but to

TABLE 4.1 Wages and Salaries for the Classes

Category	Total Workers	Average Hourly Wage	Average Annual Salary
Creative Class	38,278,110	\$23.44	\$48,752
Super-Creative Core	14,932,420	20.54	42,719
Working Class	33,238,810	13.36	27,799
Service Class	55,293,720	10.61	22,059
Agriculture	463,360	8.65	18,000
Entire US	127,274,000	15.18	31,571

SOURCE: Occupational Employment Statistics (OES) Survey, Bureau of Labor Statistics, Department of Labor, 1999, see Appendix.

rearrange and suggest ideas for redecorating; she takes on these things in an entrepreneurial manner. Her husband drives a Porsche. To some degree, these members of the Service Class have adopted many of the functions along with the tastes and values of the Creative Class, with which they see themselves sharing much in common. Both my hairdresser and my housekeeper have taken up their lines of work to get away from the regimentation of large organizations; both of them relish creative pursuits. Service Class people such as these are close to the mainstream of the Creative Economy and prime candidates for reclassification.

### Creative Class Values

The rise of the Creative Class is reflected in powerful and significant shifts in values, norms and attitudes. Although these changes are still in process and certainly not fully played out, a number of key trends have been discerned by researchers who study values, and I have seen them displayed in my field research across the United States. Not all of these attitudes break with the past: Some represent a melding of traditional values and newer ones. They are also values that have long been associated with more highly educated and creative people. On the basis of my own interviews and focus groups, along with a close reading of statistical surveys conducted by others, I cluster these values along three basic lines.

**Individuality.** The members of the Creative Class exhibit a strong preference for individuality and self-statement. They do not want to conform to organizational or institutional directives and resist traditional group-oriented norms. This has always been the case among creative people from

“quirky” artists to “eccentric” scientists. But it has now become far more pervasive. In this sense, the increasing nonconformity to organizational norms may represent a new mainstream value. Members of the Creative Class endeavor to create individualistic identities that reflect their creativity. This can entail a mixing of multiple creative identities.

*Meritocracy.* Merit is very strongly valued by the Creative Class, a quality shared with Whyte’s class of organization men. The Creative Class favors hard work, challenge and stimulation. Its members have a propensity for goal-setting and achievement. They want to get ahead because they are good at what they do.

Creative Class people no longer define themselves mainly by the amount of money they make or their position in a financially delineated status order. While money may be looked upon as a marker of achievement, it is not the whole story. In interviews and focus groups, I consistently come across people valiantly trying to defy an economic class into which they were born. This is particularly true of the young descendants of the truly wealthy—the capitalist class—who frequently describe themselves as just “ordinary” creative people working on music, film or intellectual endeavors of one sort or another. Having absorbed the Creative Class value of merit, they no longer find true status in their wealth and thus try to downplay it.

There are many reasons for the emphasis on merit. Creative Class people are ambitious and want to move up based on their abilities and effort. Creative people have always been motivated by the respect of their peers. The companies that employ them are often under tremendous competitive pressure and thus cannot afford much dead wood on staff: Everyone has to contribute. The pressure is more intense than ever to hire the best people regardless of race, creed, sexual preference or other factors.

But meritocracy also has its dark side. Qualities that confer merit, such as technical knowledge and mental discipline, are socially acquired and cultivated. Yet those who have these qualities may easily start thinking they were born with them, or acquired them all on their own, or that others just “don’t have it.” By papering over the causes of cultural and educational advantage, meritocracy may subtly perpetuate the very prejudices it claims to renounce. On the bright side, of course, meritocracy ties into a host of values and beliefs we’d all agree are positive—from faith that virtue will be rewarded, to valuing self-determination and mistrusting rigid caste systems. Researchers have found such values to be on the rise,

not only among the Creative Class in the United States, but throughout our society and other societies.

*Diversity and Openness.* Diversity has become a politically charged buzzword. To some it is an ideal and rallying cry, to others a Trojan-horse concept that has brought us affirmative action and other liberal abominations. The Creative Class people I study use the word a lot, but not to press any political hot buttons. Diversity is simply something they value in all its manifestations. This is spoken of so often, and so matter-of-factly, that I take it to be a fundamental marker of Creative Class values. As my focus groups and interviews reveal, members of this class strongly favor organizations and environments in which they feel that anyone can fit in and can get ahead.

Diversity of peoples is favored first of all out of self-interest. Diversity can be a signal of meritocratic norms at work. Talented people defy classification based on race, ethnicity, gender, sexual preference or appearance. One indicator of this preference for diversity is reflected in the fact that Creative Class people tell me that at job interviews they like to ask if the company offers same-sex partner benefits, even when they are not themselves gay. What they’re seeking is an environment open to differences. Many highly creative people, regardless of ethnic background or sexual orientation, grew up feeling like outsiders, different in some way from most of their schoolmates. They may have odd personal habits or extreme styles of dress. Also, Creative Class people are mobile and tend to move around to different parts of the country; they may not be “natives” of the place they live even if they are American-born. When they are sizing up a new company and community, acceptance of diversity and of gays in particular is a sign that reads “nonstandard people welcome here.” It also registers itself in changed behaviors and organizational policies. For example, in some Creative Class centers like Silicon Valley and Austin, the traditional office Christmas party is giving way to more secular, inclusive celebrations. The big event at many firms is now the Halloween party: Just about anyone can relate to a holiday that involves dressing up in costume.

While the Creative Class favors openness and diversity, to some degree it is a diversity of elites, limited to highly educated, creative people. Even though the rise of the Creative Class has opened up new avenues of advancement for women and members of ethnic minorities, its existence has certainly failed to put an end to long-standing divisions of race and gender. Within high-tech industries in particular these divisions still seem to

hold. The world of high-tech creativity doesn't include many African-Americans. Several of my interviewees noted that a typical high-tech company "looks like the United Nations minus the black faces." This is unfortunate but not surprising. For several reasons, U.S. blacks are underrepresented in many professions, and this may be compounded today by the so-called digital divide—black families in the United States tend to be poorer than average, and thus their children are less likely to have access to computers. My own research shows a negative statistical correlation between concentrations of high-tech firms in a region and nonwhites as a percentage of the population, which is particularly disturbing in light of my other findings on the positive relationship between high-tech and other kinds of diversity—from foreign-born people to gays.

There are intriguing challenges to the kind of diversity that the members of the Creative Class are drawn to. Speaking of a small software company that had the usual assortment of Indian, Chinese, Arabic and other employees, an Indian technology professional said: "That's not diversity! They're all software engineers." Yet despite the holes in the picture, distinctive value changes are indeed afoot, as other researchers have clearly found.

### The Post-Scarcity Effect

Ronald Inglehart, a political science professor at the University of Michigan, has documented the powerful shift in values and attitudes across the world in more than two decades of careful research. In three periods over the past twenty years, researchers participating in Inglehart's World Values Survey administered detailed questionnaires to random samples of adults in countries around the world.<sup>10</sup> By 1995–1998, the last survey period, the number of nations studied had grown to sixty-five, including about 75 percent of the world's population. Along with specific issues like divorce, abortion and suicide, the survey delved into matters such as deference to authority versus deciding for oneself, openness versus insularity (can strangers be trusted?), and what, ultimately, is important in life. Inglehart and his colleagues have sifted the resulting data to look for internal correlations (which kinds of values tend to go together) and for correlations with economic and social factors such as a nation's level of economic development, form of government and religious heritage. The researchers compared nations to one another, mapping out various similarities and differences—and they also looked for changes over time.

Among other things, Inglehart found a worldwide shift from economic growth issues to lifestyle values, which he sometimes refers to as a shift from "survival" to "self-expression" values. Moreover where lifestyle issues are rising or dominant, as in the United States and most European societies, people tend to be relatively tolerant of other groups and in favor of gender equality. This is very much in line with Creative Class values. In everything from sexual norms and gender roles to environmental values, Inglehart finds a continued movement away from traditional norms to more progressive ones. Furthermore, as economies grow, living standards improve and people grow less attached to large institutions, they become more open and tolerant in their views on personal relationships. Inglehart believes this new value system reflects a "shift in what people want out of life, transforming basic norms governing politics, work, religion, family and sexual behavior."

In their 2000 book *The Cultural Creatives*, sociologist Paul H. Ray and psychologist Ruth Anderson report similar conclusions. They estimate that some 50 million Americans fall into the category of cultural creatives, having neither "traditional" nor conventionally "modern" values. These people tend to be socially active on issues that concern them, pro-environment and in favor of gender equality. Many are spiritually oriented, though rejecting mainstream religious beliefs. Members of this group are more likely than others to be interested in personal development and relationships, have eclectic tastes, enjoy "foreign and exotic" experiences, and identify themselves as being "not financially materialistic."<sup>11</sup> In short, these cultural creatives have values that Inglehart refers to as "postmaterialist."

This shift in values and attitudes, Inglehart argues, is driven by changes in our material conditions. In agricultural societies and even for much of the industrial age, people basically lived under conditions of scarcity. We had to work simply to survive. The rise of an affluent or "post-scarcity" economy means that we no longer have to devote all our energies just to staying alive, but have the wealth, time and ability to enjoy other aspects of life. This in turn affords us choices we did not have before. "Precisely because they attained high levels of economic security," writes Inglehart, "the Western societies that were the first to industrialize have gradually come to emphasize post-materialist values, giving higher priority to the quality of life than to economic growth. In this respect, the rise of post-materialist values reverses the rise of the Protestant ethic."<sup>12</sup> The overriding trend appears to be

an intergenerational shift from emphasis on economic and physical security toward increasing emphasis on self-expression, subjective well-being, and quality of life. . . . This cultural shift is found throughout advanced industrial societies; it seems to emerge among birth cohorts that have grown up under conditions in which survival is taken for granted.<sup>13</sup>

The Nobel Prize-winning economist Robert Fogel concurs: "Today, people are increasingly concerned with what life is all about. That was not true for the ordinary individual in 1885 when nearly the whole day was devoted to earning the food, clothing, and shelter needed to sustain life."<sup>14</sup> Even though many conservative commentators bemoan these shifts as hedonistic, narcissistic and damaging to society, the Creative Class is anything but radical or nonconformist. On the one hand, its members have taken what looked to be alternative values and made them mainstream. On the other, many of these values—such as the commitment to meritocracy and to hard work—are quite traditional and system-reinforcing. In my interviews, members of the Creative Class resist characterization as alternative or bohemian. These labels suggest being outside or even against the prevailing culture, and they insist they are part of the culture, working and living inside it. In this regard, the Creative Class has made certain symbols of nonconformity acceptable—even conformist. It is in this sense that they represent not an alternative group but a new and increasingly norm-setting mainstream of society.

Perhaps we are indeed witnessing the rise of what Mokyr calls *homo creativus*. We live differently and pursue new lifestyles because we see ourselves as a new kind of person. We are more tolerant and more liberal both because our material conditions allow it and because the new Creative Age tells us to be so. A new social class, in short, has risen to a position of dominance in the last two decades, and this shift has fundamentally transformed our economy and society—and continues to do so. The rest of this book will look at how these changes in our economy and society, in the class structure and in our values and identity are playing themselves out in the way we work and live in this new age.

## PART TWO

# Work