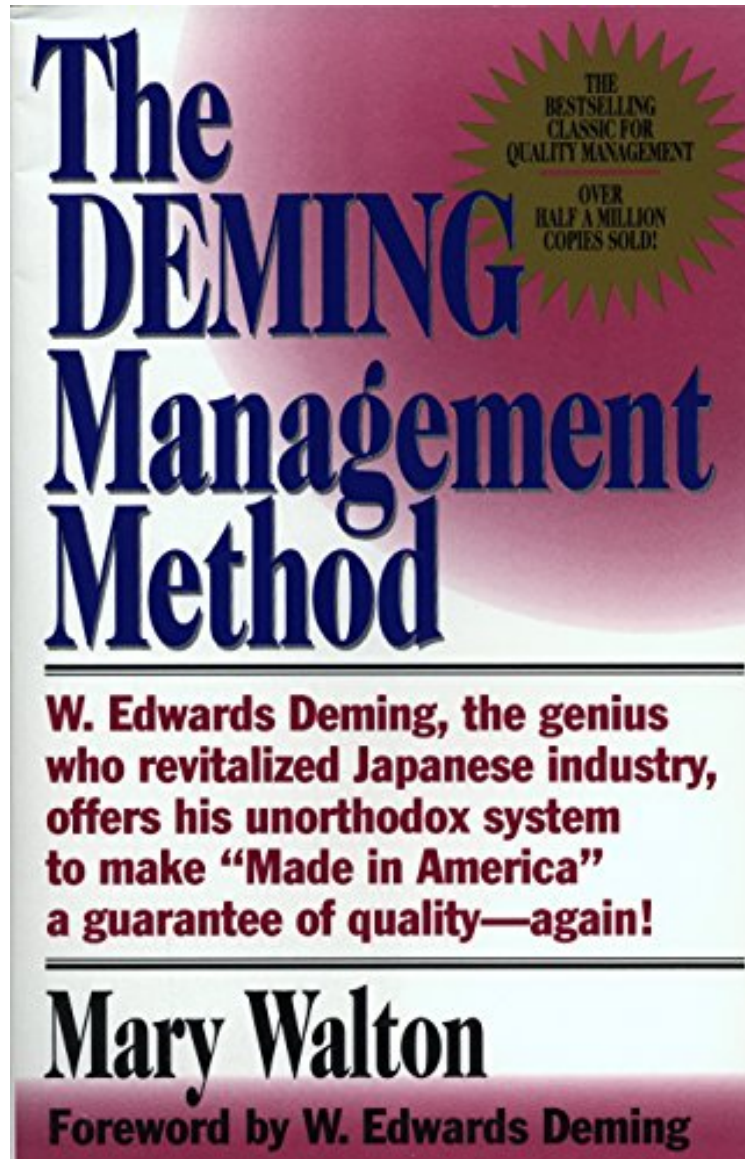


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## The Deming Management Method: The Bestselling Classic for Quality Management!

Mary Walton

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**Mary Walton : The Deming Management Method: The Bestselling Classic for Quality Management!** before purchasing it in order to gage whether or not it would be worth my time, and all praised The Deming Management Method: The Bestselling Classic for Quality Management!:

1 of 1 people found the following review helpful. Deming Management MethodBy NEdExcellelent reading. If only the right people would read what this Mr. Deming is willing to share. I keep buying these because I keep giving them

to others to read. It all makes perspective important to success. Fantastic Thinker. Deming identifies the problem areas in the workplace, his words remove the fog of authority and defines accountability and responsibility of those who control the quality through effective application of logic and personal drive. Again, Excellent information that makes understanding management's position separated from the influences affecting operational objectives. Get it and read it without bias, learn how to identify those that think things out and those that are winging it from day to day. Management AND labor. Mary Walton makes reading a pleasure. 0 of 0 people found the following review helpful. Quality is Job 1 By OrangeOkie This is a very entertaining and profitable description of the story of the Great Deming story. It follows the history of noteworthy Deming successes like the post war re-building of the Japanese economy, from cheap junk into a world leader in technology and quality. I am a fan of the muscle car era of the American automobile, until the federal government ruined the entire industry with environmental regulation, resulting in the worst automobiles ever. Then Deming comes to the rescue and brings out Ford and "Quality is Job One." I was fascinated how Motorola followed Deming's lead to the highest quality in the business, by eliminating inspections. Amazing. This is a great read to help you understand what is quality and how it is achieved in business. 0 of 0 people found the following review helpful. and yes I am coming at you with a certitude of watching Zenith audio - video and Munsingwear undergarments and Hathaway shirts (By Gary TI have little respect for any business professor today since they cannot see the difference between the short and long term impact of algorithms measuring quality, pricing, and customer service. Greed has superseded rationale management ...especially those idiots that moved from CFO to CEO etc. Deming could see the forest through the trees and Six Sigma has no soul and it bites most manufacturers rather than helps.... and yes I am coming at you with a certitude of watching Zenith audio - video and Munsingwear undergarments and Hathaway shirts (the best value of the white shirt era) generally disappear; Motorola stumble, Roger Smith destroy GM (and Robert Lutz barely succeed because of an unbridled ego and bias..not unlike BP's Tony Hayward and the infamous Texans like the Koch Brothers ).

Whether you're the owner of our own small business, a middle manager in a mid-sized company, or the CEO of a multinational, this book can show you how to improve your profits and productivity. How? By following the principles of The Deming Management Method. Middle- and top-echelon managers in particular will find Dr. Deming's method provocative and controversial. He is for a total revamping of the way American managers manage. Some of his pet peeves are: managers who manage by slogans or by setting quotas, managers who don't know what their jobs are and who can't define the responsibilities of the workers under them, managers who tend to blame workers, not realizing that workers want to take pride in their work. Change, Dr. Deming believes, starts at the top with an informed, quality-conscious management. This book includes excellent advice on how to achieve that level of management expertise in the author's analysis of Dr. Deming's famous 14 Points for Managers and his Deadly Diseases of management. Dr. Deming's management techniques are all carefully explained in this detailed, step-by-step treatment of their major points and of their practical applications to everyday business life. A large portion of The Deming Management Method is devoted to practical applications of the method by some of America's most innovative firms, including Honeywell, ATT and Campbell's Soup.

"I'm proud to say I'm a Deming disciple, and we at Ford are committed to his operating principles, particularly the ethic of continuous improvement and the involvement of all employees." — Donald E. Petersen, Chairman of the Board (retired), Ford Motor Company "W. Edwards Deming is to management what Benjamin Franklin was to the Republican conscience — a guide, a prophet, an instigator. Here in one book is an incisive summary of his wisdom." — Robert Reich, former Secretary of Labor About the Author Mary Walton worked as a journalist for the Philadelphia Inquirer for more than 22 years. She has also written for the New York Times, Washington Post, Harper's Magazine, and other publications. Walton lives in Philadelphia, Pennsylvania. Excerpt. copy; Reprinted by permission. All rights reserved. THE DEMING MANAGEMENT METHOD by Mary Walton FOREWORD BY W. Edwards Deming Foreword by W. Edwards Deming Why is Western industry on the decline? Why has the balance of trade of the United States of America deteriorated year by year for twenty years? The deficit in export of manufactured goods is worse than the overall figures indicate, as export of agricultural products has been on the increase. We have people; we have natural resources, experience. Why the decline? The cause of the decline is that management have walked off the job of management, striving instead for dividends and good performance of the price of the company's stock. A better way to serve stockholders would be to stay in business with constant improvement of quality of product and of service, thus to decrease costs, capture markets, provide jobs, and increase dividends. In the decade after the War [the Second World War], the rest of the world was devastated. North America was the only source of manufactured products that the rest of the world needed. Almost any system of management will do well in a seller's market. Success in business in North America was confused with ability to manage. Management in America (not all) have moved into what I call retroactive management: focus on the end-product — look at reports on sales, inventory, quality in and quality out, the annual appraisal of people; start the statistical control of quality and QC-Circles for operations,

unfortunately, detached from management's responsibility; apply management by the numbers, management by MBO. [Management By Objective], work standards. The follies of the systems of management that thrived in the expanding market that followed the War are now all too obvious. They must now be blasted out, new construction commenced. Patchwork will not suffice. Everyone doing his best is not the answer. Everyone is doing his best. It is necessary that people understand the reason for the transformation that is necessary for survival. Moreover, there must be consistency of understanding and of effort. There is no substitute for knowledge. A conjurer may pull a rabbit out of a hat, but he cannot pull quality out of a hat. The biggest problem that most any company in the Western world faces is not its competitors, nor the Japanese. The biggest problems are self-inflicted, created right at home by management that are off course in the competitive world of today. Recognition of the distinction between a stable system and an unstable one is vital for management. The responsibility for improvement of a stable system rests totally on the management. A stable system is one whose performance is predictable. It is reached by removal, one by one, of special causes of trouble, best detected by statistical signal. Understanding of a stable system discloses devastation of people wrought by the annual appraisal of performance, futility of management by the numbers, management by MBO. A numerical goal that lies beyond the bounds of capability of a system will not be reached except at the expense of some other activity in the company, thus, in the end, raising total cost to the defeat of the company. Teamwork in a company, except for putting out fires, is impossible under the existing annual appraisal of performance. Everybody, once the fire is conquered, goes back to his own life preserver, not to miss a raise in pay. It is a pleasure to commend this book by Miss Mary Walton to readers that wish to study her point of view on the theory and examples that guide my work and form the content of my seminars and my book *Out of the Crisis* (Center for Advanced Engineering Study, Massachusetts Institute of Technology, 1986). The applications, examples, and comments that she provides will be especially appreciated by her readers.

Washington March 10, 1986 Preface I first heard of W. Edwards Deming on a trip to Japan several years ago to research a story on workers at Kawasaki Heavy Industries, Inc., which had won contracts to build trolley and subway cars for the Philadelphia mass transit system. It never occurred to me at the time that the American who had taught the Japanese statistical quality control and principles of management after World War II was still living. Indeed, I supposed that he had died shortly after educating the Japanese. Otherwise, he would surely have been famous in this country as well. I was therefore surprised to learn in 1984 that Dr. Deming was coming to town. He had been retained by the Greater Philadelphia Chamber of Commerce for a four-day seminar in March of that year. I was assigned by my employer, *The Philadelphia Inquirer*, to write a profile. Dr. Deming was not only very much alive, but was in rare form when I met him for the first time on January 19, 1984. He was in Philadelphia that morning to give a speech in advance of his March booking, after which his schedule called for an immediate departure for San Diego. I was headed for San Diego as well, to take his seminar there as part of my research. His delightful and protective secretary, Cecelia ("Celer") Kilian, had turned down my request to travel with him, and my flight left later than his. After the Philadelphia speech, in which he soundly scolded his audience of executives for their poor management practices, Dr. Deming himself invited me to travel with him to San Diego. I quickly changed my plane reservation and off we went. He traveled with only a large briefcase and an inexpensive tan canvas shoulder bag. I remember watching him in the airport as he made a phone call, then pulled a train schedule from his pocket and nearsightedly consulted the pocket-size date book he lived by, jotting down arrangements for an engagement a year hence. The Deming profile that appeared on March 11 in the newspaper's Sunday magazine, *Inquirer*, drew more response than any piece I'd written in fifteen years of reporting. People wanted to know how to reach Dr. Deming, where to buy his book, how they could attend the seminar. We ran out of copies of the magazine article and then of reprints as well. When later I proposed doing a book on his method, Dr. Deming replied that he would help in any way he could. Over the next year or so, I visited him on weekends at his Washington home near the Maryland line, treading the flagstone path that led past the big holly tree down to the basement entrance of his office. As he sat at his big blond desk, around the corner from the washer and dryer, he was surrounded by a lifetime of books, journals, curios, and awards. If time permitted after we talked—or rather, after he talked and I listened—there was lunch or dinner with him and sometimes with his wife, Lola, and other guests at his beloved Cosmos Club near Dupont Circle, where popovers and catfish were a specialty. Dr. Deming would order hazelnut ice cream all around, without even asking. Usually he piloted a stately white 1969 Lincoln Continental; its black seats exuded a rich leather smell. Once we took the bus. He was a fan of public transportation. "I ride for twenty-five cents," he said with satisfaction in one of the few references he ever made to his advanced age. (During the course of researching the magazine article, I had inquired obliquely whether he was worried about who would carry on his work. "I'm all right," he answered tersely.) I found him in all respects to be a kind and thoughtful individual, if occasionally impatient at his student's failure to immediately grasp his conclusions. Dr. Deming was good enough to read and comment on many chapters of this book, particularly on those dealing with the Fourteen Points and the Seven Deadly Diseases, and to make available the unpublished manuscript of his forthcoming book, *Out of the Crisis*. He also provided journals of his early trips to Japan. We traveled as well to several of his clients, and he supplied introductions to others. The companies that had turned to Dr. Deming's method shared a sense not only of urgency and commitment but also of optimism and excitement. Suddenly, there was a new philosophy that

promised answers where none had previously existed. Trained to gather and interpret data, their problem-solving teams were like detectives turned loose with a new sheaf of evidence. At last they had the ammunition to eliminate long-standing glitches in their processes, and they went after them with the enthusiasm of crime-stoppers. Show the slightest interest in their work, and out would come sheets of numbers and stories of misinterpreted clues and, finally, success. Probe a little more into the psyche of the employees, and their stories would bring tears to your eyes: what it meant to be taken seriously rather than to be treated with disdain. To be sought out for one's knowledge and to be asked to contribute to the future of a company. To want to go to work. I heard, too, from executives who had discovered how pleasant it is to share responsibility—and to sleep better at night. How good it is to know their employees respect them. And to know that these feelings of satisfaction come at no cost to profits and productivity. Just the opposite—their companies were doing better than ever before and saw no end to the improvement. These ventures into the American workplace showed clearly that whether the product is hardware or service, whether the company employs two hundred or two hundred thousand, Americans still care about quality. The country is full of intelligent, courageous people who would change if they only knew how.

In Part Three, *Making Deming Work*, I sought to report from the factory floor—or the office cubicle, as the case might be. I wanted to talk directly to the people involved in the change and to find out exactly what had taken place. I wanted to deal with specifics rather than generalities. Wherever I went, I found the same kinds of problems and the same human reactions. An executive who thinks his or her company is different from the ones in this book—who says “We don't have those problems” or “That doesn't happen here”—doesn't really know what's going on, hasn't really talked to the company employees in an atmosphere free of fear. By the same token, although evidence presented here of the Deming method's success is anecdotal in nature, to borrow a term from medical research, it would be a mistake to interpret it as atypical. The Deming method will work anywhere. It is universal. The question arises, *Is America ready? Must we continue the precipitous decline of our value-added economy, living on borrowed time and borrowed money and throwing up protectionist barriers, until we reach the cataclysmic state that more and more experts believe is inevitable? Must it be that only then our businesses and corporations will be prepared to accept a radically different style of management? Or can we act now?*

**Acknowledgments** Aside from those people whose contributions are evident in the writing, there were several whose keen understanding of the Deming method added significantly to my own. In this regard, I cannot thank the people of GOAL (Growth Opportunity Alliance of Greater Lawrence) enough for their generous help, particularly Director Bob King, for his suggestions, knowledge, and good humor, and statistician Diane Ritter, for holding my hand through histograms and control charts, and for her hospitality as well. In Philadelphia, Mary Ann Gould was indispensable. So, too, was Brian Joiner, who gave of his time, insights, and considerable expertise during his trips to the city. At the Greater Philadelphia Chamber of Commerce, I am grateful to Rick Ross for his encouragement and to Rosalie DiStasio for keeping me abreast of developments. Friends helped beyond measure. I thank Peggy Anderson for guidance, Bob Schwabach and Don Drake for general support and expertise with word processors, and Beth Gillin, Jane Marie Glodek, Ellen Karasik, Ron Cole, Bill Eddins, Patsy McGlaughlin, and Jane Barr. For their interest and companionship during the long and vexing newspaper strike when this book was completed, I am grateful to my union colleagues Bill Barry, Kitty Caparella, Rick Tulsy, Lila Roisman, and others on the Newspaper Guild negotiating committee. I am also grateful to David Boldt, editor of *The Philadelphia Inquirer Sunday* magazine, both for assigning the story that led to this book and for a happy, long-standing editor/writer relationship. All the people at the magazine, where I work, were a constant source of good cheer. Sally Downey, his assistant and my friend, was wonderful. My gratitude as well to Dr. Deming's devoted secretary, Cecelia Kilian, who put up with my many calls. Artist Carol Estornell gave both elegance and coherence to the illustrations in this book. Harold Tassell, Jim Naughton and Katherine Hatton gave important advice. Finally, my love and thanks to my darling daughter, Sarah, for her patience and understanding; to my father, Joseph Vogel, to my stepmother, Lucia Yu, and to my mother, Mary Vogel, who did not fail me.

**PART ONE**  
**EDWARDS DEMING—THE MAN AND HIS MISSION**

**Chapter 1** *W. Edwards Deming: A Biographical Note* Born on October 14, 1900, William Edwards Deming is as old as this century. He was sixteen when the United States entered World War I, and forty-one when the Japanese bombed Pearl Harbor. He was in his fiftieth year when Japan, its economy staggering from the effects of war, decided it needed the help of a “foreign expert,” and he was in his eightieth when NBC featured him on a broadcast entitled “If Japan Can't We?” and he was, at rather long last, discovered in his homeland. He grew up on a Wyoming homestead during the period when irrigation was taming the Wild West and transport was by horse and buggy. His work has taken him to the frontiers of technology. Few have lived through so many important eras in history. The son of a man who was trained in the law and a woman who studied music, he is named for them both: His father was William Albert Deming and his mother, Pluma Irene Edwards. From his father he derived a penchant for scholarship; from his mother, who had studied at Oberlin College's conservatory of music, a love of composition. In the early 1900s, William Deming, Sr., moved his family from Sioux City, Iowa, to Cody, Wyoming, where he had a business arrangement with an attorney. He and Pluma had two small sons by that time, William and Robert, who was a year younger. Cody had been named for Buffalo Bill—William Frederick Cody, the colorful nineteenth-century army

scout and buffalo hunter and the organizer in 1883 of "Buffalo Bill's Wild West Show." The Demings lived in a small house on the grounds of the Irma Hotel, named for Buffalo Bill's daughter, and Buffalo Bill himself would put in frequent appearances. The two boys were entranced by the long-haired, mustachioed blond showman. Robert Deming remembers visiting an aunt in Los Angeles when Buffalo Bill brought his show to town. The aunt and her two charges elbowed their way to the front of the crowd, and Buffalo Bill recognized the two boys from his hometown. In 1906, William Deming moved his family to nearby Powell, Wyoming, named for John Wesley Powell, a one-armed geologist who had surveyed the Colorado River, passing by boat through the Grand Canyon, a hazardous feat. The town of Powell had been targeted for a reclamation project and was opened to homesteaders. A three-hundred-foot dam was being built astride the sulfurous Shoshone River—the name is Crow Indian for "stinking waters." At the time, it was the highest dam in the world. The town of Powell was in on the Shoshone irrigation project, and William Deming filed a claim for a forty-acre homestead on the edge of town. He moved his law library and his wife's Steinway parlor grand piano into a tarpaper shack and proceeded to farm while his wife taught music and voice. They could have claimed an eighty-acre site farther away, but in truth, William Deming was not all that enthusiastic about tilling the soil. As a child, Robert Deming remembers hearing his father explain to a friend the difference between a farmer and an agriculturalist: "A farmer makes his money on the farm and spends it in town. An agriculturalist makes his money in town and spends it on the farm." Said William Deming, "I'm an agriculturalist." The family kept a cow for milk, chickens for eggs, and a garden for vegetables. As Powell grew, William Deming built up a business selling insurance, real estate, and legal services. He had a reputation for writing contracts that could not be broken. Those early years were difficult, particularly for Mrs. Deming. There was neither electricity nor indoor plumbing. "I remember," Dr. Deming wrote in a note to the author many years later, "my mother, taking my brother and me by the hand, prayed for food. . . . Our house in Powell, [from] roughly 1908 to 1912, was a tarpaper shack about the size of a freight car. Snow blew in through cracks in the door and in the windows. There would be accumulations in the morning." Sometimes the \$1.25 that William Edwards earned doing chores in the local hotel was all the family had. He made ten dollars per month for years lighting the five gasoline streetlights—then four after a team of runaway horses demolished one. In 1909, there arrived a daughter, Elizabeth, the first baby born in Powell. She, too, remembers the poverty. "We didn't have much, but nobody had anything," she said, and added, "there wasn't anything there." In time, however, as William Deming's business prospered, their situation improved, and they moved to better and better houses, each "more pretentious than the other," as brother Bob quipped. Powell, although poor, was more peaceful than Cody, yet, in spirit, still part of the Wild West. Dr. Deming remembers his mother once waking him to see Cody in the distance, apparently on fire. They later learned that eleven saloons had gone up in smoke. Edwards, as he was called to distinguish him from his father, was by his own account a well-behaved and studious child who earned the nickname "the professor" for his diligence. When a dozen of his peers ran away from home, albeit briefly, he was not among them. Each evening his father would ask what he had learned in Powell's one-room school that day. One treasured family anecdote is the story of Edwards's attempt to volunteer for the National Guard, which was engaged in a skirmish on the Mexican border. The entire town had a farewell dinner for its enlistees; young Deming was among them. His sister pressed a ten-cent chocolate bar upon him, a valuable commodity at the time, but he nobly refused to take it. He left on the first leg of the journey, a train ride to Cheyenne. In short order he was back, rejected for being too young. He was fourteen at the time. Camping and fishing were among his passions. He could always, brother Bob said, be counted on to provide fish for a meal. As a teen-ager, Edwards was "never a partier, never a girl chaser." He went to the dances but not, in a euphemism for racy behavior, "to the show." In 1917, W. Edwards Deming took the train from Powell to Laramie to begin his education at the University of Wyoming. He arrived several days early so he could find a job. "He always worked," said Elizabeth. He became a janitor at twenty-five cents an hour and later would recount how, in his inexperience, he had spread soapy water across a floor, then left it in that treacherous state, expecting it to dry on its own. He shoveled snow, cut ice, and worked as a soda jerk. But he also sang in the choir and played the piccolo in the university band. After he graduated in 1921, he remained a year for additional studies in mathematics, and he taught engineering—albeit very badly. How could I do otherwise? I didn't know very much." He taught physics the following year at the Colorado School of Mines, then enrolled for a master's degree in mathematics and physics at the University of Colorado. There he courted and married a young schoolteacher named Agnes Belle in 1923. They adopted a daughter, Dorothy. In 1924, a professor encouraged him to continue his studies at Yale. There he got his Ph.D. in physics. In the summers, he worked on transmitters at Western Electric's legendary Hawthorne plant in Chicago, the site of Harvard researcher Elton Mayo's experiments on the relationship between working conditions and productivity. There, a workforce of forty-six thousand—most of them women—turned out telephone equipment in a sweatshop environment. Early on, the young man had been warned by a colleague to stay well away from the stairway when the whistle blew at the end of the day. "Those women will trample you to death," he said. "There won't even be an oil slick." Dr. Deming was sympathetic. "It was hot. It was dirty. No wonder they wanted to get out." Some of his ideas about

management are rooted in his experience at Hawthorne, where the workers were paid by the piece and docked if it failed inspection. "Piecework," he says today, "is man's lowest degradation." In 1927, Dr. Deming turned down job offers from private industry, including one from Bell Laboratories, to work for the U.S. Department of Agriculture in the fixed nitrogen laboratory, which had done pioneering work during World War I. He was intrigued by the opportunity to study nitrogen and analyze its effect on crops. In 1930, after seven years of marriage, Agnes Deming died. Dr. Deming two years later married Lola Shupe, a mathematician who had come to work for him. Together they authored several papers on the physical properties of gases. His second daughter, Diana, was born in 1934 and his third, Linda, in 1942. While Dr. Deming was at the Department of Agriculture, one of his colleagues introduced him to Walter A. Shewhart, a statistician at Bell Telephone Laboratories in New York. Shewhart, a soft-spoken but probing scholar, had developed techniques to bring industrial processes into what he called "statistical control." Shewhart had defined the limits of random variation in any aspect of a worker's task, setting acceptable highs and lows, so that any points outside those limits could be detected and the causes studied. Workers could be trained to do this charting themselves, giving them greater control over their jobs and allowing them to make adjustments on their own. Shewhart's genius, Dr. Deming would often say, was in recognizing when to act and when to leave a process alone. For several years, Dr. Deming traveled regularly to New York to study with Shewhart. Shewhart's theories of quality control would become the basis of his own work. Elsewhere in the government, in the census bureau, a debate was raging over the new techniques of sampling that were being used in federal agencies, including in the Department of Agriculture, where Dr. Deming was becoming known as an expert. He had studied the theory of statistics with a famous British professor, Ronald Fisher, and had sought out other scholars to give lectures and seminars for himself and his colleagues. The 1940 census was approaching. In previous censuses, every individual had been polled, a process that was "complete but abhorrent," as Dr. Deming put it, because it was so incredibly time-consuming. But the idea of sampling was extraordinarily controversial. The bureau's conservatives were mistrustful of it, but there was pressure from others for more information than could be provided by 100 percent surveys. Dr. Deming would say later that "sampling was in the air." Not long after Secretary of Commerce Harry Hopkins decided in favor of sampling, the phone rang in Dr. Deming's office. It was a request from the census bureau for him to take charge of the new sampling program. Dr. Deming accepted immediately. Acting on his mandate, he developed sampling techniques that were used for the first time in the 1940 census. As a sideline, using what he had learned from Shewhart, Dr. Deming was also able to demonstrate that statistical controls could be used in clerical as well as in industrial operations. It could be shown, for example, that the error rate of card punchers dropped markedly with training and expertise, making it necessary to inspect only a third of their work. Dr. Deming speaks of those years at the census with relish. "We did a great many things that were novel and new." In 1942, during World War II, his services were sought by W. Allen Wallis, a professor at Stanford University. Wallis, later to become an undersecretary of state, inquired in a letter to Dr. Deming whether there was some way that Stanford might be able to contribute to the war effort. Dr. Deming immediately responded with a four-page proposal for teaching the Shewhart methods of Statistical Quality Control (SQC) to engineers, inspectors, and others at companies engaged in wartime production. Wallis was enthusiastic. In July 1941, Dr. Deming taught the first ten-day course in statistical methods with the aid of Ralph Wareham of General Electric and Charles Mummery of Hoover Corporation. Wareham had studied statistical theory at the University of Iowa; Mummery was self-taught in the Shewhart methods. They and others went on to teach courses around the country to 31,000 students, including many engaged in government procurement. Dr. Deming personally led twenty-three sessions. The national emphasis on quality led to the formation of the American Society for Quality Control in February 1946. Dr. Deming was a charter member. In 1956, the society presented him with the Shewhart Medal. In 1946, Dr. Deming left the census bureau to establish a private practice as a statistical consultant. He also joined the faculty of New York University as a professor at the Graduate School of Business Administration, where he taught sampling and quality control. Even after his retirement in 1975, he continued to teach as a professor emeritus, traveling weekly to New York, where he kept an apartment, for his Monday afternoon course. Following the war, Dr. Deming's services were in demand overseas. In 1946, he traveled twice to Greece for the State Department to observe the Greek elections. On the second trip, in 1947, he visited India as well, then continued on to Japan, where he had been asked to join a statistical mission planning the 1951 Japanese census. He was to develop sampling techniques for surveys of housing, nutrition, employment, agriculture, and fisheries. In America, industry returned to the peacetime production of consumer goods, for which there was unparalleled demand and no competition. Untouched by war, the industrial heartland churned out cars, washing machines, vacuum cleaners, mixers, lawn mowers, refrigerators, stoves, furniture, carpets, and all the appurtenances for the mushrooming postwar suburbs, inhabited by a generation of prosperous Americans. The American corporation had fulfilled the promise of "scientific management," formulated by an influential industrial engineer named Frederick Winslow Taylor more than three decades earlier. Taylor had held that human performance could be defined and controlled through work standards and rules. He advocated the use of time-and-motion studies to break jobs down into simple, separate steps to be performed over and over again without deviation by different workers.

Minimizing complexity would maximize efficiency; although it was as bad to overperform as it was to underperform on a Taylor-style assembly line. Scientific management evolved during an era of mass immigration, when the workplace was being flooded with unskilled, uneducated workers, and it was an efficient way to employ them in large numbers. This was also a period of labor strife, and Taylor believed that his system would reduce conflict and eliminate arbitrary uses of power because so little discretion would be left to either workers or supervisors. Taylor and his believers held that management was a science that could be studied and applied. Hence, the evolution of the rule-bound, top-heavy American corporate structure, with its cadre of professional managers. In one way, Taylor was right. The system did produce large quantities. But it was also cumbersome and rigid and was slow to adjust to market conditions. Quality in these postwar years took a back seat to production; getting the numbers out. Quality control came to mean end-of-the-line inspection. If there were defects and rework, there would be profit enough to cover them. Although a few control charts lingered here and there for a time, particularly in defense industries, for the most part the techniques taught by Dr. Deming and his colleagues were now regarded as time-consuming and unnecessary, and they faded from use. By 1949, Dr. Deming says mournfully, "there was nothing—not even smoke." But the lesson was not lost on Dr. Deming. As he considered what had gone awry, he realized that the wrong people were committed to Statistical Quality Control. Of course, the technical people had to be educated in the methods. They were the ones who would apply and analyze them. But without pressure from management for quality, nothing would happen. He would not make that mistake again. Dr. Deming and the Japanese

In 1947, Dr. Deming was recruited by the Supreme Command for the Allied Powers (SCAP) to help prepare for the 1951 Japanese census. Japan had paid dearly for its participation in World War II. Of its major cities, only Kyoto had escaped wide-scale damage from aerial bombardments, and 668,000 civilians had died. The nation's industrial base was in ruins; agricultural production was off by a third. The once-prosperous populace had gone first without consumer goods, then without food for the wartime effort. Now there was little of either. Their cities had been destroyed; many Japanese had scattered to the countryside. Morale had collapsed. They had lost confidence in themselves and in their leaders, which perhaps explains why they greeted the Allied occupation forces with so little hostility. Under U.S. General Douglas MacArthur, SCAP made priorities of dismantling the military government and establishing a constitutional regime. When Dr. Deming arrived, two years into the occupation, little physical recovery was yet in evidence. He took note in his diary of the suffering: "Practically all of the area of heavy industry between Tokyo and Yokohama and in every big city is a complete blank, some concrete and twisted steel left. New wooden homes are springing up like mushrooms everywhere over the seared areas. The debris is practically all cleared away; what isn't being built on is in winter wheat or garden." 1 Food was scarce. A tearoom in those days he would later say, was exactly that—no more than tea was served. Rice, which was also in short supply, could not be served in restaurants. People were forbidden to sleep in the Tokyo train station because so many had died—not from cold, but from hunger. He carried candy from the Army PX with him on his travels because no food was available. The plight of the children moved him the most. On one occasion, an American captain took him to railroad yards where twenty or thirty homeless men slept on rice mats. He saw an old man and a young boy no older than nine huddled around a charcoal burner with scarcely a flame. The boy told the captain that he had been in an institution but the adults ate all the food so he ran away. Dr. Deming wrote in his diary, "At 11:30 I crawled into my beautiful bed, wondering why some people have so many good things while others are sleeping on mats in rags, hungry." 2

Another time he visited an institution: "Miserable wretches in rags, most of them dying of hunger. Human beings wasting away. Curious mixtures of the sick with the well, old and young. Crazy people in dark cells, no windows because they'd escape. But who said they were crazy, and who wouldn't be?" 3 He used whatever authority he had to urge that the superintendent be fired. Then and in years to come, he did not closet himself with the American colony that sprang up in postwar Japan. He delighted in invitations from Japanese hosts, and he sought to familiarize himself with the culture, frequently attending Kabuki theater and Noh plays, exploring markets and shops, visiting temples and shrines. "My method of learning is to become, so far as possible, Japanese," he wrote in 1956. His longtime secretary, Cecelia Kilian, remembers him studying Japanese by records late at night in his Washington study. Entertainment in the early postwar years was not easy for either him or the Japanese to come by. But Dr. Deming took advantage of his privileges at the PX. He would buy such delicacies as rolls and butter, canned pork and beans, and cake and ice cream. He would arrange for a small room at a hotel and invite guests from among the statisticians he'd met during his studies. The Japanese reciprocated. Toward the end of his first visit, he was invited to a meeting of the Japan Cabinet Bureau of Statistics, which ended in a "real Japanese dinner with geisha girls." For once, there was ample food—raw fish and eel, fish soup, sukiyaki, fresh tangerines, and sweet cakes made of beans. The geisha girls talked and entertained, dancing out ancient Japanese myths, then dancing with the barefoot guests to a squeaky phonograph. Wrote Dr. Deming, "The party was hilarious. I haven't laughed so in a long time and I never expect to enjoy a dinner so much again." 4

Unknown to Dr. Deming at the time, a group called the Union of Japanese Scientists and Engineers (JUSE) had organized to aid the reconstruction of their country. Night after night, they would meet to talk. 5 Their meetings were lively enough. One of their number, E. E. Nishibori, was in charge of light-bulb production at Toshiba. Light bulbs were a scarce commodity, and Nishibori

would travel to the countryside to swap them for two other scarce commodities, rice and sake, which the learned members would consume as they talked. But they had little idea of how to begin the task they had assigned themselves. The situation was desperate. Japan could not grow enough food to feed its people. It was clear that they needed to export goods for money to buy food. But not only had Japan lost traditional markets like China and Manchuria due to the war, but the industrial production that did exist was almost worse than none at all because it had given Japan what Dr. Deming would call a "negative net worth"; MADE IN JAPAN stamped on a piece of merchandise was a synonym for junk. Some Americans on loan from the Bell Telephone Laboratories to SCAP were aware of these meetings. Indeed, military approval was required for all new organizations, and JUSE had applied like any other. The Bell delegation thought JUSE might do well to study the Statistical Quality Control techniques used by U.S. companies during the war. Those techniques had originated at Bell, of course, under Shewhart. These good-hearted Americans sent for texts to supply the Japanese. One was Shewhart's book, *The Economic Control of Quality of Manufactured Product*, published by McGraw-Hill in 1931. The Japanese were also familiar with the Z.1, 2, and 3 pamphlets outlining standards for wartime production, published by the American Standards Association. The JUSE members, numbering at that time fewer than a dozen, were taken with Shewhart's theories. One member laboriously stenciled a copy of the book onto mimeograph sheets, using a stylus, so that it could be circulated. In their studies, the men also read about Dr. Deming, who had worked with Shewhart. Some of them actually knew Dr. Deming, who had made a point of socializing with his Japanese counterparts during his 1947 visit. They were impressed with his knowledge and his friendliness, and they thought perhaps he would help in their recovery effort. In March 1950, JUSE Managing Director Kenichi Koyanagi wrote Dr. Deming asking him to deliver a lecture course to Japanese research workers, plant managers, and engineers on quality control methods. As the Japanese had hoped, Dr. Deming replied that he would be happy to help. "As for remuneration," he wrote Koyanagi, "I shall not desire any. It will be only a great pleasure to assist you."<sup>6</sup> Dr. Deming arrived in Tokyo on June 16, 1950. His office was in the Empire House, which flew the British flag and overlooked the moat and wall around the Imperial grounds. Conditions had improved in Japan. "The people look better than they did 3 years ago," Dr. Deming noted in the diary he kept for friends and relatives. "They looked hopeful then, and happy; but now they look really happy and their clothes are better, and they are eating much better." "The shops are now bursting with food, textiles, house furnishings, fountain pens. But prices are high. The average Japanese family must spend half its income for food."<sup>7</sup> On June 19, before a standing-room-only crowd of five hundred, he gave the first in a dozen sets of lectures. They were scheduled for as far south as the island of Kyushu. Demand was such that it was frequently necessary to turn people away. The response was gratifying, but Dr. Deming nevertheless was troubled by his experience in the United States, where Statistical Quality Control had flourished for such a brief period. Midway through that first lecture, he would later say, he was overcome with a sense of deacute;jagrave; vu. He was not talking to the right people. Enthusiasm for statistical techniques would burn out in Japan as it had at home unless he could somehow reach the people in charge. He decided he had to meet with the Kei-dan-ren, an association of Japan's chief executives. Ichiro Ishikawa, the JUSE president, made the arrangements for a dinner with them on July 13. An account of that dinner appears in his diary: "At 5 came Dr. Ishikawa's dinner for the 21 presidents of Japan's leading industries. I talked to them an hour. There was a lot of wealth represented in that room, and a lot of power. I think they were impressed, because before the evening was over they asked me to meet with them again, and they talked about having a conference in the mountains around Hakone. The dinner was superb, American style, with knives and forks. I thought the food would never stop coming. Fortunately the Japanese do not bring on heavy desserts. We had lobster, fish, chicken, and steak, besides all the other things that go with a dinner. The meeting and dinner were held at the Industry Club, not far from my office in the Empire House."<sup>8</sup> What he told them, he would later relate in his seminars, was this: "You can produce quality. You have a method for doing it. You've learned what quality is. You must carry out consumer research, look toward the future and produce goods that will have a market years from now and stay in business. You have to do it to eat. You can send quality out and get food back. The city of Chicago does it. The people of Chicago do not produce their own food. They make things and ship them out. Switzerland does not produce all their own food, nor does England." The Japanese, he had already noted, were putting up with poor quality in incoming materials—off-gauge and off-color. "I urged them to work with the vendors and to work on instrumentation. A lot of what I urged them to do came very naturally to the Japanese, though they were not doing it. I said, 'You don't need to receive the junk that comes in. You can never produce quality with that stuff. But with process controls that your engineers are learning about—consumer research, redesign of products—you can. Don't just make it and try to sell it. But redesign it and then again bring the process under control. . . . with ever-increasing quality.'" On a blackboard he drew a flow chart that began with suppliers and ended with consumers, which is now a staple in his seminars. "The consumer is the most important part of the production line," he told them. This, he realized, "was a new thought to Japanese management. They had hitherto sold their wares to a captive market." "I told them they would capture markets the world over within five years. They beat that prediction. Within four years, buyers all over the world were screaming for Japanese products." In August, Dr. Deming was

invited by the Tokyo Chamber of Commerce to address an additional fifty manufacturers, and he spoke to forty-five more in Hakone. By summer's end, in addition to teaching statistical techniques to thousands of technical people, he had reached the management of most of Japan's large companies. Although some of those men would tell him years later that they had privately thought his optimism was crazy, at the time they had been willing to swallow their disbelief. In a sense, having lost all, they had nothing to lose. The Japanese embraced the Deming philosophy, channeling the energy that had made them such a fearsome military enemy into making them a formidable economic opponent. Charts and checklists blossomed throughout their factories, giving them an almost festive appearance. On a return trip six months later, Deming was waylaid at dinner by the president of an electric materials company who unfurled charts to show how he had cut rework on insulated wire to 10 percent of its previous level. A pharmaceutical company was producing three times as much of one major product with no changes in machinery. In the summer of 1951, The London Express saw fit to headline the following news: AND NOW COME JAPANESE NYLONS AND THEY ARE OF GOOD QUALITY. "By the time I made several trips to Japan," Dr. Deming reported in an interview many years later, "JUSE was able to teach hundreds of people. They had courses for people outside of Tokyo in the evening for people who were working there during the day. There were also courses for management. They trained almost 20,000 engineers in rudimentary statistical methods within 10 years." To show their appreciation, in 1951 the Japanese established the Deming Prize—a silver medal engraved with a profile of Dr. Deming—to be given in two major categories: to an individual for accomplishments in statistical theory and to companies for accomplishments in statistical application. The award was established with proceeds from Dr. Deming's published lectures—proceeds that he refused to accept for personal use but donated to the prize. So anxious were the Japanese to win the awards that the first prizes were certificates in lieu of medals, which had not been cast in time. (Once cast, they had to be redone because committee was spelled with a single t.) Now a prestigious, sought-after award, presented in a nationally televised ceremony, the prize was awarded for the thirty-fifth time in 1985. Dr. Deming attended in person with a retinue of several dozen American businesspeople. Dr. Deming returned in 1951 to teach more courses and attend the ceremonies. He also toured a camera factory and noted somewhat prophetically, "A year ago they made 200 cameras per month; now they are making 400, and hope it will be 500 this month and hereafter, with no increase in workers or hours—simply better control of quality." In 1960, he was awarded the Second Order of the Sacred Treasure—the first American to receive such an honor. Preparations for the ceremony included a frantic search for a morning coat large enough for his six-foot frame, a rare commodity in Japan. At the ceremony, according to his diary, "Prime Minister Kishi pinned a small emblem on my lapel. The medal itself is about 3 inches in diameter, heavy with much gold, with a certificate in Japanese, signed by the Prime Minister. The design of my medal is mirror, jewels and swords. The mirror is about the size of a dime, platinum or peladium, the jewels (rubies?) in a circle, and radial swords, all set in solid gold, in a beautiful lacquered box, a delightful work of art. I can say that nothing ever pleased me so much as this recognition. The citation stated that the Japanese people attribute the rebirth of Japanese industry, and their success in marketing their radios and parts, transistors, cameras, binoculars and sewing machines all over the world to my work there." That same year, in a pamphlet issued on the occasion of the tenth Deming Prize awards, Kenichi Koyanagi wrote touchingly of Dr. Deming: "Special mention must be made of the fact that the Deming Prize was instituted with gratitude to Dr. Deming's friendship as well as in commemoration of his contributions to Japanese industry. When Dr. Deming gave his 8-day course in 1950, Japan was in the fifth year of Allied occupation. Administrative and all other affairs were under rigid control of the Allied forces. Most of the Japanese were in a servile spirit as the vanquished, and among Allied personnel there were not a few with an air of importance. In striking contrast, Dr. Deming showed his warm cordiality to every Japanese whom he met and exchanged frank opinions with everybody. His high personality deeply impressed all those who learned from him and became acquainted with him. He loved Japan and the Japanese from his own heart. The sincerity and enthusiasm with which he did his best for his courses still lives and will live forever in the memory of all the concerned. Herein, lies why we loved and respected, and still love and respect him." Back in the United States, none of this hoopla made much of an impression. Here Dr. Deming was known less for his work in Japan than as a distinguished statistician. He developed a large clientele in the trucking industry, for whom he designed most of the rate structures now in existence. His published papers—suggest the breadth of his work, from "On a Statistical Procedure for Study of Accounts Receivable in Motor Freight" to "Changes in Fertility Rate of Schizophrenic Patients in New York State." In one offbeat study, Dr. Deming and two colleagues undertook to analyze the ability of thirty-year-old twin "idiot savants"—George and Charlie—to name the day of the week for a given date in any year, mentally calculating the answer in minutes. His varied assignments kept him on the road a great deal. The family seldom took vacations, but on weekends they would go for bike rides or day trips. On Saturday mornings, his youngest daughter, Linda, would wake to the sound of her mother at the calculator. Not only did Lola Deming perform the calculations for much of her husband's work, she edited his manuscripts as well and traveled with him several times to Japan. Meanwhile, she continued to work for the federal government until her retirement in 1967. The Demings regularly had guests for cocktails or dinner. After his trips to Japan, there were frequent houseguests from that country. Both parents

liked to work in the garden. Her father's reverence for wildlife, said daughter Linda, made a strong impression on her as a child. She remembered his concern for turtles that became disoriented after a dirt road in the neighborhood was paved. Every morning for a period, the family would troop out of the house to pick up all the turtles who were confused by the intrusion of the paved road and move them to the other side. Years later, Linda Deming Haupt laughed at the memory of the rescue mission with her father in the lead. "I can't look at a turtle without thinking of him." He biked with his family well into his seventies. And he was, said his elder daughter, Diana Deming Cahill, an expert kitemaker, whose products were aerodynamically engineered to stay aloft when those of other children failed. He also composed liturgical music and loved to sing and play the piano. His daughters were aware that their father was famous in Japan, and they were duly impressed by the jeweled Emperor's medal. They also realized that he was not held in the same high esteem in this country. Diana Deming Cahill remembers being "perplexed" at the dual standard. "I know it was frustrating to him," Linda Deming Haupt said. "Whether he would admit it, I don't know. He's a very proud man. But I think he hurt. It's hard to have your mission and not have anyone listen." All that changed in 1980. Thirty years after he first taught the Japanese his methods, Dr. Deming was "discovered" in America. At a time in their lives when most men would have long since retired, Dr. Deming was catapulted into national prominence. The person who discovered Dr. Deming was a television producer, Clare Crawford-Mason. And the discovery made her exceedingly nervous. Mason was a seasoned reporter who had covered both the police beat and the White House for the Washington Daily News. She also had done investigative reporting and a monthly television magazine for the local NBC television station and had helped start People magazine. In 1979, she was producing a documentary for NBC with the working title, "Whatever Happened to Good Old Yankee Ingenuity?" The subject was the suddenly precarious position in which American industry found itself, faced with the economic threat from Japan. But as Crawford-Mason well knew, "you can only explain issues through a story," and there didn't seem to be any story to tell. She found herself conducting interviews with economists that were about as exciting as "watching paint dry," and she wondered how she was going to pull a program out of it.