

from socialists in Europe and America—people like Charles Fourier and Karl Marx, Robert Owen and Henry George—who proclaimed an irreconcilable conflict between capital and labor, these writers were also describing, perhaps inadvertently, the world that the office world was giving harbor to: one where workers were in harmony with their employers. To be sure, the office, from its earliest days, was rich in antagonisms, petty grievances, and outright hostility. But in the mind of the typical office worker, there never appeared to be a contradiction in pursuing his own interests alongside those of his employer. The Civil War would puncture the national harmony engendered in American workplaces—especially the southern cotton fields that were the most unequal workplaces of all. But the office, which grew to prominence in the years that followed, expanding to rows upon rows of desks and engulfing American cities in skyscrapers, admitted little of the strife clamoring outside its walls. With reformers promising a utopia of one kind, the office promised another, which would prove more enduring: an endless, placid shaking of hands.

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## THE BIRTH OF THE OFFICE

*In every city, town, and farmhouse, were myriads of new types,—or type-writers,—telephone and telegraph girls, shop clerks . . . running into millions on millions, and, as classes, unknown to themselves as to historians.*

—HENRY ADAMS, *The Education of Henry Adams* (1907)<sup>1</sup>

Imagine a bookkeeper pausing to look down at his ledger in 1860, only to look back up in 1920. He might be surprised to see that his familiar small surroundings had melted away entirely, converted into a space whose high ceilings and tall columns resembled nothing so much as a cave swollen with stalactites. His lone colleague and brother-in-arms, the clerk, was gone, replaced by dozens of unfamiliar faces surrounding him in neat serried rows of desks. The cigar-chomping partner at the nearby rolltop desk would be gone too, having multiplied into a small squadron of bosses locked away in snug executive suites high up in the stratosphere.

His work is now harried, insistent, relentless. Farewell the tranquil, languorous days of the countinghouse; greetings to the factory-like labor of the office. The texture of time has grown rougher, tighter—a moment as difficult to pinpoint as it is decisive. Men with stopwatches record the motions of his pencil, his filing habits, when and whether he goes to the bathroom, how long he lingers at the

the old office is sliced through with the high-pitched metal clack of the typewriter, the adding machine, the sliding and slamming of file cabinets. He clocks in and out; shrill bells ring in his workday and push him out squinting into the early evening darkness, shoved and jostled by the black-coated thousands following him, out of his office, in an endless, dark stream.

Between 1860 and 1920, business became big business, and the number and kinds of positions in the office ballooned. The change in the work environment reflected a change in work itself. Administration and bureaucracy had taken over the world of business. *Walden* was a powerful protest against the tedium of pointless labor in the antebellum era, but its quiet, sturdy apertus were rendered inaudible by the clang of a new, aggressive industriousness. The postbellum era gave figures like Thoreau one riposte after another; the new tone of the world of work was sounded by one of the best-selling pamphlets of the 1880s, *Blessed Be Drudgery*, written by the Christian evangelist William Gannett. Rather than preaching the importance of the contemplative life against the evils of a new, greedy age, as one might have expected from a religious man, Gannett created an improbable—and improbably intoxicating—reconciliation. He acknowledged the awfulness of work, the way it intervened between ourselves and our ideals—he noted how one might “crave an outdoor life” and yet still have to “walk down town of mornings to perch on a high stool [in an office] till supper-time.”<sup>2</sup> But our desire for culture and leisure, Gannett argued, could only be guaranteed by “our own plod, our plod in the rut, our drill of habit.” “In one word,” he said, it “depends upon our ‘drudgery.’”<sup>3</sup> *Drudgery* wasn’t antithetical to culture; on the contrary, drudgery was the source of all culture. The argument reversed the entire history of Western thought since the Bible, which held that labor was the curse of man since the expulsion from paradise. Work was not a burden; it was freedom—the road back to paradise.

The place that was supposed to guarantee this freedom most was the office. In a series of tremendously popular novels, Horatio Alger Jr., the greatest ideologue of self-reliance since Emerson, depicted again and again the improbable rise of a street urchin to white-collar respectability. Not just statistics but much personal

and anecdotal evidence suggested this sort of trajectory wasn’t very likely; even Alger’s own protagonists always depended on the sudden intervention of a wealthy patron. Despite that, a “Horatio Alger story” became shorthand for ascending from the bottom of the heap to the top. The belief that little lay in a poor urchin’s way not only took root; it persisted and grew. “Why should he not rise to a position of importance like the men whom he had heard of and seen, whose beginning had been as humble as his own?” one of the eponymous heroes of *Rough and Ready; or, Life Among the New York Newsboys* wonders.<sup>4</sup> The sentiment had once captured thousands; by 1920, it held millions.

In 1889, inspired by Alger’s books, the board game company Parker Brothers (which would eventually become famous for Monopoly) created a fantasy for children called Office Boy. Cleverly fashioned as a spiraling series of honeycomb cells representing way stations of the office boy’s progress, the simple dice-based game showed how, with patience and fortitude, a young office minion could rise to the top of his company. Starting as “office boy” and moving through “porter” and “stock boy,” the steadfast office worker, as long as he steered clear of the cells marked “careless,” “inattentive,” and “dishonest” and landed instead on the classic bourgeois virtues—“capable,” “earnest,” and “ambitious”—might eventually reach the center of the board, and become “Head of the Firm.”

Yet these were old fantasies—powerful and apparently indelible, given their staying power—which had little application to the world of the office at the turn of the century. Their persistence helped workers cope with, rather than understand, the changes of the world around them. For whatever heroic, quixotic air still attended the cheery countinghouse and dandyish dry goods clerks, sequestered in unmarked little rooms along quaintly narrow urban streets, had dissipated by 1900. No longer earthbound, they worked by the hundreds in office buildings numberless to man, which spun upward from the ground, flouted the horizon, and cut jaggedly into the skyline. Church spires were humbled by the gargoyles and finials crowning the new office buildings, which, hundreds of feet high, appeared from the pavement like masters of their cold stratosphere, as much affronts to nature and scale as testaments to human power

and inventiveness. The wide, free shop floors of the steel mills that circled Ohio and Pennsylvania, Youngstown and Pittsburgh, were rivaled by row after row of typists machine-gunning pages high above them in New York and Chicago—indeed, so much American steel was going into *building* these office towers, from which a steel executive might direct his empire of industry. In this historic ferment, untold millions who might otherwise have been small entrepreneurs steadily became employees of newly enormous corporations, in which only a few could ascend. But in the discourse of office work, the potential for upward mobility and respectability was ritually affirmed. This dissonance between the perceived potential of the office and its actual nature would remain unresolved. It challenged, and was fundamental to, the idea of white-collar work as middle class.

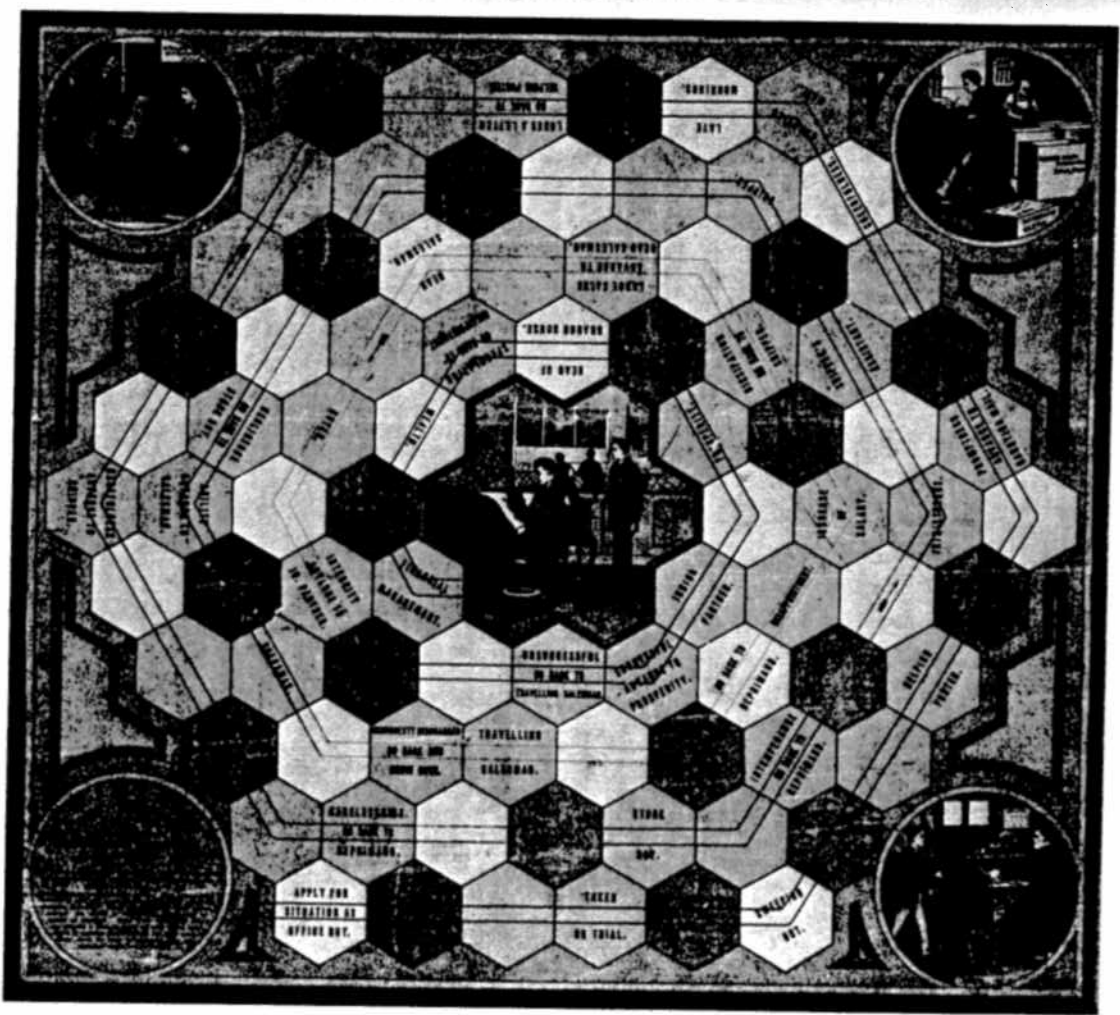
Enormous technological advances aided the growth of offices. By 1860, iron frames permitted the construction of taller buildings; by 1870, elevators assisted the climb. The Remington typewriter entered the office in 1874; Bell's telephone was patented two years later; Morse telegraphs had been in use for several years earlier.<sup>5</sup>

In 1860, the census recorded the existence of 750,000 people engaged in "professional service" work; by 1890, this number had more than doubled to 2,160,000; twenty years later, the census registered the same leap: by 1910 there were 4,420,000 office workers in America.<sup>6</sup> And—most startling of all, for the observers who lived through it—nearly half of them were women.<sup>7</sup>

What had befallen America that it suddenly needed so many offices?



The small world of the countinghouse had corresponded to the small, disconnected world of the United States, which had innumerable towns but was mostly made up of a patchwork of farms. But



by the late nineteenth century, a burgeoning system of railroads had scythed through this pastoral landscape. The Pennsylvania Railroad; Michigan Central; Union Pacific; Chicago, Burlington & Quincy—these names overlaid an entirely new geography of the American imagination. The railroads lowered transportation costs, expanded markets and therefore the cost of goods and products. Telegraphs and telegraph companies had made instant communication across hitherto unfathomable masses of land possible for the first time. By connecting the eastern and western halves of the continent, they had—in one colossal, world-bestrident stroke—annihilated the old concepts of space and time.

In the analysis of Alfred Chandler, the railroads precipitated an organizational change which proved as consequential as the technological revolution that had powered the trains. To coordinate a network of trains required managers who could control the activities of disparate units, who would have to be housed in their own structures across the country. Partnerships that were adequate to managing shipping, a plantation, or a textile mill couldn't handle a railroad. Even the speculators and capitalists whose names otherwise fill the headlines and polemics of the period did little to change the form of companies; instead, it was a new stratum of managers, who began to occupy the "middle" between workers and the top executives, that determined the changes in organizational form—which in turn formed the core of the offices that would soon dominate the American landscape.<sup>8</sup>

The railroads adopted a seemingly simple but in fact pathbreaking organizational form, based on the division of a company into departments. At the top, a board of directors held sway; under them lay the president. But beneath him, the chart of responsibilities begins to spread, in the classic M-form. Finance, freight, and construction were divided, and these in turn split into separate divisions with managers helming various departments—purchasing, machinery, accounting—spread across the various regional offices that coordinated the activities throughout the country. The state had a significant role to play in the organizing of American life: the legal fiction of the "corporation" famously made the ownership of a firm separate from its management. Gone were the multifarious respon-

sibilities that attended clerks and partners; in their place came career managers, who spent years ascending a now highly articulated ladder, themselves hiring and directing employees picked to ascend the very same ladder. (In fact, the use of the word "ladder" to indicate the levels of a company came into use around this time.)

The change between the latter years of the cozy world of "Bartheby" and the vast, cavernous halls of the new office can be seen in the career of a single person. Like Edward Taiter, E. P. Ripley got a job working as a dry goods clerk in Boston immediately after high school, at age seventeen. Four years later, in 1866, he joined the Union Railroad as a contracting agent in its Boston office. In 1870 he was hired by a different railroad, Chicago, Burlington & Quincy, as general freight agent in its Chicago office: in Chicago he became traffic manager. The next year he became general manager and helped to crush the railroad strike of 1888. In 1890, he became a vice president of yet another railroad company, rising to the presidency of the Santa Fe Railway in 1896, at age fifty-one. In the place of two positions—clerk and partner—there were now seven. And this picture doesn't even indicate how much clerks had become differentiated: file clerks, shipping clerks, billing clerks, among other "semiskilled" laborers (as the census classification had it). Many other railroad executives followed similar trajectories—even if most dry goods clerks didn't become railroad executives.<sup>9</sup>

In fact, as companies expanded, it became less and less likely that clerks would "apprentice" themselves in anything like the manner that their forebears did. The specialization of clerical work meant that most workers only knew one thing—be it accounting or filing or billing—and had little incentive or opportunity to learn the entire business. The bottom of a vast and impersonal machinery, the clerk who entered the world of business as E. P. Ripley had was more likely to have seen his intimate world dismantled and reapportioned among hundreds of desks.

What the trains had also destroyed were the old merchants' networks that had sustained the small partnerships of the counting-houses. Merchants had depended upon their special knowledge of isolated regions and markets, which, when opened by quick access to other regions and markets with rail access, lost their relevance

and therefore their dependence on merchant oligarchies. Depression hit the United States, first in the 1870s, and then once again in the 1890s; this prompted manufacturers to consolidate, and to integrate vertically, in order to lower prices.<sup>10</sup> The only way to keep earning money in this new system of competition—what really felt, in the Gilded Age, like open warfare—was to merge. A wave of mergers swept through business in the 1890s, consolidating industries in steel, oil, tobacco, food, and meatpacking. Between 1897 and 1904 alone more than 4,000 firms collapsed into 257 combinations, trusts, and corporations.<sup>11</sup>

The invention of telecommunications allowed offices to be separated from factories and warehouses and in turn expanded the range of jobs available to office workers. Consider a mail-order company and its warehouse. Bosses and errand boys no longer had to conduct transactions in person; aside from the occasional messenger, it was now possible to send and receive information from your warehouse, or factory, or printing house, using Morse code or by picking up the phone. Within the office itself, the use of pneumatic tubes made it possible to run material between levels of a company, while Dictaphones, which could carry a smoke- and bourbon-ragged voice from a snug top-floor executive suite down to a harried typist marooned in the steno pool, made transcription rational and smoothly impersonal. Paradoxically, this new capacity to communicate speedily and efficiently resulted in more and more work for workers to push through—more physical products, but also more paperwork (invoices, receipts, contracts, memos, profit-and-loss statements), which meant more typewriters, which meant more typists, which in turn meant more messages and therefore more messengers.

Things that were heralded as “laborsaving” devices gave rise to a whole new industry, and to more labor. As the great theorist of technology Marshall McLuhan put it in *Understanding Media*, “It was the telephone, paradoxically, that sped the commercial adoption of the typewriter. The phrase ‘Send me a memo on that,’ repeated into millions of phones daily, helped to create the huge expansion of the typist function.”<sup>12</sup> In Sinclair Lewis’s office novel *The Job* (1917), his protagonist, Una Golden, suffers a sublime kind of dread when she confronts the expanse of supposedly laborsaving machines:

“machines for opening letters and sealing them, automatic typewriters, dictation phonographs, pneumatic chutes.” But she’s surprised to discover that “the girls worked just as hard and long and hopelessly after their introduction as before; and she suspected that there was something wrong with a social system in which time-saving devices didn’t save time for anybody but the owners.”<sup>13</sup>

Less heralded than the typewriter and the telegraph, though no less consequential, was the invention of the vertical file cabinet. Though filing, as in organizing company papers, was as old as the office itself, file cabinets only began to appear in the 1880s. Initially, these were wooden and wardrobe-like, with drawers that stored boxes or held loose papers with a metal clamp. Before that, files were stored in pigeonholes in a clerk’s desk, making them largely inaccessible. Incredible as it seems now, it took many years until the notion of storing papers flat—first horizontally and then on edge—became widely accepted. Once it became apparent that the immense volume of internal correspondence could be stored more easily in a vertical file, the system became ubiquitous.<sup>14</sup> As office buildings grew taller, and flammability became a problem, steel file cabinets replaced wooden ones—the tall cabinets mimicking the shape of the skyscraper, such that the “file” seemed to be a metaphorical stand-in for the office itself. “Each office within the skyscraper,” C. Wright Mills would argue some years later, “is a segment of the enormous file, a part of the symbolic factory that produces the billion slips of paper that gear modern society into its daily shape.”<sup>15</sup> Aldous Huxley, in his dystopian novel *Brave New World*, could imagine no more powerful symbol of a totally bureaucratized world than the idea of each person having his or her name on a file:

No longer anonymous, but named, identified, the procession [of test tubes] marched slowly on; on through an opening in the wall, slowly on into the Social Predestination Room.

“Eighty-eight cubic metres of card-index,” said Mr. Foster with relish, as they entered. . . .

“Brought up to date every morning,” added the Director [of hatches].

“And co-ordinated every afternoon”<sup>16</sup>



A more subtle requirement that changed the form of the office, however, was the new need to design spaces that could distinguish between the now-multiple levels of management. The informal, easy consensus of the countinghouse had meant that a clerk could sit just a few feet away from his partner, who might have only bettered his clerk in visible prestige because his desk was of marginally better quality. But the proliferation of senior managers and vice presidents suddenly meant that power relationships were at once plainly hierarchical and confusingly similar. How much separated a manager from a senior manager, besides a few hundred dollars in their salaries? The office, ever more refined in its distribution of status rewards, would make the difference plain as daylight—giving desks to some and private spaces to others; mass-produced metal chairs competed with the chocolate richness of hand-carved mahogany; even the quality of carpeting or the finish on a table leg could distinguish one kind of worker from another.

The most obvious difference lay in the clerical desk. The classic desk of the old countinghouse was the Wooton—a massive, high-backed, grandiose affair riddled with cubbyholes and with foldout wings that seemed to reach around and clasp the sitter in warm embrace. This was a desk you could burrow into, a desk you could lose yourself in—one that truly signified a home. And at the end of the day, you could shut it up and lock it closed. All your papers would be waiting there expectantly for you the next morning.

But once the clerk was no longer the omniscient handyman of the office, relegated instead to the wide expanse of the floor, it seemed a touch expensive to give him such a fancy desk. The executives who essentially did no work—or hardly any paperwork, anyway—got to keep the wood-trimmed Second Empire furniture, while the clerks were handed the Modern Efficiency Desk. Invented in 1915 by the Steelcase Corporation (then called the Metal Office Furniture Company), it was a flat metal table, occasionally outfitted with file drawers. The key was that it gave clerks and their papers nowhere to hide. The new class of managers loved it: as they passed slowly and ominously down the long aisles it was easy to watch what clerks were doing.

The expansion in the range and scope of the office, in the specialization and refinement of its activities, happened so quickly, netting so many new workers eager to get in on the managerial binge, that at a certain point a problem became obvious and ineluctable. The problem was people didn't know what to do with offices. "The old slipshod way of our forefathers," as one writer in the 1890s had it, prevailed in office design; in other words, there was no design at all.<sup>17</sup>

By the turn of the century, the question had acquired a particular urgency. Institutions, both public and private, were considered by many to be seriously out of control. It started on the shop floor. Factories were not running at their best: rising labor strife was leading to frequent equipment sabotage, walkouts, and massive strikes; even on a daily level, managers complained, workers tended to malingering and dawdle, deliberately slowing down operations, a practice that became known as soldiering. A common feature of any workplace, workers especially liked to deploy it when managers would red-facedly scream for more speed.

Not that management had any idea what it was doing either. The adoption of organizational hierarchies hadn't always resulted in greater efficiency, as Chandler had argued; companies often merged out of expediency, and they imitated organizational forms that weren't always appropriate. The size of organizations had gotten so unwieldy that it wasn't clear who was responsible for what. Before World War I, General Motors had tons of disparate factories and distribution facilities, but it hadn't diversified its management properly; a single executive, William C. Durant, made virtually all the decisions. In an example of his infinite wisdom, he had decided that since automobiles were a growth industry, there was no need for cash reserves. When a downturn hit the economy in 1910, the company nearly went bankrupt. Meanwhile, Standard Oil had tons of cash but didn't know what to do with it, because the company didn't know how much it had. It hadn't standardized its accounting practices over its long existence; none of the books matched up. The American states, too, had lost track of themselves. One California legislator described his state's finances (apparently a problem since time immemorial) in 1909: "There was little short of chaos as far

as any orderly provisions for state expenditures were concerned. There had been no audit of the state finances for over twenty years. The finance committees of the two houses were scenes of a blind scramble on the part of the various institutions and departments of the state in an endeavor to secure as large a portion as possible of whatever money might happen to be in the treasury . . . Logrolling and trading of votes on appropriation bills was the common practice among members of the legislature."<sup>18</sup>

It didn't help that the offices where everything was done were, by and large, dismal. One worker in 1894 asked readers to descend with him into the depths:

Imagine a room with its floor some steps below the level of the sidewalk; a small and dusty room, ill-lighted by an abortive skylight, and two windows upon one side; worse ventilated by one door opening into an equally dismal office, and another communicating directly with the foundry, whence drifted in a dull and heavy air, laden with smoke and evil odors, ornamented with graceful festoons of cobwebs, thrice magnified by accumulated grime and soot. The side windows, facing the west, opened upon a narrow driveway, on the opposite side of which were a dirty boiler-room and a noisy engine . . . This unattractive picture, far from being overdrawn, really serves to give but a faint idea of the . . . office of a large and famous establishment in New York city.<sup>19</sup>

Clerical workers, no longer enjoying the easy rapport with their two or three fellow workers and their bosses, were now massed together in highly regimented rows, to mimic—for lack of another precedent—the factory floor. From any viewpoint in the room, the world appeared to be an endless and innumerable sea of desks. Their bosses were usually out of sight, on a floor above them—the one that contained the sole bathroom, which workers had to take several flights of stairs to get to.

To the Gilded Age's reputation for nonchalant corruption at every level of government, literally murderous corporations, and a yawning black gap of inequity between the classes should be added

the sense that sheer chaos was taking hold over the country's organs of administration, public and private. From an elite perspective, America could seem a hopeless, even dangerous case: revolutionaries seemed to be crawling out from every corner of the Republic, sometimes rushing into executive offices with guns trained, other times lobbing bombs at presidents, all in the hopes of inspiring those restless and uneasy masses of laboring men in fields and factories; the offices from which they were supposed to be directed were sinking under mounds of paperwork—lost orders, missing receipts, smudged and totally faked accounts, which added up to millions of dollars that would, when checked, be found missing. Managers didn't know how to manage. If industrial life in America were to be kept alive, the salvation would have to come from the controlling heart of the American economy—the office, and its new class of managers. To rationalize the office, and improve the efficiency of American business, management would have to become a science.

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In 1898, the Bethlehem Iron Company, a supplier of domestic armaments to the U.S. Navy and, despite its name, a steel producer, hired Frederick Taylor as a consultant. Taylor was a member of the American Society of Mechanical Engineers, and he had quietly begun to distinguish himself with a series of papers addressing common problems of incentives and the efficiency of the manufacturing process, which had earned the attention of a few executives who happened to get their hands on them.

He had also distinguished himself, among friends, as something of an odd duck. Less generous observers might have called him a maniac. Throughout his life, he displayed an obsession with measurements and with ensuring that every physical activity was being performed with the maximum possible level of efficiency. The young Taylor insisted on measuring out a square for a game of rounders (an ancestor of baseball) in exact feet and inches.<sup>20</sup> In adulthood Taylor would show up at recreational tennis games with a patented racket he had designed, bent in the middle, claiming it increased the productivity of his swings; he had also taken out patents for

new, more efficient nets and net supports. Odd, too, was his golf game: his driver was ten inches longer than the standard; he used a homemade two-handed putter, which he swung croquet-style. He had developed an unusual swing based on amateur motion studies: bending one leg and raising one shoulder, he would spring as he struck the ball, managing nonetheless to achieve an incredibly long drive. Responding in a letter to a friend who poked fun at his swing, he wrote, coolly,

Your mind seems to run entirely to implementations, while mine has been working rather in the direction of motion study. I wish it were possible to convey to you an adequate impression of some of the beautiful movements that I have been working up during the past year. The only possible drawback to them is that the ball still refuses to settle down quietly into the cup, as it ought to, and also in most cases declines to go either in the direction that I wish or the required distance. Aside from these few drawbacks, the theories are perfect.<sup>21</sup>

Many of his obsessions can be traced back to his youth. He was born in 1856—the same year as Freud—to a successful and wealthy Philadelphia family, who brought him up in a culturally rich household and schooled him for three years in Europe, where Taylor acquired fluency in French and German. But Taylor displayed little interest in cultural pursuits. Though he was sent to the prestigious Phillips Exeter Academy, where he was groomed for Harvard, his grades were mediocre. After beginning to study harder and improve his performance, Taylor started to suffer from frequent eyesight problems and painful headaches. Physiologically, this probably represented a lack of medical attention (he simply needed to wear glasses), but Taylor's parents took his medical problems to mean that he had worked too hard and needed to reconsider college altogether. One of Taylor's biographers, the psychiatrist Sudhir Kakar, has argued, somewhat outlandishly, that Taylor's headaches were in fact psychosomatic manifestations of an existential crisis: Taylor was crippled by his desire to reject Harvard, a symbol of his father's elite inheritance, for real manly work.

Whatever his reasons, it was in fact a little strange that Taylor, rather than securing a safe and un strenuous job as a clerk in a manner appropriate to his class, decided to slum it and work instead as an apprentice machinist in a hydraulic works (where, rather than payment from the factory, he received an allowance from his father). He would later claim that his apprenticeship had made him deeply aware of the attitudes of workmen.<sup>22</sup> Yet his understanding of the workers' point of view, rather than making him sympathetic to concerns on the shop floor, instead hardened his opinion against them. Workers didn't work very hard in his opinion and spent extravagant amounts of time chatting, taking smoke breaks, and slowing down their pace when they needed to rest. At the same time he began to turn against the habitual attitudes of executives and capitalists, who, it seemed to him, had an equal misunderstanding of what was necessary to make work more efficient. After his apprenticeship, he became an executive trainee at the Midvale Steel Works, where, as he tells it, he became acquainted with soldiering, the practice that would preoccupy and enrage him for the rest of his life.

At Midvale, Taylor became the demon of the workplace. He was constantly berating workers for their deliberate dawdling, their refusal to take or follow orders as he outlined them. And of course they responded with choice words of their own. "I was a young man in years," he would say later, testifying before Congress, "but I give you my word I was a great deal older than I am now with worry, meanness, and contemptibleness of the whole damn thing. It is a horrid life for any man to live, not to be able to look any workman in the face all day long without seeing hostility there."<sup>23</sup> After moving from Midvale to Bethlehem, he decided he would break the hostility once and for all. The key, he would discover, was to take knowledge away from the workers and install it in a separate class of people.

There is not a single worker, Taylor would repeat, "who does not devote a considerable part of his time to studying just how slowly he can work and still convince his employer that he is going at a good pace."<sup>24</sup> But it was the lackadaisical management styles that prevailed in one factory office after another that were to blame. There wasn't a single manager who knew how long each task was ideally





Frederick "Speedy" Taylor  
(1856–1915). Frederick Winslow  
Taylor Collection, Samuel C. Williams  
Library, Stevens Institute of Technology,  
Hoboken, N.J.

supposed to take. No one had studied the kinds of motions involved in completing a task. No one knew whether the tools were designed to create the most efficiency in making the particular product. As on the tennis court, so in the office: in Bethlehem, Taylor insisted on the creation of teams of people to draw up an entire diagram of the labor process, to see where lacunae and inefficiencies existed and to see where workers doing needless tasks could be disposed of.

"Dealing with every workman as a separate individual in this way involved the building of a labor office for the superintendent and clerks who were in charge of this section of the work," Taylor wrote of one factory example. "In this office every laborer's work was planned out well in advance, and the workmen were all moved from place to place by the clerks with elaborate diagrams or maps of the yard before them, very much as chessmen are moved on a chess-board, a telephone and messenger system having been installed for this purpose."<sup>25</sup> He demanded the separate observation, study, and encouragement of each individual worker. And, most notoriously of all, he ensured that all workers were doing their jobs as quickly and efficiently as possible by having hired experts time their every motion with a stopwatch. After observation, Taylor would divide up each job into a series of pieces and assign each segment

a rate. This "piece-rate" system also corresponded to a system of incentives: rather than being paid a single wage, workers would be paid based on the completion of particular segments of their work; if they managed to increase their speed, they would get a raise. Fans of the book and subsequent film *Moneyball*, where a form of Taylorism is applied to the baseball dugout and diamond, will recognize the broad fundamentals of the approach: The old stubborn insistence on guns and instinct has to be disposed of. Instead, one must uphold the sanctity of measurable results: diagrams, metrics—"science."

But what Taylor was arguing for was much bigger than the pursuit of mere efficiency. Taylorism implied a wholesale change in the nature and understanding of work itself.

Dividing up labor and tasks wasn't itself new. The increasing technical division of labor into separable, minute activities had been foreseen at least as early as Adam Smith, with his imaginary pin factory in *The Wealth of Nations*; industrial machinery was already making most work homogeneous and automatic, such that what was once a complex object crafted by at most two or three hands would increasingly be divided up among dozens of workers, who contributed to the final product simply by pulling a crank at the right time. Workers who might have initially taken pride from their work were now reduced to, as the phrase went, "cogs in a machine," indistinguishable from each other, no longer possessed of any particular skills or abilities that they could hold as points of pride. Many would see—and have seen—Taylorism as arguing for an even deeper kind of degradation, since it divided up work even further, into the smallest units possible.

Strangely enough, Taylorism was pitched as an attempt to redeem the division of labor and emancipate the individual worker. Taylor hated unions, which claimed that workers could get together to protect their collective interests; he argued the opposite, that each individual worker had his own interests and that a worker could and should be responsible for his own rise. Workers had no common interests; they competed with each other. The system of incentives he established showed how a worker could improve his own working abilities and how he could visibly measure the results of his improvement, with improving marks on his time card. If the

early-twentieth-century workplace seemed to be destroying the individual, Taylor's system would attempt to restore it.

Of course, the pitch was patently false. Taylor's come-hither comments to American workers belied some of his more aggressive statements on behalf of his vision, a fact lost on very few actual workers. "In the past the man has been first," Taylor wrote. "In the future, the system must be first."<sup>26</sup> Taylorism was a way of thinking that came at the expense of workers' own knowledge of their system. Whatever mental components went into manual labor had to be stripped and given to specially trained foremen, who would reorganize the job in such a way that it became impossible for any group of workers to take control of the process. And the Taylorists would do it by any means necessary. With impressively crazed clarity, Taylor summed up his philosophy thus:

It is only through *enforced* standardization of methods, *enforced* adoption of the best implements and working conditions, and *enforced* cooperation that this faster work can be assured. And the duty of enforcing the adoption of standards and enforcing this cooperation rests with the *management* alone.<sup>27</sup>

(Emphasis in the original.)

Though slow to gain acceptance in the world of business, Taylor's system steadily gained *repute*. He gradually accrued a circle of acolytes, who propagated his system in various workplaces as free-lance consultants. The Society to Promote the Science of Management held its first meeting at Keens Chophouse in New York, in the hopes that one day the principles would catch on.

In November 1910, the breakthrough came. Railroads were seeking to raise their freight rates by \$27 million. Along with the executives, railroad workers and insurance companies (representing investors holding railroad bonds) supported the move; the shippers who would have borne the brunt of the costs opposed it. Louis Brandeis, a middle-aged lawyer from Boston who had gained some *repute* for drawing on socioeconomic factors in his legal briefs, decided to fight the railroads for no fee. In early arguments he repeat-

edly questioned the railroad executives about their accounting rationale for raising costs. No one could give Brandeis a straight answer. During a recess in the trial, Brandeis sought more information to bolster his case; one of his friends—Harrington Emerson, an efficiency expert with the Santa Fe Railway (not part of the suit)—told him to seek out Frederick Taylor. "I quickly recognized," he would later say, "that in Mr. Taylor I had met a really great man." Staying in close touch with the circle, Brandeis became more and more convinced that the movement for scientific management was greater than all others "in its importance and hopefulness." When the trial resumed, Brandeis proclaimed that more efficiency was possible: "We offer cooperation to reduce costs and hence to lower prices. This can be done through the introduction of scientific management." All of Taylor's associates testified. On November 10, 1910, the *New York Times* headline read,

ROADS COULD SAVE  
\$1,000,000 A DAY

Brandeis Says Scientific Management  
Would Do It—Calls  
Rate Increases Unnecessary

Over the next two months, the papers tried to find the man behind this new "scientific management." The morning the *New-York Tribune* profile appeared—"Weeding Waste out of Business Is This Man's Special Joy: Perhaps Our Railways Might Save One Million Dollars a Day by Listening to Him"—Taylor woke up famous.<sup>28</sup>

With Taylor's articles now finding a home in more popular journals, the obscure Taylorists, embracing each other and their love of efficiency like members of a persecuted religious sect, suddenly burst into the limelight.<sup>29</sup> Even Lenin, soon after the Bolshevik Revolution, could be found arguing in *Pravda* for the usefulness of Taylorism in the development of Soviet industry:

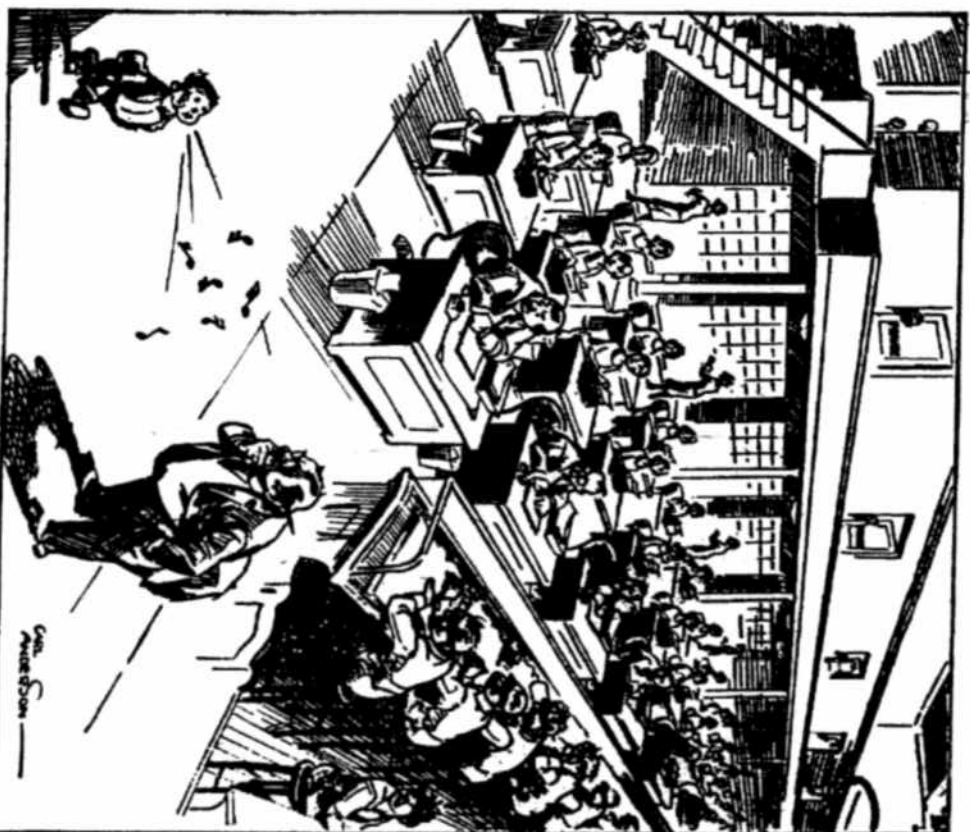
The Taylor system . . . like all capitalist progress, is a combination of the refined brutality of bourgeois exploitation and

a number of the greatest scientific achievements in the field of analyzing mechanical motions during work, the elimination of superfluous and awkward motions, the elaboration of correct methods of work, the introduction of the best system of accounting and control, etc. The Soviet Republic must at all costs adopt all that is valuable in the achievements of science and technology in this field.<sup>30</sup>

Taylor and the figure of the “efficiency expert” became subjects of caricature throughout the country, with every unnecessary motion, even whistling, considered an impediment to pure efficiency. He distilled his theories into the book *The Principles of Scientific Management*, which was influential as far afield as Japan, where many executives attributed his influence to the country’s successful recovery from the war. When Taylor’s son Robert visited a Toshiba factory in 1961, executives clamored for a picture or even a pencil—anything that his great father might have touched with his hands.

The Taylorist triumph that had taken over the news would spread on the shop floor more surreptitiously, like a virus. Factory workers on the shop floor began to report sudden appearances of “white shirts” in their midst, creeping in at first one by one, before suddenly they were everywhere in a blinding white swarm. Motion-capture cameras, which had been developed first by the revolutionary photographer Eadweard Muybridge, were soon deployed by white shirts in factories to ensure that the motion of every laborer was efficient. A group of machinists from the New England Bolt Company of Everett, Massachusetts, testified to their comrades being surrounded: “Cameras to the front of them. Cameras to the rear of them. Cameras to the right of them. Cameras to the left of them . . . If the ‘Taylorisers’ only had an apparatus that could tell what the mind of the worker was thinking, they would probably develop a greater ‘efficiency’ by making them ‘cut out’ all thoughts of their being men.”<sup>31</sup>

But the most infamous element of the Taylorist model was the man with the stopwatch. It would start with one white shirt with a watch. The only line in the May 28, 1915, diary entry of Will Poy-fair Jr., an autoworker for Buick, reads, “Stop watched today.” The



THE EFFICIENCY EXPERT DISCOVERS THAT IT COSTS THE FIRM THOUSANDS OF DOLLARS EVERY TIME EDDIE THE OFFICE BOY GOES WHISTLING DISTURBING JAZZ AIRS THROUGH THE ACCOUNTING DEPARTMENT.

A cartoon in *Life* magazine (1925).

terseness is ominous. One week later, he notes that his four-man drip-pan gang has been split up, their work divided into separate tasks, each assigned a quota and a piece rate. At the Watertown Arsenal, a group of molders walked out when one worker refused to labor under the stopwatch and his fellow workers followed; the strike led to a five-month congressional hearing into the nature of Taylorism.<sup>32</sup>

Taylor died in 1915 of pneumonia. He was already becoming a cult figure, drawing acolytes, each of whom attempted to outdo the other in faithfulness to the master's ideas. It's no wonder he exerted such a tremendous influence on his contemporaries: through sheer compulsion he had become a titan, channeling the entire spirit of his age to lend his name to a new way of working and of managing work. The management theorist Peter Drucker would class him alongside Freud and Darwin (with Taylor replacing the usual Marx) as the three progenitors of the modern age. Few writers about management or the division of labor or the history of work have failed to pay homage—either in admiration or in scorn—to Taylor. But it was the novelist John Dos Passos, in his trilogy of experimental novels, *U.S.A.*, who offered perhaps the most quietly sardonic portrait, drawing on the legend that Taylor wound up his watch first thing in the morning: “He couldn’t stand to see an idle lathe or an idle man. Production went to his head and thrilled his sleepless nerves like liquor or women on a Saturday night . . . on the morning of his fiftyninth birthday, when the nurse went into his room to look at him at fourthirty, he was dead with his watch in his hand.”<sup>33</sup>

□

Taylor’s animus was lodged entirely against the laziness of the industrial shop floor. But his greatest influence lay elsewhere. For in divesting workers of their own ways of handling work—what one union organizer, “Big Bill” Haywood, had called “the manager’s brains . . . under the worker’s cap”—he had simply transferred the work of management elsewhere: into the office. Offices became massive overheads for Taylorist operations, with organizational charts to designate, down to the minutest detail, the labor

process that workers once carried within their own heads. Offices grew enormously simply to house all the new white shirts, with their stopwatches and cameras. Even where Taylorism in its strictest form wasn’t adopted—and, indeed, this was true of most offices—the spirit of management itself spread far and wide.

To adopt scientific management therefore required an enormous expansion of office bureaucracies. “All of this [that is, scientific management] requires the kindly cooperation of the management, and involves a much more elaborate organization and system than the old-fashioned herding of men in large gangs,” Taylor wrote. “This organization consisted, in this case [that is, Bethlehem Steel], of one set of men, who were engaged in the development of the science of laboring through time study, such as has been described above; another set of men, mostly skilled laborers themselves, who were teachers, and who helped and guided the men in their work; another set of toolroom men who provided them with the proper implements and kept them in perfect order, and another set of clerks who planned the work well in advance, moved the men with the least loss of time from one place to another, and properly recorded each man’s earnings, etc.” This simplified model of the Taylor system indicated what a profound increase in hierarchy, in terms of levels and departments, scientific management required. For all the costs that the system saved on the factory floor, it was likely that it reproduced them within the company offices with all the new hired hands.

Had Taylor been the only one bitten with the efficiency bug in his time, his system might have died as a peculiar monomania. After the Watertown Arsenal strike, workers and labor unions were on the lookout for white shirts, and as a result may have ultimately prevented the purest form of scientific management from taking hold on the shop floor. But Taylorism was only one—and the most famous and influential—school attempting to systematize the workplace. The Pennsylvania Railroad had introduced a piece-rate system well before Taylor rationalized it, and efficiency had become a watchword as soon as American industry began to fall into its Gilded Age chaos and lassitude. In 1900, a group of efficiency-obsessed managers seized the spirit of the age and started

a magazine, called—inevitably, perhaps—*System*. Subtitled *A Monthly Magazine for the Man of Affairs*, each volume had articles proposing new models for the minutiae of office life, whether a new system of filing or a more efficient mode of envelope licking. In the section “Successful Through System,” quotations from successful, whiskered, and white-haired executives confirmed the importance and necessity of systems in business organization. “A technical knowledge of and training in systematic methods and organization is the prime requisite in the education of the modern business man,” claimed Thomas Phillips, president of the Federal Trust and Savings Bank in Chicago; meanwhile, Edward Lacey, president of the Bankers’ National Bank, affirmed that business had changed such that systems were now vital to the functioning of business: “While the business world was a mass of smaller units, the necessity for system was not so apparent, but as business units increased in size, necessity soon brought about the adoption of systematic principles and methods.”<sup>34</sup> The relationship of systematic thinking to the office was also made explicit. Each issue of *System* contained a special section of photographs, titled “Bartlefields of Business,” where various methods and forms of office layout were held up as examples to emulate. (*System*’s popularity ballooned in the Roaring Twenties, and in 1929 it was changed to a weekly and relaunched under the name it carried until 2009—*BusinessWeek*.)

In the spirit of the master, Taylor’s associates and acolytes soon began systematizing everything they saw: medicine, bricklaying, sports—you name it, the Taylorists tried to make it more efficient. A husband-and-wife team, Frank and Lillian Gilbreth, became famous for Taylorizing their own large family of twelve children—portrayed in the popular book and film *Cheaper by the Dozen*. After Frank’s death, Lillian carried on the mission, bringing the principles of scientific management into the hiring and firing of employees. Lillian believed strongly that Taylor’s version of scientific management neglected the “human element,” attempted to force itself on workers without ensuring that the workers consented to the imposition. Developing personality and psychological testing for the hiring of employees, her “personnel management” system soon became as famous and popular as scientific management. Supposedly a more

humanizing version of Taylor’s system, it in fact performed exactly what workers had sarcastically joked about before: it was an apparatus for getting inside the minds of the workers and ensuring that they submit docilely to management’s demands. The department of personnel management has been one of scientific management’s most lasting achievements, having come down to us under a different but familiar name: human resources.

With this flurry of activity surrounding the office, it was only a matter of time, of course, before the office itself—where scientific management was being fomented—became the object of systematization. In the introduction to Frank Gilbreth’s treatise on reducing inefficient body movements, *Motion Study*, the author Robert Thurston Kent notes how, inspired by Gilbreth’s descriptions of faster bricklaying, he began to scrutinize the circulation of outgoing mail in the office of his trade engineering publication. Applying motion study to the stamping of envelopes, he notes, began to improve the speed of output, to 100–120 envelopes a minute. It took only a minute’s reflection to recognize that the office could stand to be much more systematized.<sup>35</sup>

Taylor’s disciple W. H. Lefingwell conducted the most far-reaching experiments in organizing offices, publishing his first findings in *System*, later organizing his research into two long-winded and sententious books, *Scientific Office Management* (1917) and the eight-hundred-page textbook *Office Management* (1925). Like the Taylorist works on the factory (there were also pamphlets for housewives on home management), *Scientific Office Management* routs the importance of individual observation and the results of time and motion study: only rather than pulleys and lathes, the means of production to be rationalized in the office are pens and envelopes, typewriters and receipt forms, file cabinets and desks. In an inimitable tone, at once loftily knowing and completely oblivious, Lefingwell details the horrors of the inefficient, underobserved office:

There are millions of unnecessary motions, and when one begins to investigate an office with an eye for these alone, one comes to believe that most of them are in the office. *Warsh a*



girl jogging paper or cards. Long after the work is done she goes on calmly patting them here and there. Watch a clerk rushing through his work, throwing the papers in a disorderly heap as he goes and then when he has finished, watch him spend a few minutes straightening things up. It never occurs to him to pile them in an orderly manner in the beginning. Watch him when there are a few letters to be sealed or stamped. First he carefully moistens the gummed end, then presses it down, then pounds each stamp with his fist. Watch clerks enclosing printed matter in envelopes. A trained expert will do as much as four or more untrained workers, yet only half of the difference is in the speed, the other half being in the elimination of waste motions.<sup>36</sup>

Photograph captions indicate how the scientifically managed office earns savings of 20 percent in envelope stuffing, through the elimination of useless motions and the deployment of more salubrious furniture. "This 'motion-studied' mail opening table made possible a 20% increase in the output," Lefingwell writes in one caption. "This girl takes out money and letters and pins and sorts them at the rate of 310 an hour. Note the sunken baskets and the footrest."<sup>37</sup> Observation also reduces fatigue and inefficiency in typing: "A typist who could write very rapidly had the habit of continually twisting her head to read the copy, often as many as four or five times for each sentence. It was only a habit, since there was nothing the matter with her memory, as was proved by asking her to repeat a sentence of the copy which she had only read once. When it was pointed out to her that she was twisting her head eight or ten times a minute, over 500 times an hour, the habit was stopped, resulting in an immediate increase of speed and a decrease in fatigue."<sup>38</sup> At the same time, Lefingwell notes the difficulty of instituting time study and management techniques on the office floor and suggests manipulative forms of games to encourage workers to participate in the study: "One manager who has had considerable success in introducing the use of the stop watch in his office, casually remarks to his subject: 'I wonder how long it takes you to do that job?' After two or three employees have been timed and nothing has happened,

the rest of the office force is usually not only willing but anxious to be 'time studied.'"<sup>39</sup>

Yet for the most part, besides demonstrating the mania of the Taylorists for infinite subdivision of tasks and time study, Lefingwell's treatise unconsciously reveals the sheer novelty of office life itself—the fact that managers were mostly unsure of how to organize and run offices. When not discussing time and motion study, Lefingwell covers fundamentals in office life in a superficial, basic way. "In many offices little attention is given to the selection of pencils," he writes, alarmed. "In some kinds of work a soft lead pencil is required, in others a medium, and in still others a hard lead. Sometimes an eraser is necessary."<sup>40</sup> Discussing lighting in an office, Lefingwell writes, in a mixed tone of discovery and authoritativeness, that "some kinds of work require much better light than others—see that those workers who require the most light get their preference."<sup>41</sup> As for office layout, his "scientific" inclination is to reproduce the assembly-line model of the factory floor. He suggests that departments which depend on each other be placed near each other. And his recommendation on water fountains, with its exceedingly precise calculations, can read like a satire on Taylorism itself: "The average person should drink water at least five or six times a day. If each of one hundred clerks in an office were compelled to walk fifty feet to, and fifty feet from, the fountain, five times a day, each one would walk five hundred feet a day. Multiplied by one hundred clerks the distance traveled would be fifty thousand feet, or nearly ten miles! Multiplied by three hundred working days, the clerks would be walking three thousand miles for water in a year."<sup>42</sup> Elsewhere in his book, Lefingwell emphasized the importance of what was called "welfare work"—which today we would class as the amenities offered by a particular office (recreational facilities, adequately portable coffee, the occasional leftover bagel from a breakfast meeting). In the mechanized world of the Taylorist office, the amenities were different: a "rest room," where women could lie down on couches or congregate around a phonograph to dance, or one where men could retreat during fifteen-minute breaks to smoke.

All these were the signs of an office world that was only just coming into its own, the notion of "the office" itself, as a separate

world, with its own rules and atmosphere and culture, was being justified under the rubric of management. The office was no longer merely an administrative holding tank, parasitic on the "real work" done in factories and fields, but the place where the real work was in fact getting done. Lee Galloway, another Taylor disciple, addressed this very misconception in the opening to his manual, *Office Management*: "When it is seen that the activities of production and distribution are made possible only through the operations covered by the term 'office work,' then we approach the truer appraisal of the office as a necessary economic factor. The office managers and employees cease to be passive agents in the promotion of business and their labor is no longer charged to a non-productive account. They at once rise to the dignity of active forces which furnish constructive ideas, and co-ordinate the activities of the business into smoothly working units of enormous size and power."<sup>43</sup> The office, in other words, was becoming the real workplace, and scientific management attempted to view it as the site of a potential utopia: where buzzing managers proliferated like cicadas in summer, where impeccably ordered rows of desks receded into the vanishing point of the horizon, where American business became inexorable, honed, and proud.

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It's worth dwelling on what Taylorism and other contemporary theories of efficiency must have done to the world of the office worker. The effects were no doubt felt unequally among generations. Much like contemporary office workers who witnessed the last throes of the typewriter and the Dictaphone and learned to embrace the personal computer and the photocopier, office workers in the twenty years following the turn of the century experienced a profound shift in the pace, nature, and volume of work. Offices with only a few clerks suddenly had hundreds; bosses who were once as near to you as the length of your arm were suddenly insulated in posh executive suites. The small merchants' offices had metastasized into a paper-work empire, spanning not only dense cities but entire continents. Offices were segregated into departments, and the departments split

hierarchically into managers and clerks. Work had, for most people, gotten more specialized and less interesting. *Blessed be drudgery!*

Office workers were forced to become aware of their bodies and their motions in time beyond anything that they had known before. Taylorism, whether applied in its most ruthless form or not, ensured constant supervision. Pictures of offices from the time show foreman-like workers pacing the floors over sitting clerks with their heads bowed—no one seeming to make light conversation, no one daring to turn their eyes from their work. In many offices, the wrong motion would earn demerits. Thanks to the spread of Taylorism, managers believed almost dogmatically that slight shifts in office arrangements could change behavior as well as allegiances and work habits. And in fact they were right. The early management theorist R. H. Goodell described an example where clerical workers were constantly disrupted by visitors passing in a corridor. He decided to turn the desks away from the door, and also from their supervisor's desk. This meant that they were no longer disrupted but also no longer saw their supervisor observing them—even though they knew he was constantly watching.<sup>44</sup> In other words, it was easier for workers to continue working if they internalized the watchful eye of their boss. No doubt, still other offices observed the more casual nature of the old countinghouses, but these were usually smaller firms. The unscripted practices of the old offices would remain, but as a kind of subterfuge: in the future, a leisurely pace wouldn't be the norm; time would not be given, but stolen.

Taylorism succeeded not just because of the force of its founder's personality; it also harmonized with a broader cultural shift toward anatomizing the movements of people's bodies in time. From Cubist painters like Braque and Picasso to photographers like Eadweard Muybridge, the late nineteenth and early twentieth centuries witnessed an obsession with breaking down objects, moments, and bodies—one that corresponded to a breaking down of the features of the mind itself. The strict movements of classical ballet were giving way to the seemingly more free but no less planned motions of modern dance. And finally, the birth of the cinema meant that motion could be captured in a continuous stream and then slowed down—viewed in its component parts. Among the most fervent

moviegoers, of course, were clerks themselves. The workers who labored under Taylorism saw themselves as swept up in a tremendous current in which hitherto unacknowledged aspects of their lives were being scrutinized.<sup>45</sup>

The sense of being watched was part of a larger change in the process of work, in which segments of the office workforce felt themselves turned into objects rather than agents of capitalism. Until the turn of the century, it was easier to draw distinctions along what has only half jokingly been called the "collar line," the separation between manual and nonmanual labor that made most clerks feel that they belonged naturally to the upper stratum of society. Indeed, the very phrase "white-collar" to designate a certain kind of worker was coined when the socialist writer Upton Sinclair deployed it in his polemic against the mainstream press, *The Brass Check* (1920), to describe conservative journalists who looked down on the industrial working class. "Because they are allowed to wear a white collar," he sneered, "[they] regard themselves as members of the capitalist class."<sup>46</sup> Cartoon images of the Taylor system depicted snooty, pale, vested men directing begrimed and swarty industrial workers: here was the office taking precedence over the factory, the white collar over the blue, and the skilled, knowledgeable worker over the drone he has forcibly de-skilled.

But this image of superiority was no longer the experience of many workers. Even the office had been fractured by the forceful separation of ownership from management and the construction of a new, elaborate system of hierarchies in the modern American corporation. The clerical employee is no longer as intimate as he used to be," *BusinessWeek* (née *System*) noted in 1929. "He is anybody at all, a worker, almost a number, like a mill hand."<sup>47</sup> There was no longer the easy correlation to be made between clean labor and being middle-class. The connection that a man like Edward Teller once drew between his low position as a clerk and that of his boss became separated by a gulf. By separating knowledge from the basic work process ("the separation of conception from execution," as Harry Braverman once put it), in the factory as well as in the office, the ideology of Taylorism all but ensured a workplace divided against itself, both in space and in practice, with a group of manag-



Trade union responses to Taylorism often emphasized the division between genteel white-collar managers and the work they forcibly (mis)directed. *Smithsonian Institution*

ers controlling how work was done and their workers merely performing that work. Somewhat more dangerously, this division put the workers' doubt the notion that office workers were, as a whole, on the way up. Some of them were closer in income, status, and life chances to the grimy manual workers they were supposed to be directing. It became increasingly clear from the shape of the offices themselves, and from the distance between the top and the bottom rungs of the "ladder," that some workers were never going to join the upper layers of management. For some, work was always, frankly, going to suck. How they would react to these changes would shape the course of the office for generations to come.

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In 1906, some years before Taylor had achieved his fame, an office building appeared whose concerted, unified conception of architecture, layout, design, and management seemed to anticipate and solve all the problems of management and office labor. On the

outside, the Larkin Administration Building in Buffalo, New York, designed by the young Frank Lloyd Wright for the Larkin Soap Company, looked heavy and undistinguished: a stern pile of brick piers, guarded at the corners by pylon-like stair towers, seemingly at one with the smoke-ringed, snow-walled surroundings of turn-of-the-century upstate New York. But visitors entering the building were astounded by the airiness and light of the interior court, where under a lofty ceiling orderly rows of clerks diligently handled the piles of correspondence pouring into the building with implacable speed. Unusual for any office building was the coolness of the air, maintained at a temperate level even as the midsummer heat asphyxiated Buffalo's residents outside. The lives of all the workers were at once supervised and organized, with Larkin offering lunchrooms, a bathhouse, hospital clinics, safety training, a gym, thrift clubs, benefit funds, picnics, weekly concerts, and a profit-sharing plan.<sup>48</sup> Striving at once to be the acme of a progressive company and the model office, Larkin anticipated the familial and all-enveloping nature of many corporations to come.

The Larkin Company started out in 1875 as a manufacturer of soap, which its traveling salesmen sold on the road, later branching into various perfumes and powders. But in 1881 it began to experiment with soliciting storekeepers by mail, which unexpectedly resulted in a boom in orders. Soon Larkin began, in what seemed like a natural leap, to provide general luxury items, like a fine handkerchief or a small art photograph, and to select orders as a sales incentive. It worked: gradually Larkin began to buy mass quantities of all kinds of products—bicycles, silverware, baby carriages, clothing, guns—directly from manufacturers and sell them through its newly expanded mail-order business.<sup>49</sup> Much like Amazon.com a century later, Larkin was forced to expand enormously from its original raison d'être to focus on managing the sheer volume of mail orders coming through. Twelve new soap factory buildings were constructed in the 1890s, but it quickly became clear that the mail-order business was no longer secondary. By 1903, the company was receiving five thousand orders a day.<sup>50</sup> Darwin D. Martin, one of the accounting secretaries, developed a highly efficient account-filing system for tracking orders, but the innovation couldn't compensate

for the lack of space. The company administration decided that it could no longer have its clerks working in hot, dirty, noisy environs surrounded by soap vats. The thirty-five-year-old Wright was young for an architect and mostly known for his houses, which were already famous. "His houses are called 'freak' houses," wrote Darwin Martin in a letter to John Larkin, reassuring him that "the owners, whom we met, were not freaks."<sup>51</sup> In person, Wright impressed the Larkin managers with his evangelism for clean air and well-lit spaces. On the strength of his near-messianic fervor, he was hired.

The challenges in designing the Larkin Building were many. It needed to accommodate eighteen hundred office workers processing their six daily shipments of mail orders while nonetheless maintaining a comfortable, spacious environment. Part of the problem was the location: Buffalo was not a hospitable city for a clean, well-lit office. Surrounding the site for the company, near the already built factories, were railroad lines, forges, foundries, coal yards, and other heavy industry—a grimy, dusty environment for a soap company. Without atmospheric control, soot was bound to accumulate along the walls and on the desktops. The original factory buildings where the office workers were housed had nothing in the way of air-conditioning (it hadn't been invented yet), and no example existed of an office building that had successfully managed the circulation of air and still maintained an adequate quantity of light. Wright's design would meet all of these challenges and in the process raise the status of office design to an art. "In-so-far as it is simple and true it will live," Wright would intone some months after its completion, "a blessing to its occupants, fulfilling in a measure on behalf of the men who planted it there their two great reciprocal duties, duty to the Past and duty to the Future—duties self imposed upon all right thinking men."<sup>52</sup>

Wright had promised his commissioners that the offices would be as "light as out doors"—this despite the plans to seal the interior with solid slabs of brick massing. And yet the most immediately obvious achievement in the building was the gleaming ubiquity of natural light—something that workers in supposedly progressive offices today sometimes go an entire day without. The basement received natural illumination from windows in the foundation wall

and from skylights. Otherwise densely packed stairways were leavened by both skylights and slits of windows along the climb. The entrance to the lobby was opened up by large sheets of clear glass, framed as doors; this was an unusual move at the time, but following Larkin it became a commonplace of all building lobbies. But Larkin's most famous feature was its central light court. Filtered by a metal-and-glass roof, the skylight cascaded downward through a vast cavern of space carved by balconies, flooding and reflecting off the white walls. A light court was a common feature of skyscrapers in Chicago, but unlike those buildings, where retail stores filled the periphery spaces, Larkin used its court as office space—indeed, the central administrative space, where Darwin Martin and William Heath sat alongside an orderly row of administrative assistants.

Yet such plentiful daylight, and Buffalo's general predilection for viciously humid summers, made ventilation and temperature control a big problem. Wright's solution appears to have come to him in a burst of inspiration: "The solution that had hung fire came in a flash. I took the next train to Buffalo to try and get the Larkin Company to see that it was worth thirty thousand dollars more to build the stair-towers free of the central block, not only as independent stair-towers for communication and escape, but also as air-intakes for the ventilating system."<sup>53</sup> The pylon-like towers on the outside were therefore kept exterior to the building itself precisely to make the interior more habitable. In other words, it was the needs of office and the mechanical structure of the ventilation system that determined the shape of the building, a rare instance of form truly following function. Air came in through the ducts in the walls of the corner towers; entering the basement, the air was filtered and either heated or, after the installation of a new refrigeration system, cooled. This "conditioned" air was then distributed on each floor of the building. Though less advanced than the systems that would follow the mass adoption of cooling systems, Larkin's innovative environment made it very nearly the first air-conditioned building in the country.

The arrangement of the desks and offices themselves appeared traditional at first. On either side of the chest-high walls flanking the central gallery lay modular file cabinets and row after row of

custom-designed desks, grouped in packs of four, each equipped with a fancy metal cantilevered folding chair that swung in and out (which despite its fanciness was apparently rather uncomfortable to sit in for the whole day).<sup>54</sup> The general pleasantness of the conditions smoothed the impressively organized flow of paperwork, which sped from the low-level receiving area up to the top of the building and then trickled down through several departments until it could safely be expedited to the factory floor. Correspondents would dictate responses to mail-order inquiries into gramophones; these recordings were pressed onto wax disks that were taken by messengers to a typing pool; the typed-up responses were checked; then they were sent to the warehouse. (Wright would revisit this slow downward curve some fifty years later in designing the interior spiral of the Solomon R. Guggenheim Museum in New York City.) A number of rooms were devoted to relief and enjoyment. A YWCA was available in the building chiefly for therapy and counsel (there were not enough young male employees to justify a YMCA). A library provided four hundred circulating titles and the latest magazines, while a "rest room" was equipped with leather chairs and a player piano. Tiled roof gardens offered escape in spring and autumn.<sup>55</sup>

Though employee testimonials are few, the ones that survive affirm a special pride in the warm nature of the business. "A class place to work in Buffalo," a former secretary reported. "They took care of you."<sup>56</sup> One visitor claimed that hundreds of thousands of visitors came to marvel at the building—including several Russian aristocrats and various engineers and designers from around the world—which was somewhat strange for what was, after all, merely an office.

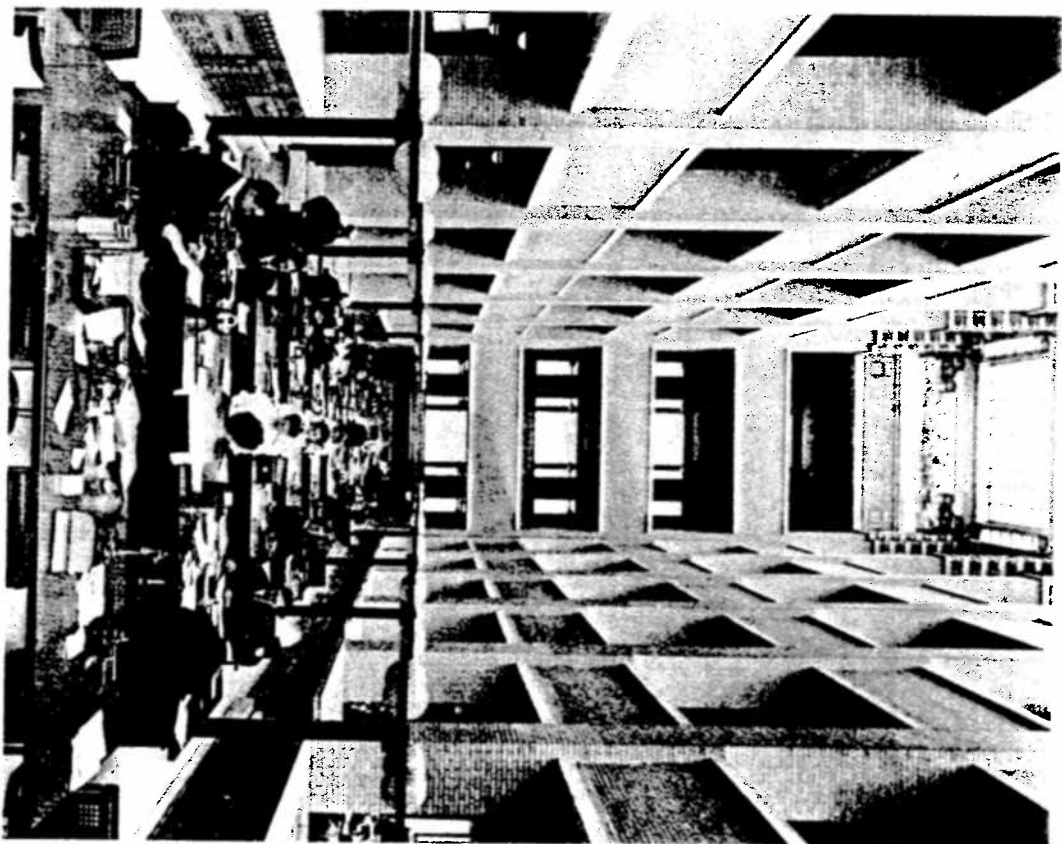
But more was at stake in the thoroughness of the Larkin Building's design than mere problem solving or taking good care of its workers, as the thousands of visitors would indicate. Wright and the Larkin people had created a total office environment, every detail of which was intended to exude the enlightened attitude of the company itself. Again, like the offices of Google, the Larkin Building was an advertisement for the company; its reputed attention to the work process helped sell the company's products. It inscribed the walls with inspirational buzzwords, goads to the collective productive spirit:



GENEROSITY ALTRUISM SACRIFICE  
 INTEGRITY LOYALTY FIDELITY  
 IMAGINATION JUDGMENT INITIATIVE  
 CO-OPERATION ECONOMY INDUSTRY  
 INTELLIGENCE ENTHUSIASM CONTROL

The building was also an advertisement, for the staff as much as for visiting foreign dignitaries, for the health and fortitude of American business. "It is enterprise, American enterprise, that drives the wheels," wrote the observer George Twitmyer in the *Business Man's Magazine*, "carefully organized systems and methods are the jewel bearings; good will, the lubricant."<sup>57</sup> Wright, too, would proclaim the ineluctable Americanness of the building. "The American flag is the only flag that would look well on or in this building; the only flag with its simple stars and bars that wouldn't look incongruous and out of place with the simple rectangular masses of the exterior and the straightforward rectilinear treatment of the interior." In tones reminiscent of Ralph Waldo Emerson, he proclaimed the building's independence from malign European influences: "I think our building is wholly American in its directness and freshness of treatment. It wears no badge of servitude to foreign 'styles' yet it avails itself gratefully of the treasures and the wisdom bequeathed to it by its ancestors."<sup>58</sup>

At the same time, though it was infinitely more advanced and considered than the dingy, gloomy offices that were beginning to climb undeservedly high above American cities, there was a danger in the Larkin Building's totalizing nature that would appear again and again in the history of the office. For what passed for workers' welfare could with a little imagination also be seen as social control. Look at the photograph of the light court: a row of identically attired and coiffured women together in a visual line, guarded at the desk corners by four male executives. Was this a communal, team-focused environment? Or was it one designed for easy supervision and surveillance, a way to enforce discipline and adherence to unity? Even the recreational activities stressed cooperation and commitment. The theme of a "masque" held for executives and secretaries in 1916 was described in a pamphlet with the mock language of



The light court of Frank Lloyd Wright's Larkin Building (1904).  
 Buffalo Historical Society

seventeenth-century allegory, spiced with a few choice words from twentieth-century management theory: "That when Industry is mastered by Ignorance, and all the qualities that go with Ignorance, like Disorder, Sloth, Greed, Inefficiency, and Strife, Industry becomes useless and unable to serve mankind. When, however, Industry is freed from Ignorance by Imagination, and the spirits which accompany Imagination, like Service, Co-operation, Order, System, and Ambition, then Industry becomes the true servant of mankind and indispensable to its happiness."<sup>59</sup>

"System," "Order," "Inefficiency": these were also the shibboleths and scare words of the scientific managers, potentially making a major bummer out of what was otherwise a company party designed for relaxation. "Relaxation," however, was not a neutral fact; it was rather the other half of the managerial equation—evidence of the Larkin Company's commitment to what was known at the time as "industrial betterment." A loose movement of reformers and visionaries, alarmed by the rising tide of strikes and sabotage committed by restless, unmotivated workers, they didn't feel that the solution lay in reducing the monotony of the work—say, by rotating workers from job to job or offering workers more control over the pace of their labor. On the contrary, for the reformers, monotony was in fact the *good* part about industrialized work. The intellectual historian Daniel Rodgers puts it elegantly: "Borrowing the concept of habit from late nineteenth-century psychologists, they insisted that routine emancipated the worker by wearing deep and comfortable tracks in the nervous system that set his mind free for thought."

Hence, if industrial employees chafed at their tasks, effective cures concentrated not on the work but on the worker's mental state."<sup>60</sup>

The task was therefore to offer amenities on and off the job. The Larkin Building corresponded precisely to this ideal: the work process was as regimented as a Taylorist office, but the workers had, by way of compensation, noonday lectures to attend; classes to frequent; a company newspaper, *Ourselves*, which the workers could help put out or at least read. The numbing work remained the same.

Though the Larkin Building had elevated the process and environment for working, it did little to change the nature of how work was organized or how hierarchies were rationalized—in short, how the

office could offer better work, not just a better working environment. The Larkin Building would remain the best office building on offer for years to come. But its design could only refract, not solve, the growing problem of office work and its discontents in the early twentieth century.

## THE OFFICE OF THE FUTURE

*From some distant cubicle comes a tiny electronic melody Maxine recognizes as "Korobushka," the anthem of nineties workplace fecklessness, playing faster and faster and accompanied by screams of anxiety . . . Has she entered some supernatural timewarp where the shades of office layouts continue to waste uncountable person-hours playing Tetris? Between that and Solitaire for Windows, no wonder the tech sector tanked.*

—THOMAS PYNCHON, *Bleeding Edge*<sup>1</sup>

Office worker discontent didn't only inspire organizing; unionization, as well as groups like 9to5, remained rare. But there was another branch of discontent: one that led straight into reshaping the physical world of the office. As with the countercultural ideas that made their way into management textbooks of the 1960s, a handful of disgruntled white collars translated their unhappiness into design. Looking back at the 1970s unexpectedly discloses a fertile moment for the future of the office. Many of the things said then could be said now—or, perhaps, were realized in the future that is *our* present.

Seeing that they were on the cusp of some hitherto invisible computer revolution, a number of researchers began predicting vast changes in the nature of office work. These were accompanied by a

significant number of writers who, unlike the researchers, had done virtually no research. Though they had little intellectual capital to offer, they became well-remunerated professional futurologists, whose job was to get people excited about the brave new world of work that was coming into being. Thanks to the cunning of history, many of their predictions would in fact come to pass.

In 1975, *BusinessWeek* coined a phrase with its series of articles on "the office of the future." Reporting on the as-yet-unseen future of the computerized office, experts predicted the end of everything that the office was known for: the end of typewriters; the end of secretaries; and the end, above all, of paper. George E. Pake, head of Xerox's research division, accurately predicted the emergence of an electronic form of correspondence. He described a "TV-display terminal with keyboard." "I'll be able to call up documents from my files on the screen, or by pressing a button," he said. "I can get my mail or any messages. I don't know how much hard copy [that is, printed paper] I'll want in this world."<sup>2</sup> Though confidently imagining a paperless office, experts were quick to say that changes were not around the corner. "It will be a long time—it always takes longer than we expect to change the way people customarily do their business," said the president of Redactron Corporation, a manufacturer of text-editing typewriters (that is, typewriters that could also correct documents).<sup>3</sup> And yet just a few years later, the National Science Foundation (NSF) encouraged a group of its workers to try out having all their work "on-line." Excluding any kind of paper use except what was necessary to communicate with people outside their group, a manager, four professionals, and a secretary stored all of their work using digital means. Amazingly, despite the rudimentary quality of computer storage at the time, the NSF recorded productivity gains.<sup>4</sup> The world of *The Jetsons* might not be that far off after all.

Only a few years earlier, and little noticed, a group of product engineers at IBM had tried something that was, in their words, "radically new." They moved into a new office space that was not only without walls but without permanent workstations. Calling it a "non-territorial office," they tried to set up a space that would accommodate motion between different kinds of work setups,

based on the particular task at hand. In addition to common tables and work benches, scattered throughout the work area, engineers had access to quiet areas where they could escape for concentrated work if necessary. The goal overall was to "improve and increase the sharing of problems and experience" within the group. Freeing people from their workstations would naturally result in greater interaction between other isolated people, the story went. The workers approached the project with trepidation; they said, in the words of the researchers who reported on the experiment, that "the opportunity to decorate a personal space has become one of the few remaining avenues for expression of individuality in large organizations."<sup>5</sup> But afterward, they couldn't have been more enthusiastic. "Don't fence me in again," one engineer said. "I was skeptical before, but I'd hate to go back to closed office now," said another. Data suggested that internal communication had indeed improved. The non-territorial office was, in this instance, a success.<sup>6</sup>

Visions of paperless and non-territorial offices were contemporary with another kind of visionary idea: that there wouldn't really need to be offices at all. Alvin Toffler predicted in the early 1980s that telecommunications technologies would revolutionize the workplace. People would no longer work in offices; instead, they would be housed in "electronic cottages" in the countryside, linked to a worldwide network that made office buildings obsolescent. In a suitably apocalyptic (but not too exaggerated) image, he imagined downturns "stand[ing] empty, reduced to use as ghostly warehouses or converted into living space."<sup>7</sup> Though "working from home" was a concept decidedly in its infancy, Toffler's idea had precedents. Stuck in a traffic jam on his way to his L.A. office one day in the 1970s, the American researcher Jack Nilles (who was, quite literally, a rocket scientist) began to imagine ways that people might be able to avoid costly and frustrating commutes altogether. Long commutes were polluting, encouraged wasteful sprawl, and above all were inefficient. With a grant from the National Science Foundation, he began a feasibility study for an L.A. insurance firm of something he called "telecommuting." Because the firm was located in an old crumbling building in a neighborhood with an aging population, it had to attract younger workers from far away, who were

loath to brave the arduous travel time to work in a crummy office, no matter how attractive the company was. (And the company was attractive: it provided a higher salary than most comparable places, free hot lunches, and a reduced workweek of 37.5 hours.) Nilles enthusiastically concluded that telecommuting was a viable option. He mentioned hesitations: supervisors would no longer be able to control their employees; and workers themselves might miss out on the social atmosphere of office life. But the company went forward with it. As soon as it began to be effective, the project was canned. It turned out managers felt threatened by telecommuting: they weren't able to control their employees in the same way as before and had to change their methods.<sup>8</sup>

Things in 1980s offices often seemed grim, but in the late 1990s a utopia seemed to emerge on the horizon. It was way out, beyond the highest ranks of the corporate world in New York or Boston or even Tokyo. In this new land, the story went, the workplaces were full of the smartest people on earth, knowledge workers in the truest sense, starting companies left and right, some of them crashing to earth, others lighting up the sky like streaking comets. In the 1990s, the office world suddenly seemed—once again—full of promise, and the whisper in everyone's ears was the old one: *Go west* . . .

□

Drive on U.S. 280 down from San Francisco in the springtime, and you find yourself emerging from the thick, fogbound hills of South San Francisco and Daly City, San Bruno, and Millbrae into a sinuous, verdant landscape, poppy-ridden, glinting here and there with real reservoirs. Take the exit onto Sand Hill Road, backed by hills filled with California oaks, and you'll find yourself in the bucolic regions of what is often taken to be the future. Soon you crest a hill and see below you a classic oasis of sprawl, striated by highways and dotted with low-rise corporate campuses. On your right is the endless sandstone campus of Stanford University (Stanford, where it always seems to be late afternoon, like a de Chirico painting). On your left, row after row of squat brick-and-glass boxes, one partnership after another, venture capital firms whose partners can walk

across the street to meet the students they plan to make rich. Here was where the office of the future at last met the people who were determined to make it real.

At least since the 1980s, Silicon Valley was the source of no end of utopian prognostications about the workplace. Not only were its soft- and hardware innovations supposed to be lightening the burden on everyone else's work by making it less laborious and more streamlined, but the workplaces of the Valley were also seen as idylls of enlightened capitalism. Even after muckraking journalists began sneaking into its light-manufacturing chip factories and exposing toxic working conditions there, the offices were still held up as models for the rest of the country. The Valley was the world's truest merit system, it was said; the only aristocracy there was the aristocracy of talent. Job turnover—what business writers called “churn”—was terribly high, but not, the Valley people said, because of constant layoffs. Rather, turnover was a reflection of job mobility and the relentless pace of technological change. Companies grasped eagerly at excellence, prompting people to move constantly; it was also the case that those same companies often went under and were replaced by new ones. Some individuals were serial entrepreneurs themselves: they no sooner founded a company and loaded it up with venture capital than they moved on to their next gig. Nobody needed job protection, because they had freedom instead. And they worked constantly.

The late Steve Jobs, Apple's co-founder, whose black-turtlenecked ghost looms powerfully over every budding Valley entrepreneur, set the tone at the first Stanford Conference on Entrepreneurship in the early 1980s. “There is something going on here on a scale which has never been seen on the face of the earth,” he said, with characteristic portentousness, describing what he called the area's “critical mass of entrepreneurial risk culture.” “A lot of people ask if Silicon Valley is ever going to be unionized,” Jobs went on. “I say everybody's unionized . . . There's much greater union here than I've seen anywhere. What we're starting to see is the redefinition of the corporation in America.”<sup>9</sup> It was a sign of the times that Jobs could pretend not to know the meaning of the word “union.” Yet he was right in describing the workplaces of the Valley as being

knotted together by powerfully, almost desperately strong forms of corporate culture. The hierarchies were flatter, the amenities were better, and the stock options were plentiful, making for offices that often evinced, at least on the surface, high degrees of teamwork. It helped, paradoxically, that at any minute one team member might pick up and leave, to start a new, competing team somewhere else.

Appropriate to its churning, libertarian ethos, Silicon Valley was born in an office revolt. In the lore they are known as the Traitorous Eight—the young engineers who in 1967 walked out of Shockley Semiconductor Labs to found their own company, Fairchild Semiconductor Corporation, the first company to manufacture chips exclusively in silicon. In 1968, two of those eight, Robert Noyce and Gordon Moore, resigned; they each put up \$250,000 to found Intel Corporation,<sup>10</sup> one of the first companies with a nonhierarchical, open-plan office, replete with secondhand metal desks.<sup>11</sup> Three years later, they had produced the world's first microprocessor. The rest of the iconic Valley companies have similar stories, which have spread far beyond its traffic-choked two-freeway peninsula into postindustrial folklore: Dave Packard and William Hewlett working out of their garage (now a landmark); Jobs and his co-conspirator Steve Wozniak, who had left Atari and Hewlett-Packard, respectively, presenting the Apple 1 at the Homebrew Computer Club in Palo Alto; and of course the thousands of students for whom late-night hacking binges in dorms and rec rooms on college campuses like Stanford formed their early idea of what a “workplace” should be like. This pervasive culture, or cult, of informality, coupled with an intense devotion to all-hours work, would have an enormous influence on the work environments of the Valley.

Another key factor in the rise of the Valley was the counterculture. The first generation of Valley pioneers was unimpressed with the goings-on at nearby Berkeley and San Francisco State. “We are really the revolutionaries in the world today—not the kids with the long hair and beards who were wrecking the schools a few years ago,” Gordon Moore told *Fortune* in 1973. People like Packard, one of the prosecutors of the Vietnam War, were often objects of student protest. Valley computer geeks often had little compunction about supporting the American war machine. But the second



generation—Jobs and Wozniak's generation—was different. They enjoyed a well-chronicled relationship—to recreational drug use and, less often, political activity. *Pirates of Silicon Valley*, a 1990s film chronicling the dual rise of Jobs and Microsoft's co-founder Bill Gates, makes this point explicitly, having Jobs and Wozniak weaving in and out of a pot-smoke-ringed antiwar protest, carrying computer parts back to their home. Jobs and Gates were famously dropouts, and so were countless others—a common feature of the Valley career that would be exacerbated in the 1990s by the promise of gargantuan venture capital payouts based on slivers of wisps of ideas. The disaffection with figures of authority meant that most Silicon Valley types couldn't tolerate university learning for long, even though, ironically, they would go out of their way to make their offices resemble college campuses.

At first the signature Valley office was filled with cubicles. That sounds of course like yet another callous business environment. In the Valley, however, cubicles were adopted as a deliberate affront to the traditional office arrangements still on offer in the rest of the corporate world. Like the *Bürolandschaft* that made it possible, the all-cubicle office was a symbolic gesture toward equality. Whatever its aesthetic value, forcing all employees, whether bosses or staff, to wade into a sea of flimsy partitions was more egalitarian than having most out in the snake pit with others snug in closed-door offices, let alone executive suites. And though the office layouts themselves were uninspiring, the surrounding amenities were enormously better than at most places. Besides the fabled Foozball tables and basketball hoops that soon became the boilerplate references in the media, many, if not most, Silicon Valley companies offered rec centers and swimming pools; they usually didn't insist on suits and ties; work hours followed flextime, while job rotations and autonomous work teams were normal; and to foster corporate bonding, they hosted picnics, barbecues, and end-of-the-week “beer busts,” where workers got together, drank beers—and inevitably did more work. It was the college lifestyle extended into the early days of a startup and then institutionalized as the startup got bigger. Not uncommon in Silicon Valley, this fun office lifestyle became the subject of legend. In 1984, the *New York*

*Times* reporter Robert Reinhold wrote that workers at the Rolm Corporation, a Silicon Valley telecom company, “eat subsidized meals in the restaurant-like cafeteria, choose their own hours, and enjoy a company recreation center that offers two pools, volleyball, racquetball and courses ranging from skiing to pregnancy care.” In those anxious, global-competition-fearing times, he compared it to Japanese techniques of worker involvement. “The methods vary widely,” Reinhold wrote, “but [all the Valley companies] have one thing in common: a belief that the traditional hierarchical structure of older Eastern-based companies has hobbled American industry in an age when technological change is so rapid that a few weeks lost can mean the difference between failure and success.”<sup>12</sup>

But for the workers, over time these companies ceased to be the vanguard organizations of a future utopia and became instead just like big businesses of old. Embodied above all in lumbering behemoths like IBM (and later replaced by the idea-stealing giant Microsoft and its nasal-voiced overlord, Bill Gates), they were the companies to bear—the ones stifling, rather than fostering, innovation. And workers felt it immediately in the design of the offices. In a typical Silicon Valley reminiscence from the 1980s, one worker held the workplace utopia up to critical scrutiny:

Management took great pride in being an exponent of the “Office of the Future” concept, which was touted as effecting a radical transformation of conventional office relations and designs. Since it is said that change begins at home, I looked around the office. It consisted of a series of cubicles with tall dividers; in order to speak to anybody, I had to stand up and peer over the partition. Each cubicle was unbelievably cramped; there were no windows; the ceilings were claustrophobically low; and fans spread the stale air around equitably and democratically. The supervisor's fan was at floor level, a detail I discovered after almost shredding my pants leg in the blades. Most workers didn't even have a phone at their desks—no doubt, such a “privilege” would have been “abused” to the detriment of the productivity level. . . .

The message? Office of the Future = More of the Same.<sup>13</sup>

When the largest tech corporations expanded in the mid-1990s, each needed to consider the benefits of closed offices versus an open-plan office with cubicles. Microsoft added more closed offices. So did Apple, which by the late 1980s was dealing with chronic absenteeism from its employees; its workers had found the noisy cubicle environment so detrimental to concentration that they often stayed home. Its redesign adopted the “cave and commons” approach pioneered by Marvin Minsky at MIT, where a common meeting space determined the shape of windowed offices in the periphery.<sup>14</sup> Most tech companies, however, despite employee complaints, followed the lead of Intel. Intel did not pretend that the cubicle was a great place to be; instead, it pretended that it could foster an egalitarian work environment by insisting that even the staff of upper management work in cubicles, that there should be no “mahogany row” at Intel. Intel used only two sizes and styles of office furniture; as in a kind of state socialism for design, everyone would be starved of beauty equally.<sup>15</sup> Introducing Grove at the Los Angeles Times Annual Investment Strategies conference, reporter James Flanagan described visiting Intel’s workplace in 1996: “Here were cubicle dividers, and behind the cubicle dividers was a desk, a computer, and a man, Andrew Grove. And you looked at that and you thought, well, wait a minute: What kind of business is this?”<sup>16</sup> Another employee, introducing Grove at an Intel International Science and Engineering Fair, said, “Andy has nurtured an egalitarian culture at Intel . . . We all work in a company where Andy Grove’s cubicle—which I think is about eight by nine—is just like everybody else’s.”<sup>17</sup>

Yet Grove’s was a gesture of pure irony. The cubicle had come to represent the exploitation and unhappiness of white-collar workers, not the idea that those modular walls, those tackboards, actually determined anything was patently false. You could hardly be said to copy a cubicle if you could leave whenever you pleased, probably not most of your working hours flying around the country in the company jet, and earned \$100 million a year. This was not, incidentally, a nuance lost on Grove’s employees: his “egalitarian culture” to the employee-constructed Web site FACE Intel (Former and Present Employees of Intel), an enormous blog-like register of com-

plaints about overwork and employee abuse. A quotation from Elie Wiesel headlined the home page (“There may be times when we are powerless to prevent injustice, but there must never be a time when we fail to protest”), and the Web site’s creators were well aware that Grove himself, a Hungarian Jew, had spent the war hiding out in a cellar.

It was this experience, repeated at tech companies everywhere, that prompted much of the hatred of traditional offices that was specific to the Valley in the 1990s. *Dilbert* had made the cubicle the perfect symbol of business callousness in general, revealing how its antihierarchical symbolism only concealed real hierarchies. But many of the Microsoft engineers, all of whom enjoyed private offices, didn’t necessarily feel that having four walls was conducive to good thinking and innovation. Partitioned or not, the design at the big Valley companies was felt to be unexciting; it didn’t seem to correspond to the brave new workplace that was perpetually being promised and was forever out of reach. Something more informal, and yet more thoroughly human, was necessary. In Douglas Coupland’s 1995 novel *Microserfs*, a group of programmers at Microsoft (former art-school students like the author) find themselves disgusted with their evil company and their endless work lives: “the first generation of Microsoft employees faced with reduced stock options and, for that matter, plateauing stock prices.” “I guess,” the narrator concludes, “that makes them mere employees, just like at any other company.”<sup>18</sup> They accordingly leave to found their own company in Silicon Valley. Where their previous Redmond, Washington, company was a corridor-private-office setup (and modeled after the real Microsoft), their new Palo Alto, California, office resembles something more “dorm-like.” And they suddenly find themselves enjoying their work, sliding effortlessly in and out of it, as if it were merely one with their biological cycles. The endless search for venture capital is finally denounced as beside the point by one of the programmers, for whom the work was everything: “I would have come here for *nothing*. I never *had* to get paid,” he insists. “It’s not the money. It’s *never* been the money. It rarely ever *is*.”<sup>19</sup>

Anxiety over the dreams of what many were increasingly calling a “New Economy” and its reality built up an impressive amount of

repressed energy in the Valley offices. The result, as journalist-scholars of the changing workplace like Andrew Ross have noted, was a kind of religious atmosphere, more akin to a Pentecostal revival meeting than the corporate world, where proclamations of the coming insurrection of knowledge workers were issued in thunder. Manifestos began to appear, especially in new institutions like *Wired* magazine, that heralded the coming techno-utopian future. Tom Peters, on the success of yet more dubious books, quit his role at McKinsey and restyled himself as a wild-man business guru, a Timothy Leary of the management world, hailing the new loving and feeling and hearing that was on the verge of coming into rapturous being. If only we would taste what he was tasting, we would know! His titles became increasingly unhinged: from *Thriving on Chaos*, a paean to the junk-bond 1980s that he had helped foster, he arrived at last with *Liberation Management*, a nearly nine-hundred-page tome on the glorious disorder of the “nanosecond nineties.” “If you don’t feel crazy,” he cried, “you’re not in touch with the times! The point is vital. These are nutty times. Nutty organizations, nutty people, capable of dealing with the fast, fleeting, fickle, are a requisite for survival.”<sup>20</sup> It was a new region, Peters said, that had given him religion. “When I worked on *In Search of Excellence*, from 1978 to 1982, my eyes still mostly turned eastward (Detroit, etc.), toward yesterday’s big manufacturers,” he confessed. But Silicon Valley had changed everything, he argued, in increasingly “radical” prose. “I’ve had all of my assumptions about ‘organization’ ripped asunder as I’ve watched the Valley thrive,” he cried. “It has elbowed its way into the planet’s consciousness, largely courtesy of failure after failure after failure (and, along the way, many more than its fair share of successes—mostly by-products of the most exciting failures). It’s instructive to think about how Silicon Valley pulled off its coup: It provides many people with a heavy dose of liberation, and, God knows, it’s disorganized. By living in its midst, I’ve been forced to acknowledge that it’s time to shed—make that shred—the old images.”<sup>21</sup> He went on to praise “non-territorial” offices as part of the liberation—the kind that IBM had tried in the 1970s but that more and more Valley companies were just beginning to experiment with. In the informal office, Peters suggested, lay salvation.

Finally, the heavens opened up, just as Peters had predicted. In the year of Bill Clinton’s reelection, economic growth rates unexpectedly surged, and investors were ecstatic. For years, the fabled promises of the computer age had appeared “everywhere except in the productivity statistics,” as the Nobel laureate economist Robert Solow famously put it. But in the years after 1995, the output-per-hour rate rose 2.8 percent—the delayed result, economists claimed, of investment in IT infrastructure. Soon, venture capital began washing through the industry in great, titanic waves; at its peak in 1999, \$20 million a day was being thrown at companies in and around San Francisco. The money was pouring into Silicon Valley with such Niagara-like force that no one was able to retain the kind of earnestness purveyed in *Microserfs*. Nor, too, did the counterculture put up any resistance. Hackers who had hailed the utopian promise of the Internet now spoke of the utopian promise of their companies. Indeed, the counterculture became the willing accomplice of the New Economy—the marker that made it hip and attracted a whole host of slackers, hitherto unwilling to join, into the willing arms of the dot-com companies. They would make their workplaces into palaces of informality to house the knowledge workers whose time, at last, had come.

Working in the typical dot-com office was an admixture of frenetic pace and a relaxed overall atmosphere, exemplifying that chilled-out anxiety which was the general mood of the 1990s. New Economy offices tended to have a cultivated negligence to them: picnic-table desks spread out at odd angles, piles of paper and crisscrossing wires everywhere, scruffy workers crouched in front of their screens in their pajamas, sporting carefully sculpted bed-head haircuts, while classic rock—the new era’s Muzak—blared overhead. Compared with earlier generations of offices, this one arguably looked worse: more chaotic, less manageable. And the truth was that everything was moving too fast for anyone to design in the thorough way once imagined by Skidmore, Owings and Merrill, with those tilted Mies van der Rohe chairs and wood-paneled partitions siphoning off luxurious offices.

This was not because the programmers didn’t care about design. On the contrary: the dot-commers, the moment they got a little

money in their pockets (and in the 1990s, as many will remember, it didn't take long), tried to scale up their offices as quickly and as painlessly as possible. They needed to plan for an office that could accommodate fifteen people one week and sixty the next. Teams would have to assemble for a quick deadline and then drop everything on a dime to move on to a new project. What they needed was an office that was much like the one Robert Propst imagined thirty years before: an office design that could be changed at a moment's notice; a design that didn't look like design; a design that was "forgiving."

But it had to be forgiving not just to work but also to something more vague and intangible, though inescapable in those years: company culture. The concept was a descendant of the old human relations school of thinking about work. The employees of Razorfish (covered in detail in Andrew Ross's book *No-Collar*) embodied this sort of concern. Razorfish was one of the iconic dot-com Web design firms, having grown from a startup in an East Village apartment in 1995 to, in 2000, a multinational consulting firm, with offices in Boston, San Francisco, San Jose, Los Angeles, London, Amsterdam, Helsinki, Milan, Stockholm, Oslo, Hamburg, Frankfurt, and Tokyo. Proud of their workplace atmosphere, employees there told Andrew Ross that "culture" had to be fostered through permissiveness. One worker called it "the permission to give permission, to yourself and to others" (a formulation she confessed was "hopelessly abstract"). Another more plainly said, "There was the official party line on culture, which was enforced fun, and then there was what we created for ourselves."<sup>22</sup> No one could point out examples of this culture, but they knew what it was not: buying a video game system for the office or having Nerf wars. Nor was it one of the amenity-rich big corporations that the Valley was full of, many of which were Razorfish's clients. They had been there and seen those, with the usual cube farms, empty work relationships, and, worst of all, enforced fun. Office design was important. But rather than legislate a culture, it had to allow one to come into being.

This was not something that designers were necessarily prepared to do. Design is normally the enemy of culture (in the Silicon Valley sense): if something needs to be designed, that means putting

some kind of limit on space and personal or even group expression. Architects and designers were more interested in thoroughly conceived spaces, of putting their marks on the world through a project. Designers like Nelson and Eames, and architects like Mies and Johnson, wanted to convey an entire worldview through their work. But this was too much for the Valley people to handle. They were too arrogant to countenance anyone else's imagination impinging in the slightest way on their own. "When we began working with an outside interior designer," Razorfish's chairman, Craig Kanarick, said in an interview, "the issue was to get stuff done super fast and relatively inexpensively and with some specific functions in mind. That person had her own ideas about what she wanted to express as an artist. I think it's what makes her great as a designer. But it also made it difficult to work with her."<sup>23</sup> And above all, they needed it faster; the speed of design was too slow. "A dot-com client always wants a facility that's faster, cheaper, and better," one design firm principal told *Interiors* magazine. "He's the client from hell." The designer added, wryly, "That's not necessarily a bad thing."<sup>24</sup> In fact, the dot-com era, in its brief period of efflorescence, might have changed design irrevocably—and, many designers were saying, for the better.

Designers stepped up to meet the dot-com model, often by establishing their own departments specifically geared for dot-com clients. These departments developed new ways of working—usually meaning that they worked insane hours—to meet the always-on schedules of the dot-commers. "Image is everything for dotcom companies," a project manager from the design studio Swerve said at the time. "Most of them don't acknowledge old systems of doing business."<sup>25</sup> As a result, designers had to come up with "hip" spaces and furniture, indicating the dot-commers' rebellion against the status quo, while doing it quickly. Places like Swerve came up with designs from scratch: colorful, enamel-covered workstations with boomerang-shaped desks for Evolve, which they managed to produce in eight weeks. They made conference tables that could split in quarters; sidecar tables that could "dock" onto desks when one worker needed an instant powwow with another. For the company Blue Hypermedia, Specht Harman Architects came up with

desks, dividers, storage units, and lighting that could be shuffled into team spaces or separated into private work spaces at will. A series of custom-made, slip-fit metal clamps assisted the assembly and disassembly. All of it had to coexist in a space that was open, the view unfrtered by partitions. In an era when Peter Gibbons tearing down his cubicle wall in *Office Space* had become the most resonant image of workplace rebellion, the open plan was the image of the coming revolution.

There was another rationale to the open plan, which went as far back as the original open plan, the *Bürolandschaft*: the idea of the “spontaneous encounter.” Probst had floated the idea during his development of the Action Office, though it never took hold then. In the dot-com boom, however, the idea that two workers from different departments or on different rungs of the ladder might run into each other by chance and, through the sheer friction of their sudden meeting, combust into a flaming innovation became sanctified as the key to company culture. In traditional offices, according to the dot-com ethos, CEOs were insulated from people lower down through spatial constraints: they were literally cushioned in an executive floor, in an executive suite, and, because they had an executive bathroom, didn’t even run into people in the urinal or the stall. But in the dot-com office, the story went, a chairman might be lightly bonked on the head by a Nerf arrow flying freely through open-plan space, loosed from an engineer’s bow as he careened around on his kick scooter—and, as in the fable of Newton bonked by an apple, thereby discover the secret of the universe. It was yet another spin on the human relations school of management, whereby “culture” could solve any potential conflict in the workplace and produce benefits in productivity.

The emphasis on spontaneity, fraternally connected to the overwhelming emphasis on fun, was eliminating an old—and, many Valley people thought, outdated—distinction between work and leisure. The New Economy offices were infamously some of the most intense workplaces in the United States, but not because people were working constantly. In fact, the work rhythms were largely unscheduled—and that was the danger. With the Internet providing inexhaustible modes of distraction, alongside its growing

bounty of pornography, work tended to stretch out over hours. The dot-commers would work for twenty minutes, take a coffee break, go back and work for an hour, run to the gym, sprawl out in the company lounge and look at Webzines for an hour or so, head back to their computer for more work, order dinner, play video games, and so on, until some sixteen hours had passed, much of it spent sitting in front of a computer.

It was for precisely this posture that Herman Miller produced the Aeron chair in 1994, the most powerful symbol of the dot-com bubble. Designed by Bill Stumpf—hitherto famous for designing the Ergon chair, the first ergonomic chair for the office—and Don Chadwick, the first version of the Aeron, the Sarah, was originally intended for the elderly in nursing homes who had otherwise been content with the traditional La-Z-Boy. But the Sarah was too futuristic and expensive for anyone to consider using in a nursing home. Getting rid of the foam cushions that they had used in the Sarah, they stripped down their new chair into a basic woven-plastic-and-fabric mesh. What had originally been designed to prevent bedsores would now protect the sore asses of engineers. It was practically the first ergonomic chair without cushioning—and it sold for \$750. It was a phenomenon. Companies bought it by the boatload; an entire episode of the show *Will & Grace* was devoted to Will’s attempt to get an Aeron chair. But its success was a sign not of the endless mobility and freedom of the dot-com office but of its simultaneously lackadaisical and profoundly intense pace, which kept people essentially confined to one place for hours on end.<sup>26</sup>

Workers were motivated not only by the money, though, but also by the famous company culture, the widespread practice of making dot-com workers feel as if they were artists, autonomous and free. As long as workers believed they were creating something new, and that they were doing a new kind of work, not for others, but for themselves, it was easier to work long hours. Though Silicon Valley in the dot-com years embodied this ethos in its purest form, it was something that well exceeded its geographic and corporate cultural boundaries. Arlie Russell Hochschild’s study *The Time Bind* (1997) had shown how the changing dynamics of corporate culture at a Fortune 500 company—“autonomous” work teams and



the rest—encouraged workers to seek the satisfactions of family life increasingly at their companies. They posted longer hours at the office than they did at home. Though Whyte had warned against the tendency of office life to incorporate family life, he had not anticipated the unraveling of the nuclear family. Stepping up to take its place was the office.

Business books had advocated a more familial office environment since the 1980s; Peters and Waterman had connected it to upholding the autonomy of lower-level workers and had encouraged collaborative teamwork. Typically, they had given it an unintentionally Orwellian spin, by calling it the “illusion of control.” “If people think they have even modest personal control over their destinies,” they wrote in *In Search of Excellence*, “they will persist at tasks. They will do better at them. They will become more committed to them . . . [T]hat we think we have a bit more discretion leads to *much* greater commitment.”

□

The idea for the most audacious office experiment in the dot-com era arose, the story goes, at Telluride. Jay Chiat, then sixty-two, was mid-slope, careening skillfully through fresh powder, when he came to his realization. Technology had made the old office obsolete; it was time to use that technology to create the office of the future. By the time he reached the bottom, he had come to a decision. His office would have to go through a fundamental change in the way it did business.

Perhaps it was the speed he was going at—gravity pulling at his skis like fate—or the sheer hubris he had accumulated over a lifetime of accolades. Perhaps it was both. With his blinding white hair, implacable gaze, and fidgety manner, Chiat was an immediate presence in any room. And he had the characteristic impatience and restlessness of a man who constantly felt that he was surrounded by stupid people. Like the classic admen—Dowd, Ogilvy, Bell, Bernbach—he tried his hardest to be effortlessly quotable; his lines had the added benefit of sounding imperious and authoritarian. “Taking risks gives me energy.” “Don’t be afraid of failure unless

you’re working for me.” “Money hasn’t changed me. I’ve always been an asshole.” The staff of his agency, Chiat/Day, liked to compile gems like these into an in-house book: *Quotations from Chairman Jay*. When entering a presentation, he immediately launched into critiques. “This doesn’t hang together,” he would say. “You don’t have one single idea.” “He would terrorize people,” a former vice-chairman was quoted as saying. “When things were going well, he would walk around the agency complaining, moaning and abusing everyone.” Chiat clearly had a touch of Steve Jobs (“the quickest study I’ve ever met,” Chiat said of Jobs, though, in a classic case of the pot calling the kettle black, he also called Jobs “moody and erratic”).<sup>27</sup> Both had the habit of counting on vast teams of people whom they were relentless in pushing as hard as they could. And Chiat reportedly forced ads down his clients’ throats, gagging them until they cried uncle. Some of those clients became ex-clients.

No matter what you thought of him personally, he had been successful. Chiat/Day, Chiat/Night, his employees called it—because they worked at all hours to make what became the most iconic ads of the 1980s. His company had created the Energizer Bunny (*it keeps going and going and going . . .*); it had done the famous “1984” Super Bowl spot for the first Apple Macintosh, in which a female American athlete hurled a sledgehammer at a gigantic screen on which Big Brother was delivering his latest motivational lecture. His ads glittered with a veneer of erudition and intelligence, of being in the know. According to one associate, the “roiling stew” of his ads might consist of “a dash of Moby, a sprinkling of Sontag, and bits of Lenin and Lennon, served on a dish designed by Walter and Margaret Keane”—thus, the associate went on, had Chiat moved advertising “into the postmodern era.”<sup>28</sup> In 1990, the industry trade magazine *Advertising Age* had crowned Chiat/Day “the agency of the decade.” Chiat had been fast in other respects too—adopting the cubicle in his L.A. offices earlier than most. Despite the growing bad feelings about the cubicle, it hadn’t hurt Chiat/Day’s business: on the contrary. Jay Chiat and his company had done everything right. Why change it all now?

It turned out things weren’t right after all. The downturn of the early 1990s had been hard on Chiat/Day. It lost two big clients,

Shearson Lehman and American Express. It closed its San Francisco office. It hired a big adman, Tom McElligott, and lost him nine months later. To recoup losses, it sold an Australian ad agency it had acquired in 1989. Its creative powers were apparently suffering too. *Advertising Age* had been scathing about some commercials for Benetton: “so very mundane, very Fox TV, very Sherman Oaks,” it said; the ads reeked of “adolescent sniveling.”<sup>29</sup> By 1993, snow-bound in Telluride, Chiat knew it was time for a shake-up. And Chiat was sure his office was the problem.

Offices, Chiat thought, are ruined by politics. People become obsessed with each other rather than the work. They defend their privileges over the needs of other people; their status over genuine space requirements. Higher-ups hide in offices when they should be out on the floor; lower-downs get stuck in noisy open floors when they sometimes need a room to concentrate. The office, Chiat argued, had become the site of a turf war, not a place to do work. Changing the office “means focusing on doing great work instead of focusing on agency politics,” he argued. “You come to work because the office is a resource.”<sup>30</sup>

Chiat had already revolutionized his offices once before. In 1986, he had hired the architect Frank Gehry, then floundering after an early critical success de scandale with his Santa Monica home, to design his agency offices in Venice, California. Working with the inescapable, and inescapably arch, Pop artist Claes Oldenburg, Gehry produced one of Southern California’s iconic buildings, whose focal point was a giant pair of binoculars. (Each “eyeglass” housed a conference room.) The layout was unusual, with pizza parlor booths for informal meetings, trash-can lids directing the light from ceiling lights, and all around Jay Chiat’s sterling collection of contemporary art. Opening in 1991, it was “the Oz of offices,” *New York* later said, turning Frank Gehry’s career around and becoming one of the grandest of work spaces—appropriate to an agency that had ruled the decade before it. And yet Chiat still continued to carp and whine, complain and moan. It wasn’t enough. And the agency was no longer doing well.

In November 1993, at an *Advertising Age* conference in New York, Jay Chiat announced his new plan: the walls, desks, and

cubicles were going. So were the desktop computers and the phones. Anything that anyone might have once called “theirs” was gone. He called it a “team workshop,” but everyone else called it a “virtual office.” The work had been “deterritorialized.” Everyone would be given a cellular phone and a laptop computer when they came in. And they would work wherever they wanted. According to Adelaide Horton, the chief operating officer of Chiat/Day, people would naturally work in teams, and the teams would work in conference rooms—or, as Chiat/Day preferred to call them, “strategic business units” (which sounded suspiciously like the “strategic hamlets” of the Vietnam War). If anyone was carrying personal effects—like pictures of his dog or family, or plants—he would be kindly requested to place them in a locker of his choosing. It sounded to some like high school. For Chiat, he saw it as more like higher, rather than secondary, education, and it was all to avoid the childish atmosphere of primary school. “We’re trying to structure things more like a university, rather than an elementary school. Most businesses are run like elementary schools—you go to work and you only leave your office when you have to go to the bathroom. That sort of thing breeds insularity and fear, and it’s nonproductive. The important thing is to focus on what kind of work you do.”<sup>31</sup>

Chiat’s office plans became the talk of not just the industry but the entire world of business. Coming from a bold agency, and a bolder chairman, it seemed like the most exciting move that an office could possibly make. It was the roof, the zero degree of offices: this far, and no further, could the radical office go. “Thoroughly armed with the modern weaponry of the road warrior,” *Time* magazine wrote breathlessly, “the telecommuters of Chiat/Day . . . are among the forerunners of employment in the information age.”<sup>32</sup> Soon everyone was talking about the possibilities of making their offices virtual. Ernst & Young established a “hoteling” service in its Chicago office, where traveling workers, who were out most of the time anyway, found a desk if and when they came in. Cisco Systems and Sprint also began experimenting with the “virtual office.” No attempt, though, was more thoroughgoing than Chiat’s, and he didn’t hesitate to trumpet its eventual success as the future of the office. He also convinced, or perhaps bullied, everyone at the firm

into accepting the idea, despite their objections to the lack of private space. It would have been a mistake to see the changes as cost cutting, which some had accused Chiat of doing, because none of it came cheap: buying all the new computers and phones and furniture took much more money than Chiat/Day could really afford. But the vision of a new workplace was more powerful than any anxious glance at a balance sheet, let alone a finance officer's querulous whining.

The furniture came first. As promised, the office walls came down, along with the lighter cubicle walls. In their place were couches and tables in common areas, like in a rec room. Lockers were color coded red, green, black, and blue (Chiat's designer, Gaetano Pesece, had a penchant for garrish colors). Most famously, Chiat had Tilt-A-Whirl domed cars installed, which had been taken from a defunct amusement park ride, for two people to have private conferences. They became the only place where people could take private phone calls.

Within a year, the experiment was going awry. As *Wired* reported during the fallout, the office politics that Chiat thought his experiment would expel came back in a new and even more aggressive form. Anything that could have gone wrong went wrong. People arrived and had no idea where to go, so they left. If they stayed, they found there was nowhere to sit; there were too many people. Not allowed to leave anything out on the collective tables—especially not paper (Chiat insisted that the office had to be “paperless”), they stuffed unfinished work in their lockers. The lockers turned out to be too small. People used their car trunks instead. (One employee used a toy wagon to cart her stuff around.) It turned out Chiat and his designers had miscalculated how many computers or phones they would need (and the agency couldn't afford more). People who lived nearby would arrive early, stash their computers and phones in a locker, and catch a couple hours of sleep before starting work. Sometimes they'd sequester them overnight to be sure to have work in the morning. People began playing hooky. Managers couldn't find their staff. No work was getting done. It was a disaster. In 1998, the experiment was declared over—a more traditional, or at least less chaotic, decision would be commissioned.

In an interview with *Wired*, Chiat conceded few mistakes. There should have been more computers, he agreed. But he was right about privacy, he argued, right that the virtual experiment was the future. It was, he said, “the only thing I ever did in business that I was satisfied with.” The moral of the Chiat/Day story was so simple that Chiat himself was unable to draw it. In almost comic accordance with his personality, Chiat had been prescient and willful, egalitarian and autocratic, all at once. His experience in advertising had led him to believe that people should be pushed to achieve nothing short of excellence and that no one was better qualified than himself to judge whether they got there. In the name of upending hierarchies, he hierarchically instituted an egalitarian system whose fundamental truth only he was positioned to recognize. In a classic case study in unintended consequences, the experiment failed, and the subjects of the experiment came to be blamed. You can't have egalitarian offices, it was said, because people aren't set up for them. Some are fit to rule, and others to be ruled: hierarchy alone is natural. “Deep down, we're all still cave dwellers,” one survivor of the experiment said. And Chiat blamed the desire for a corner office as the culprit: “We all have been taught the desire for a corner office is a badge of success. It's difficult to change that.” Despite the revolutionary air at the end of the millennium, it was impossible to ask whether the office workers themselves should be consulted, whether they had ideas about how a workplace should be run. Under this rubric, the last people who knew anything about anything were the knowledge workers.

Chiat/Day cleared out of its offices in September 1998 and moved into a different space. Two years later, the Nasdaq crashed, and the dot-commers began vanishing one after the other. There was little money left to be spent on fancy offices, and it seemed that the heady experiment of the 1990s was over and the office of the future was dead.