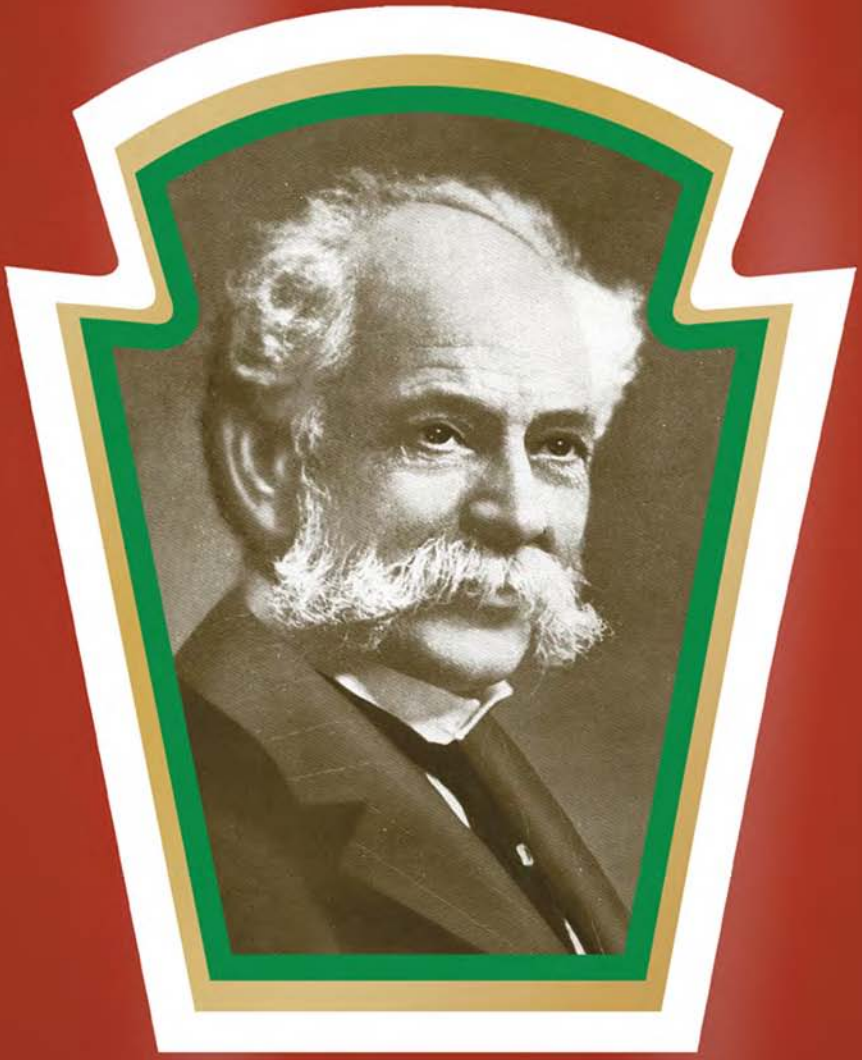
H.J. HEINZ

A Biography



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H. J. Heinz

Also by
Quentin R. Skrabec, Jr.

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To Our Lady of Perpetual Help
and
my grandfather, Louis Andrew Skrabec

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Preface

H. J. Heinz was one of America's greatest industrialists. He has always been part of a pantheon of Gilded Age industrialists for me personally. Heinz was a Pittsburgh neighbor to the likes of Andrew Carnegie, Henry Clay Frick, George Westinghouse, and the Mellon family. Yet he has remained in their shadows as an industrialist. Even in his (and my) hometown of Pittsburgh, his role in pioneering industrial management, process management, quality control, and industrial engineering is overlooked. The few efforts to portray Heinz, the businessman, focus on his brilliant innovations in marketing and advertising. Heinz's contribution to the American manufacturing system has been unrecognized. His factories pioneered assembly line techniques long before Henry Ford. Heinz electrified his factories before anyone with the exception of George Westinghouse. Heinz's use of technology and vertical integration was far ahead of the massive steel mills of Andrew Carnegie a few miles away. His Midwest factories were America's first fully integrated operations, taking the product from the field to the household.

It is my hope to show a different side of the Heinz legacy while expanding on biographical works by including the struggle and growth of his company. This biography of H. J. Heinz details the evolution of his business and also covers some of the officers that helped Heinz build the iconic company of H. J. Heinz. In particular, it tells of Heinz the pioneer in many aspects of business. Finally, the work deals with the history of many of his factories and locations not previously studied in detail.

I started my quest at Dearborn's Greenfield Village, which has the original Heinz home and first factory. The home was moved there in 1957 and is a testimony to the industrial legacy of H. J. Heinz. The related Benson Research Center has the early corporate records as well. The Village and Research Center have an outstanding collection of corporate arti-

facts, antiques and records, including records of the branch factories in the Midwest. I never saw the old Heinz home and factory till I visited Greenfield Village with my parents prior to entering the University of Michigan. Pittsburgh in my boyhood was a Carnegie town and Carnegie overshadowed other great Pittsburgh industrialists. Some of this is the result of the focus on Carnegie as a humanitarian and philanthropist. The location of Greenfield Village is particularly reflective of my view of H. J. Heinz, and offered a unique look back at his times. At Greenfield, one can tour the Heinz home and visit re-creations of a country grocery store of the period. The photographic archives are extensive and can take several days to fully review. Photographs of Heinz advertising and sales setups are particularly enlightening.

Another major source of material is the Senator John Heinz History Center in Pittsburgh. I started in the museum with the Heinz exhibits, which help define the mission of Heinz and his company. The exhibits include many items on loan from The Henry Ford. Such historical exhibits as those found at The Henry Ford and Heinz History Center are not only inspirational, but critical to fully understanding the period. The archives at the History Center contain most of the personal material, but some of this is mixed in the corporate letters at the Benson Research Center. Most of the material on Howard Heinz can be found at the History Center. Another source of primary material is the archives at the Carnegie Library of Pittsburgh. All three of these archives offer copies of extensive corporate publishing over the years. Pittsburgh newspaper archives are available for research at the Carnegie Library. The Pennsylvania Room of the Carnegie Library includes an unpublished "Diary of my Life at Greenlawn" by John Cowan. Excellent digital archives are available through the Historic Pittsburgh Project of the Heinz History Center and the Carnegie Library. Digital records of the period are available through Cornell University.

Another necessary stop on the quest to fully understand H. J. Heinz is the restored home of Henry Clay Frick in Pittsburgh. Frick and Westinghouse were the immediate neighbors of H. J. Heinz's home of Greenlawn. Greenlawn was lost to fire in the 1950s. Besides the Frick home, there is a museum at The Frick, which has Howard Heinz's "Red Devil" car and one of H. J. Heinz's carriages. Of course, one can still see the old Heinz factory and the bronze statue of H. J. at Heinz Corporate Headquarters in Pittsburgh.

The earliest biography of Heinz by E. D. McCafferty, his personal secretary, dealt with Heinz the person. Like most biographers of the Gilded Age, McCafferty is hagiographic, but the insights of one that knew Heinz personally are priceless. The only full biography of H. J. Heinz

was Robert Alberts's *The Good Provider*. Alberts does an outstanding job of summarizing and delineating the personal diaries of H. J. Heinz. These personal diaries cover the years 1875–1882, 1884–1889, and 1891–1894. Alberts did an excellent job of covering most of the Heinz material now located at Senator John Heinz History Center in Pittsburgh. There are a number of short corporate biographies (published and unpublished) available at The Henry Ford and Heinz History Center done by the Heinz Company over the years. The early corporate records have been at the Benson Research Center of The Henry Ford since the late 1950s. I merged these early corporate records at the Henry Ford to help expand my biography and corporate history. Photographic records at both the History Center in Pittsburgh and The Henry Ford are extensive. Another outstanding book, Stephen Potter's *The Magic Number: The Story of 57*, details the history of Heinz Company in England.

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Introduction

For years I have been working on writing the biographies of America's greatest capitalists. Amazingly, a large number of these icons lived in a single Pittsburgh neighborhood and attended the same church. H. J. Heinz can in many ways be considered the Jupiter of these distinguished industrialists. Heinz's Pittsburgh neighborhood included George Westinghouse, Thomas Mellon, Andrew Carnegie, Henry Clay Frick, and Philander Knox. This single neighborhood, known as East Liberty, had the world's highest income per capita in the 1800s. These capitalists were a strange mix of virtue and greed. Some, like George Westinghouse and H. J. Heinz, were saintly. Others like Henry Clay Frick found all the virtue they needed in money making. Some were more complex, exhibiting extremes such as Andrew Carnegie. Whether saint or devil, they did share a belief in the system of capitalism, in particular, paternal capitalism. I started this quest as a manager in the steel industry of Pittsburgh. Men like Carnegie, Frick, and Westinghouse dominated the city's memorials, but Heinz was a forgotten prophet in his own city. There is a real life tribute to capitalism in Niles, Ohio; capitalists like Heinz financed it. At the McKinley Memorial in Niles is a collection of bronze busts of donors to this tribute to the fallen president and capitalism. It was said that in his later years Henry Clay Frick came here for inspiration, and maybe justification. Despite the similarities of the great industrialists, it seemed to me food processing was not in the same segment of industry as steel and iron. I thought of Heinz more as a gardener or cook, not on a par with other industry builders. I found something much different in my research of H. J. Heinz.

My initial impressions, of course, were quite wrong. Heinz was a real industrialist, a brilliant advertising pioneer, a marketing genius, and a promoter of new technology. His management techniques were far ahead

of his counterparts in heavy industry, as he adopted the continuous manufacturing principles of Fredrick Taylor before most of American manufacturing. The nearby steel mills of Andrew Carnegie were crude compared to the advanced factories of Heinz. He brought the first electric auto to Pittsburgh and Chicago, and was one of the first manufacturers in the nation to run his factory on electricity. He put up the first electric sign in New York City. He invented a number of machines to automatically sort pickles and fruits by size. His canning line for baked beans was an assembly line put to use twenty years before Henry Ford applied it to car making. He helped invent the solderless can that allowed further automation of canning. His first factory had state-of-the-art material handling with moving conveyors and overhead cranes. His was one of four companies to apply the automatic bottle-making machine of Michael Owens. He invented continuous baking ovens and automatic ketchup filling machines. He was the main force behind the passage of the Pure Food Law of 1906. While he did not invent product branding, he developed the marketing system to make branding work. His record leaves no doubt of his membership in America's pantheon of capitalists.

Heinz would define the new field of industrial management. Heinz and neighbors like George Westinghouse were the first to furnish employee benefits such as pensions, health care, and social services. His paternal management system was a ray of hope in a world of long hours, dangerous conditions, and harsh treatment. Heinz pioneered human relations departments (which he called the "Sociological Department"), and won as many gold medals for his innovative employee management systems as he did for his 57 varieties. He promoted women managers to supervise his predominately female work force. He took poor immigrant wives and daughters, taught them English and homemaking skills and prepared them for citizenship tests. While he was an average paymaster, he did install incentive jobs, creating some of the best pay for women in the nation. Company doctors gave employees free medical aid; there were company dentists, manicures, carriage rides, free concerts, athletic facilities, and family outings.

A common question for biographers of highly successful people is which attribute or personality trait is the most important. With H. J. Heinz, as well as the Heinz family, it is clearly creativity. It may seem a strange quality for a successful businessman, more pertinent for inventors and artists, but it was the talent of H. J. Heinz that led to success. I have written a biography on George Westinghouse, one of America's greatest inventors, and I would rank Heinz as the most creative of the two. Creativity, in fact, appears to be both a dominant and recessive gene in the Heinz family. H. J.'s brother, John, was a pure artist, as was H.

J.'s son, Clarence, and grandson Rust Heinz, while H. J. Heinz, his son Howard, and grandson Jack all used their creativity to establish successful business careers. Their creativity could be seen in advertising, new products, pioneering new technology, employee programs, and process enhancement. The difference was that H. J. Heinz channeled his creativity into his drive to make money. Creativity was behind his marketing and product genius. Heinz had a history of applying new technology such as electricity, trucks, assembly line techniques, automated handling machines, and chemical analysis. Earlier on, Heinz saw that the emerging railroads would offer new business opportunities, and he built his distribution and supply on America's railroad boom. Heinz pioneered the use of faster mail delivery before Sears, Roebuck and Co. He was far ahead of Henry Ford in assembly line techniques. He was one of the first to apply the automatic bottle-making machines and automated ketchup filling machines. He was the first to use horseless delivery trucks in Pittsburgh, and the first to use electric billboards in New York. He was one of the first to use natural gas in his factory, as well as the first to electrically power and light his factory.

Heinz's approach to manufacturing was much different from that of Carnegie, Frick, and even Westinghouse. Heinz was the first truly "green" manufacturer in a dark gray world of coal burning and steelmaking. Heinz's plant was in the center of the 1800s' greatest industrial city, whose smoke often limited daylight to a few hours a day. Pittsburgh had the highest incidence of typhoid fever because of its polluted water; its sewage system was no better than a medieval village. Heinz led a civic revolution in the 1900s to change Pittsburgh. He led a city commission on smoke abatement and sewage control. He promoted and helped finance the famous "Pittsburgh Survey," which highlighted the social problems of America's industrialization. His commission put in water filtration plants and sewage control that eliminated the hundred-year plague of typhoid fever in Pittsburgh, which had taken Heinz's wife, Sarah. He fought for an extended park system for the city. Heinz also turned his factory green by converting coal power generators to clean natural gas. He built roof top gardens for his employees, and scrubbed the factory's brick exterior clean every month.

What Heinz shared with his capitalist neighbors was just as striking. Heinz came from an immigrant family full of hope and faith. There was a drive and a belief that hard work would result in large rewards. Heinz, like the others, had known major setbacks, including the bankruptcy of his first fledging company. Handicaps seemed to be motivational instead of depressive. He, like the others, had a strong and inspirational mother who defined his belief in his own manifest destiny. Achievement

was the real root of his drive rather than money. This is another shared attribute of his fellow capitalists. Heinz believed in a version of paternal capitalism. While his employee benefits were the best of the period, he was not a high payer or a union supporter. His outstanding application of the Golden Rule in his company's vision was a powerful example, and Heinz Company never experienced a strike during a 70-year period. Heinz cherished loyalty most in his employees. While deeply religious, Heinz, like the others, was ecumenical in business dealings and charity. Finally, like the others, Heinz left an imprint on the company and an enduring corporate culture.

Heinz's philanthropy was more personal and less public than his fellow capitalists. Heinz's donations focused on social services, hospitals, schools, and individuals. He rarely made press headlines like Carnegie. Heinz's giving was more likely found in church newsletters. His biggest philanthropic effort was Sunday school associations. Heinz had spent years teaching Sunday school. Even in his darkest business days, Heinz would show up to teach on Sundays, and when traveling he always found a Sunday school to drop in on. Heinz gave of his time, talent, and treasure. He belonged to and was an executive director of the Allegheny County Sabbath School Association, the Pennsylvania State Sabbath School Association, the International Sunday School Association, and the World Sunday School Association. He always combined Sunday school visits with his world travel, and in later years, he traveled the world to spread the application of Sunday school. He saw this expansion as part of America's worldview, consistent with the visions of men such as William McKinley and Teddy Roosevelt. Heinz spread culture and Christianity as well as his products in Asia.

1

Bright Skies, Dark Days

DECEMBER 13, 1875, WAS A COLD but unusually bright day for the normally smoke-filled skies of Pittsburgh. The air also lacked the all too familiar sulfurous odor of the iron foundries, glass furnaces, steel mills, and the city's forge shops. Pittsburgh's smoke had been the economic barometer of the nation. This smoke-free day seemed strange for Pittsburghers, but augured economic conditions. Years earlier, Charles Dickens had said the factory smoke of Pittsburgh exceeded England's Birmingham and could only be rivaled by hell itself. The smoke was reflective of Pittsburgh's role as the nation's industrial center in 1875, even though the young Carnegie and Westinghouse had just started the city's signature industries. In 1875 Pittsburgh was the glass, machinery, oil, and iron capital of the nation, if not the world. It was common in Pittsburgh for the gaslights to be left on until midday because of the thick smoke that settled in the river valleys of the area. Early 1875 had started out with the Weather Bureau reporting numerous "smoke alerts" and noting record days of smoke-created darkness, but now the weather and economy had changed. It had been almost twenty years since Pittsburgh had seen such clarity of its skies as on this day. What had started as a banking crisis in New York had evolved into a manufacturing depression, and Pittsburgh's great smokestacks had gone cold by December of 1875. While the year had started out hopeful of a turn-around with the opening of Andrew Carnegie's first and state-of-the-art Bessemer steel mill a few miles up the Monongahela River, tight money had bottled up growth by December. This day, H. J. Heinz was coming from Sharpsburg up the Allegheny River to Pittsburgh to check with his bankers and lawyer about his failing company.

The great "Panic of 1873" had started in the fall of 1873 in New York, but had spread across the nation by 1875. The stock market hit new bottoms by November 1873 and had to be closed for over a week. The great

post–Civil War railroad and industrial expansion had come to a halt with the failure of Jay Cooke's vast investment house. The panic was starting to break out of New York by early 1874. A young Pittsburgher, Andrew Carnegie, now living in New York, rushed back to Pittsburgh in early 1874 to check the construction needs of his new steel mill being built at Braddock. He checked with Pittsburgh's Exchange Bank about his railroad holdings, which were experiencing problems. Carnegie was happy to find that his loans were not being called. By late 1874, Carnegie had to put construction on hold for a few months as Pittsburgh money started to dry up. New York had already been devastated by the panic. Carnegie was said to have trouble getting to his New York office through the lines of men at thirty-four soup kitchens. By late 1875, gangs and riots had reclaimed many of New York's streets, as unemployment went over 25 percent. The *New York Times* suggested that people buy dogs with good teeth to maneuver the streets.[1] By 1875 the panic had hit Pittsburgh even harder.

Pittsburgh's banking industry been devastated by the Panic of 1873. The panic peaked in 1875, with unemployment reaching 40 percent nationally. Not only had Pittsburgh's booming iron and foundry industries been stilled, but its new oil refining business had crashed, with oil falling from $2.30 a barrel to 70 cents a barrel. Coal mining production just east of Pittsburgh had dropped from forty-five million bushels to twenty million bushels a year. Half of the nation's railroad bonds were in default. Banker Thomas Mellon said he would never forget the soup kitchens and the homeless in the streets. Pittsburghers would long remember this period as the "cataclysm of the century," and "the great depression of the nineteenth century." Pittsburgh's smokeless skies reflected the depth of the depression. The over 20,000 laid off workers formed long bread lines in downtown Pittsburgh. Tramps built fires in the streets to keep warm. Never before had Pittsburgh seen so many beggars in the street. Over half of Pittsburgh's forty banks had failed. The real estate market crashed; people just walked away from their houses and mortgages. It was the worst depression the nation had known. With millions out of work, wages were declining rapidly as well. In December of 1875, even Pittsburgh's Mellon Bank was near to closing and had to suspend payments on several days. The young Heinz, Noble and Company had been one of the area's growth companies since its formation in 1869. But now in 1875, things were changing rapidly.

The informal credit chain was as important as the banks in these financial downturns. Grocers extended credit informally to customers, and wholesalers extended credit informally to the grocers. The chain continued to the producer and his suppliers. Suppliers often extended infor-

mal (late payments) credit to producers. As people lost jobs, credit was extended until the breaking point. Then the whole chain was short cash to pay. This killed demand. In the case of Heinz, the suppliers of cucumbers were pulling on Heinz to pay and did not extend informal credit. The bank loans for Heinz were being called in, which created a cash crisis. Personal loans from family and friends were often the other source of cash, but as the economy dragged into its second year of depression in 1875, these too dried up. The whole economy became cash short with no Federal Reserve to pump money back into the system. A true panic ensued as all tried to get cash that was not available. By December of 1875, the national economy had reached the breaking point. Bankruptcies and closings throughout the system only quickened the downward spiral. All had to wait for the market to work things out, which was measured in years. Typically such a recession or depression lasted six years or more, but without a Federal Reserve, it could last over a decade.

In late 1875, Heinz had let a check of his partner, L. C. Noble ("Clarence"), for cucumbers and cabbage in Illinois be returned unpaid. For a business in these times, a returned check meant the beginning of the end. It strained his business and his relationship with his best friend and partner and started a credit panic among his suppliers and banks. This Monday, Noble had come to see Heinz by train and they had gone to Pittsburgh to explore the magnitude of the problem. Heinz had been in bed for days, having broken out with a rash (probably psychosomatic). He had been complaining for months about the pressure of money raising and meeting payrolls. His diary used terms such as "depressed," "strained," and "exhausted." By fall Heinz noted: "Seemly I have lost all ambition." It is the type of deep depression known only to men of high achievement. Problems went beyond Heinz's work; his wife Sallie had lost ten pounds and worried constantly and his brother Peter went on an extended drinking spree.

Sallie had given him $700 from her small savings to meet the payroll of Heinz, Noble and Company. The main plant, store, and warehouse were in Pittsburgh on Second Avenue between Grant and Smithfield Streets. The company also had 160 acres of farmland near Sharpsburg, a business office and vinegar factory in St. Louis, and a warehouse in Chicago. One of the company's biggest assets was twenty-five horses, all black and handpicked by H. J. Heinz. Most of these draft horses were the medieval breed of Percherons, a favorite of Heinz, and a breed well adapted to hard work and cobblestone streets. Percherons, a cross between Arabian stallions and Flemish plow mares, had originally been bred to carry knights with 400 pounds of armor. Heinz wanted all his wagons and horses to look the same and be recognizable in all cities. Early on he

had the wagons painted white with green trimmings, then moved to plum red colored bodies with green trim to make them stand out more. This type of flamboyant and colorful marketing was part of his overall plan of visual advertising. E. J. Noble handled the St. Louis and Chicago offices with his brother, L. C. Noble, while Heinz managed Pittsburgh operations and the banking needs. Heinz had used up the company's credit in Pittsburgh, and his local Sharpsburg bank had made its last effort to help him. Noble had rushed to Pittsburgh to see what he could do and maybe rally his partner from his dark mood. Before Noble got to Pittsburgh, the news of the company's trouble had made the newspapers.

It became clear that it was too late. Heinz had done all he could by moving the inventory and generating cash. The company had used warehousing as a competitive edge in the marketplace, but now it had become an anchor. The grocers and retailers in various cities owned a large portion of the warehoused inventory and needed the product. Warehousing was a service to the customers. Heinz and Noble kept the goods and paid insurance on them until they were needed. The bounced check in Chicago had caused a panic and demand from grocers that goods be moved to their own warehouses in fear they might be lost in a bankruptcy filing. The whole city was on edge as banks had closed and firms had filed for bankruptcy. Heinz, Noble, and Company now had nowhere to go. Heinz and the Noble brothers had used up their savings. In addition, Heinz had mortgaged the Heinz homestead, which also functioned as a processing plant, and Heinz's father had mortgaged his home and brickyard. There was nothing left to mortgage or use as collateral, and he could not ask from family, realizing that the company odds for survival were poor. Realizing his need for money, most of his friends were avoiding him, and many already had loaned him large sums already. The Sharpsburg banks could help no further. Their Pittsburgh lawyer, B. C. Christy, recommended bankruptcy. Heinz and Noble started home for Sharpsburg in late afternoon, having decided to call a family meeting to lay out the bad news. While Heinz and the Noble Brothers were the owners, the Heinz family was now the major debtor. The family meeting was a sober event and all realized bankruptcy would come shortly.

Two days later, on a landlord's warrant for unpaid rent, the Heinz store on Pittsburgh's Second Avenue was closed. H. J. Heinz had been there moving inventory at the request of customers and in hope of generating sales. Pittsburgh was a smaller town then, and news traveled fast. Bankers and creditors wasted no time in taking action. Creditors moved quickly to protect their interests, since Heinz commonly warehoused goods that were owned by the customers. Several creditors claimed Heinz was moving inventory in an effort to defraud them. Heinz was arrested that

afternoon on charges of fraud. The $3000 bail was met by a levy on his and his father's assets. The next morning, Heinz telegraphed St. Louis and Chicago offices to close down. The failure and arrest were now front-page news in Pittsburgh. On Friday, December 17, Heinz filed for bankruptcy (he was one of seventeen that week alone). The Heinz family was pulled down in their effort to save the company, while the Noble brothers seem to have avoided using their money in the final months. The Noble brothers felt it was Heinz's mismanagement that caused the failure. Heinz would never again partner with anyone except family members.

Clearly, H. J. Heinz had to shoulder a large part of the failure. His plan for national expansion went beyond his business experience in farm production. With the later moves into pickles and sauerkraut, the Allegheny farmland was too little. As the market kept expanding in the Midwest, Heinz contracted for the produce of fields in Woodstock, Illinois. The contract required Heinz to purchase the full product yield of the Woodstock fields. Clarence Noble negotiated the contract to assure supply for the firm's booming demand. He agreed to buy the total yield from the 800 Woodstock acres, paying for cucumbers at 60 cents a bushel and cabbage at $10 a ton. The crop yield that year was huge, and Heinz needed money to meet contract requirements. He had underestimated the yield, and was paying out more than he could borrow in these times. Probably in more normal times, Heinz could have readily borrowed to meet demand. In addition to the crop purchases, cucumbers piling up at the factory increased his processing payroll. Two thousand bushels of cucumbers were also beyond his salting station capacity at the Pittsburgh plant, causing a product backup. It was a weekly issue to make payroll and purchases. And as sales slowed inventory, shelf-life became a problem as well. At least bankruptcy would end months of unbelievable stress in managing a hopeless situation.

His real problems, however, were just beginning. The newspapers were far from kind and Heinz's business ability was questioned often. The lawsuit continued to make the paper through January of the next year. The bankruptcy court took everything, but he did win the lawsuit. His father's brickyard was pushed to failure as well. Heinz's father went into a deep depression over the bankruptcy and would never fully recover his mental health. Heinz's father was sent to a Philadelphia sanitarium. This was a family of enormous pride and achievement, and failure cut deep in their psyches. Christmas of 1875 seemed to be the lowest point mentally; Heinz had no money for Christmas gifts. The H. J. Heinz family now consisted of his wife, a six-year-old daughter, Irene Edwilda, and a four-year-old son, Clarence Noble Heinz. He attributed his mental turn-

around to an old German prayer of hope given to him that Christmas by his mother. But January brought even more trials: Heinz ran out of money to even buy food. He was forced to buy groceries on credit. The Nobles and most of his friends had walked away from him. He lamented the loss of his best friend, Clarence Noble, whom he had named his first son after in 1873. The setback tested H.J.'s mettle and his faith, but through it all he fulfilled his duties of superintendent of the Sunday school. Maybe more difficult was taking his daughter Irene to decorate the Christmas tree at Grace Methodist. While he met these basic commitments, Heinz was bedbound through the Christmas season. Things had certainly hit bottom for the Heinz family, but a family meeting would change the future. Heinz's mother would hold the family and her son together with her deep faith.

It had only been a few years before that Heinz, Noble, and Company had been hailed as one of Pittsburgh's fastest growing firms. News of the 1870s had heralded Heinz and Noble as having "built up the business with a rapidity seldom witnessed."

In 1868, H. J. Heinz formed his non-family food business with neighbor and brick business partner, L. C. Noble. The company was to be Heinz and Noble Company. The business was founded on bottled horseradish, a product Heinz had developed as a boy by selling the surplus of his mother's garden. Bottled horseradish was not a new product, but Heinz would revolutionize this small niche. Horseradish was a common vegetable root in western Pennsylvania gardens. It was a pungent and bitter appetizer that was popular with many nationalities. Horseradish or *Cochlearia armoracia* was spread and cultivated by the Saxons from its native home around Bavaria. The English loved it grated with beef. The Irish, Scots-Irish, and Germans used it with fish and oysters. The Jewish used it with holiday meals; it was one of the five bitter herbs used for the Passover Feast. Local residents used it for medical purposes as well. The root grew well in the soils of Western Pennsylvania and could be stored in root cellars or buried in the ground. Horseradish could be produced and bottled at the Sharpsburg homestead readily. As a young boy, H. J. Heinz started a business of selling horseradish. The business took off in a matter of months and Heinz hired two women to help. These women, Mrs. Bingham and Mrs. Schultheis, were experienced in the preparation of sauces and canning. At the time women could be hired for 75 cents versus $1.00 a day for men. Boys were paid 50 cents a day to harvest. Heinz did most of the selling and marketing personally.

Heinz wasn't just marketing a popular condiment. This common and easily grown root had a drawback in its preparation. Heinz was selling a product that reduced time in the kitchen. Housewives hated to prepare grated horseradish. Grating was a tedious task that bruised knuckles. In

addition, its pungent oil stung the eyes. As a boy Heinz had discovered a market for grated horseradish as a convenience product, and housewives would pay to reduce difficult kitchen labor. He wasn't the first to realize that grated horseradish was marketable, but he was the first to envision fully a national market for it. Heinz's strength was his innate ability to understand consumer trends. Still, at the start he faced considerable competition, and he needed to brand his product. He knew the biggest concern about grated horseradish was quality and purity. It wasn't only the obvious dirt, leaves, and other impurities. It was common for processors to add filler like turnips or even wood fiber. Because horseradish was a table condiment and known for its pungent nature, fine, lump-free grating was important. Heinz addressed both issues and won over housewives, using clear glass bottles to prove his point. Most of the competitors used "natural" green and brown glass bottles. Many housewives suspected the colored glass was used to hide the impurities. Clear glass cost a little more because it required manganese to be added by the glassmaker. This idea of building a niche on high quality was a strategy Heinz repeated often, but it is a bit of a legend that Heinz as a youth or even Noble and Heinz had all clear glass bottles; the myth is not supported by bottle collectors. Light aqua was the typical color of many Heinz bottles prior to 1878. These light aqua bottles did allow inspection of the contents. Later, as volume increased, Heinz could assure clear bottles.

Heinz continued to expand his boyhood business into his early twenties. He also started a brief career in his father's brickyard. In 1868, he partnered with the sons of the old Noble banking family of Sharpsburg to open his own brickyard. Brick making and brickwork could not satisfy Heinz's ambition and love of capitalism. Young Heinz was a natural salesman and soon brought Noble into his passion. Clarence Noble had become a partner and close friend and soon the two added E. J. Noble and moved into the food business. The business revolved around homemade products, such as horseradish, fruit preserves, homemade catsup, mustard, and pickles. In 1869 Heinz and Noble launched their new company.

The late 1860s was a time of great economic growth following the Civil War. Money was freely available and the protectionist policies of the Republican Party had created vast domestic industrial growth. The year 1869 would be a great one for Pittsburgh with the Boggs and Buhl Department Store opening, Westinghouse Air Brake starting up, Carnegie's Keystone Bridge Company opening. Thomas Mellon would retire from law to open Mellon Bank, and Isaac Kaufman would open his first store. Pittsburgh had added several new banks and the Pittsburgh Stock Exchange opened as Pittsburgh boomed. Just as important was the growth

of a well-paid middle class of craftsmen and storeowners. Pittsburgh was growing, and the prospects for Heinz and Noble seemed unlimited.

The next unique approach of Heinz and Noble on this simple product was marketing and distribution. Vegetable "hucksters" using handcarts or family horse drawn wagons often sold grated horseradish directly to housewives. Heinz had started as a boy using a handcart to peddle garden surplus and horseradish. He was able to add some of his mother's jellies and preserves to his cart. The "huckster" would also sell to the grocer. Hotel and saloon owners would buy high quality from the grocers. Heinz wanted to go to all three directly as well as establish a very high quality line for hotels, bars, and saloons. Heinz realized meat markets were another sales outlet for his product and added them to his wagon routes. His product used high quality white vinegar or malt vinegar as a preservative in which to bottle the grated horseradish. His marketing plan not only included selling to grocers, but warehousing the product until the grocer needed it. This helped reduce the liability and shelf-life problems for the grocer and hotels. High quality, storage, and volume gave him an edge over local hucksters. He branded the product, calling it the line Anchor Brand (later adding a higher quality line of Keystone). Heinz realized that high quality production lines allowed for a lower quality product to be generated and sold as well. Heinz successfully targeted Pittsburgh's best hotels and clubs, such as the Monongahela House and the Duquesne Club. This product segmentation was a natural for food processing, and Heinz used it to his advantage.

Warehousing increased Heinz's volume and increased the geographical area beyond that of the huckster. Volume would not only give him economies of scale but also reduced his glass bottle and vinegar purchasing costs. Warehousing gave him an advantage with grocers, whose stores lacked air circulation, resulting in reduced shelf-life. Heinz pioneered in inventory control methods, which required shelf-life management using first in, first out. The vinegar and horseradish mixture had a shelf-life of six to eight months, which meshed well with the annual planting cycle. Heinz took another revolutionary approach of paying grocers to take any spoiled product off the shelf. After investing so much in quality control and warehousing, he didn't want to lose the customer at the point of sale. His factory had a state of the art stable for his horses, which included steam heating. Heinz was one of the first to tie mass production to mass marketing. His wagons were cleaned daily to assure the image of his product. His horses were always well fed and groomed. This integrated approach to food processing had never been seen before. Quality, marketing, innovative packaging, distribution, and warehousing allowed the company to take over a crafts market of family vegetable gardens.

Growth and success had also brought a downside of dependency on banks.

Within a year, Heinz was selling to the oil-producing boom area north of Pittsburgh. He spent most of the first year traveling to towns by railroad to explore the market area. Heinz was early to realize how the railroad changed business and markets. He made a trip to Philadelphia east and Ohio west each week. He quickly decided that his business could grow with the nation's emerging railroads. He was a voluminous note taker, and his journals represented informal marketing studies. Grocers, restaurants, and hotels with their product usage and volumes were noted. Product line was expanded by market analysis. Heinz also collected recipes as he traveled. Early on, he realized the potential to use the railroad as a distribution network, something that would not have been possible prior to the 1870s. In a few years he had orders in Akron, Warren, Youngstown, Meadville, and Titusville. He even had some small orders in bigger cities, such as Philadelphia, Atlantic City, and Washington. All these points were accessible several times a day by train. Heinz, Noble, and Company had become a regional leader in processing and distribution by making innovations in packaging, rail transportation, and market analysis.

Horseradish offered an easy product for warehousing and transportation because the vinegar was a natural preservative. With a regional distribution and processing network, Heinz wanted to expand his product line. Heinz had always added a small line of jellies and home preserves, but he looked to bigger national markets. In 1871, Heinz and Noble added celery sauce and pickled cucumbers. Pickles required the company to expand acreage on the Allegheny farm and add a shed for processing in Sharpsburg. Heinz's hotel business grew, with his major competition being imported condiments from Europe. The year 1872 represented a milestone year, as a third partner, E. J. Noble, was taken on, and the company name became Heinz, Noble, and Company. The plan now was to expand to the Midwest. The company leased a factory and warehouse in downtown Pittsburgh on Second Avenue. Farmland was added in Sharpsburg. In 1873, they went national with a warehouse in Chicago and St. Louis. In addition, sauerkraut and vinegar were added to the product line. All grocers needed vinegar barrels on a weekly basis. Vinegar was a natural expansion since it was an ingredient for other products. Vinegar production was also added to the St. Louis operation. The management was divided: the Noble brothers handled Chicago and St. Louis, and Heinz managed the Pittsburgh operation.

Heinz's experience as a huckster gave him insights into the distribution network. The horses and wagons were a large part of the overall costs, which required running the wagons at capacity to keep costs down. His

expanded product line, now with vinegar, celery sauce, pickles, and sauerkraut, could be sold directly to housewives and grocers. Variety was important to a good huckster operation; it helped sales and fully utilized the wagon. Vinegar was a natural because Heinz needed it in his own operation, and it was a staple at any grocery. His need was for white vinegar because brown apple vinegar would discolor his product and add unwanted favor. In 1874, there were eight vinegar manufacturers in Pittsburgh, but all produced cider vinegar. The need for high quality and proper flavor forced Heinz to import malt vinegar. Heinz began the production of white malt vinegar made from rye and corn in what was called the "Orleans method." It was a controlled process using a large wood barrel generator. The processing required delicate control of the vinegar bacteria, known as "mother of vinegar." Heinz's use of malt vinegar gave his pickles a distinctive, aromatic flavor. While the main use of vinegar was in his own operations, Heinz bottled it in ceramic jugs to sell as table and pickling vinegar. Heinz became the first domestic company to produce bottled malt vinegar, which was popular with the consumer. His bottling of table vinegar was a marketing innovation for the time. Vinegar was usually sold to the grocer in barrels and then re-sold in pails. Bucket sizes varied, making pricing difficult for the grocer, and bucket handling was difficult for the consumer. The same was true for pickles and sauerkraut. This moving from barrels to bottles was another key product strategy, which allowed direct sales to grocers, and Heinz promoted this strategy throughout his career.

Pickles were a common staple of the 1800s. Pickles are fermented cucumbers, preserved using salt and vinegar. Pickles were processed in various steps, the key one being the pickle-salt stations, where fermentation took place. Heinz pioneered some of the first mass production techniques in his production of pickles. H. J. Heinz, however, credits his brother, John Heinz, with the mass pickle production process.[2] John performed many experiments with pickling temperature and vinegar to maximize crispness and color. Heinz's pickle salt stations were industrial sized boilers, beyond the normal barrel size operations of others. His brother John helped in the design and building of these stations. He pioneered food purity and cleanness in his operations as well. Sweet pickles became a Heinz first and example of product innovation. In 1874, there were many picklers in the business. Most were local operations that packaged pickles in barrels and sold them through wholesalers to grocers. Heinz again focused on the household with glass jars and ceramic pots. He stressed quality, flavor, packaging, and uniqueness. While he was less of a product innovator, in pickles he did add new products and recipes. Heinz, like his fellow Duquesne Club member Andrew Carnegie, believed

in vertical integration (soil to customer) of manufacturing. Heinz wanted to control, and where possible, own the supply and manufacturing chain from cucumbers to glass bottles.

The move into pickles, pickled cauliflower, and sauerkraut was more to add volume to the distribution system and keep his wagons fully loaded. In 1875, Heinz, Noble, and Company had a capacity of 50,000 barrels of vinegar per year, 15,000 barrels of pickles, and 300 barrels of sauerkraut. While Heinz sold in barrels, he pioneered the bottling of many of these products. Pickling at home was a particularly difficult chore. Home "canning" glass jars did not come on the market until the 1890s. Celery sauce was Heinz's second bottled product (he was selling fruit preserves in crocks at the time). Celery sauce represented an opportunity similar to grated horseradish in that it was a time consuming effort. Celery sauce was a sour, pickled mix of cut vegetables that was popular at the time. It was really a type of relish that was time-consuming to make at home. It was a common condiment at hotels and restaurants as well. The real challenge was in its shorter shelf life if not carefully prepared. By 1875, Heinz, Noble, and Company added tomato and walnut ketchup to their Anchor Brand product line based on Heinz's mother's recipe. Ketchups were extremely popular sauces at the time, and cookbooks had many different recipes for their use and preparation. Again, it was a product that reduced time consuming preparation by housewives.

The largest American producer in the 1870s was Williams and Walter in Detroit. Thurber Company of New York was the first to advertise ketchup in the 1870s. Thurber Company was a wholesaler grocer who bought out Jonas Yerkes' bottled ketchup operation. Thurber sold its product as "Baldwin Tomato Catsup" for $1.75 a pint bottle and $2.75 a quart bottle in 1875. Williams and Walter had evolved from a meat market and pickle packer to a true ketchup company (which accounted for 70 percent of their business in the 1880s). However, a number of high quality ketchups were being imported in the 1870s from Britain's Batty and Company, Crosse and Blackwell, and Morton. Heinz looked to sell to the high quality end and use the power of his distribution. Heinz was neither the first to bottle and sell ketchup, nor the only seller in Pittsburgh; in fact, Lutz and Schramm Company had been successfully manufacturing and selling it in the Pittsburgh area in the 1880s. Wholesalers had been selling British ketchups since the late 1830s, and retailers had the product in the late 1840s. Britain imported a full line of ketchups, including tomato, mushroom, and walnut. Ketchup in the 1880s was a true luxury item, selling for $1 to $3 a pint bottle, which was several days' wages for most Americans. Heinz, with homegrown tomatoes and labor, could beat the price on limited volume.

Heinz's products were always distinctive and high quality with exceptional packaging. This allowed him to beat out the competition and move into the packaged household market. While ketchup (called catsup at the time) was a very small product offering for Heinz, Noble, and Company, the company developed a lot of the necessary manufacturing practices. Aimed at the higher quality market, his recipe called for more tomato pulp as well as more sugar and vinegar (about one percent). Roughly twenty to twenty-five tomatoes were needed in a bottle of Heinz catsup. Heinz, Noble, and Company used salicylic acid as a preservative because ketchup would ferment in storage. They struggled with the recipe, taste, and storage. In general, bottled ketchup had a bad reputation in the 1870s because of spoilage. Salt was the major preservative in the product until the 1880s when artificial preservatives such as boric acid and salicylic acid were used. While salicylic acid is similar to aspirin, boric acid is a near poison and causes stomach cramps. Heinz chose not to use any artificial chemical preservatives. With rising sales volume, Heinz's costs increased with the need to purchase tomatoes and ingredients. Ketchup required spices such as cayenne pepper and allspice, which made it the company's highest cost product. Heinz, Noble and Company was, however, competitive in price at $1.15 for a pint bottle and $1.75 for a quart bottle. While ketchup appeared in the Anchor catalog, it is doubtful that much was sold before the bankruptcy. This Heinz, Noble and Company ketchup or catsup was probably his mother's homemade recipe, which Heinz had sold along with horseradish and jellies as a boy.

Heinz and Noble's operation had started with three-quarters of an acre of farmland in Sharpsburg. The land was rich on the Allegheny River floodplain but limited to a few hundred yards on either side of the river. Quality and productive root gardening in Western Pennsylvania was limited to the Allegheny, Monongahela, and Ohio River floodplains. Generally the soils of the surrounding hills were clay and shale, but these floodplains had been used by local Indians to farm for centuries to grow roots and corn. In the 1700s, Scotch-Irish settlers grew rye on these floodplains to make "Monongahela Rye," the grandfather of Kentucky bourbon. By 1875, Heinz and Noble had 160 acres in production, mainly in cucumbers, but still had twenty acres dedicated to horseradish. In the peak period Heinz employed over 170 people. Heinz spent a great deal of time on improving quality and yield of his vegetables. In addition, his processing costs increased so that the firm had 150 employees dedicated to production alone. Heinz started to study the organization of his processing, applying some early principles of mass production to make the transition from huckster to food processor. The factory in Pittsburgh employed women to process the food.

Many might wonder how a food processing giant would evolve in hills of shale and clay not known for vegetable farming. Part of the reason is that by Heinz's early estimates, the actual ingredients amounted to only 15 percent of the overall cost of the product.[3] Labor, packaging, distribution, transportation, and advertising accounted for another 80 percent of the cost, and it was in these costs that Pittsburgh offered a major advantage. Pittsburgh of 1875 was a far different place than the industrial empire of Carnegie and Westinghouse, who had only just started to evolve. It had more foundries and forges than most of the nation, but its signature was glass. With 45 or more glasshouses it was the "Glass Capital," producing half the nation's glass. Glass bottles would be key to Heinz's success; he realized that the package was as important as the product. Bottles were about 2 to 3 cents; while not a major cost, it was significant. Heinz quickly became involved in the design of the bottles and in the 1880s would patent various shapes. In 1890, Heinz patented his famous octagon ketchup bottle.

More importantly, Pittsburgh was the nation's inland transportation hub. The confluence of the Monongahela River and Allegheny River to form the Ohio River made Pittsburgh the nation's largest inland port. The Ohio River gave Pittsburgh direct water access to the east coast and Europe via the port of New Orleans. Rye whiskey, known as Monongahela Rye, had shipped via this route since the 1780s. For glass products, the rivers offered a safer route than rough-riding wagon trains over the mountains. In addition, Pittsburgh was a major railroad terminus and the hub for the Pennsylvania Railroad and the Baltimore and Ohio Railroad. This gave Heinz ease of shipping to all major cities west. There was no better place to launch a national distribution center.

Heinz quickly got involved with Pittsburgh glassmakers to make his wide mouth clear bottles. Initially he purchased what was available, but within a year, he had the volume to have his own bottle molds for production. He worked with Pittsburgh glassmakers such as Philip Arbogast and D. C. Ripley to produce better wide-mouth bottles and clear glass, which required special processing. His tall wide-mouth bottles were mainly corked and sealed, but he experimented with glass stoppers as well. In fact, Heinz favored the presentation of glass stoppers, but corks offered a better seal. Commonly, a turpentine-based, varnish-like glue known as rosin was put on the cork to make the seal airtight. Additional leather, bladder, wax, and wire covers could be used if the product required long storage or shipping. Heinz experimented with all types of seals, noting the results as he traveled to customers. Heinz had an anchor as well as the name "Heinz and Noble" embossed in the glass mold to distinguish his product from that of the huckster "home made" product. The Anchor

design was that of the Christians' design in the catacombs. The anchor was a Christian symbol of hope and reminded Heinz of his pledge to tithe 10 percent of the company's profits. At the time he lacked the equipment to manufacture and apply high-quality labels. Heinz and Noble used Hazel Glass of Wellsburg, West Virginia, as one of its major suppliers by 1873. One of these joint efforts with glassmakers resulted in a beautiful small wide-mouth jar with a horse head glass lid. This product could go directly to formal dinner tables and holiday feasts. Again, going beyond just a product of horseradish gave him an edge over the competition. Heinz also started to experiment with paper labels for his pickles and vinegar jugs. Some product was wrapped in fancy paper, which was popular at the high quality end of the market.

Heinz, Noble, and Company had made progress on many fronts and was truly a national company by 1875. A recent analysis noted that Heinz "built up the business with a rapidity seldom witnessed." The distribution system was one of the best in the food business of the time. Manufacturing, warehousing, and processing were superior to any other company. Heinz had proved to be an innovator in packaging and marketing. Unfortunately, it would be the financing that brought down the company. These financial panics were known to fell even the best of companies. The shortage of money, a huge crop of cucumbers, the seasonal harvest cash requirements, and a national banking crisis combined to break the company. It was unable to pay for shipments of Midwest cucumbers coming to Pittsburgh. Checks bounced, and that led to a supplier and customer panic. Banks called his loans and he could not return the money, which led to bankruptcy. Heinz worked long hours to solve the problems, but little could be done once his credit started to fail.

The bankruptcy would take its toll on Heinz and his family. H. J. himself struggled to get out of bed each day, only to find his family in worse condition. Heinz's father was admitted to a sanitarium, his brother Peter turned to drink, and his wife was suffering from depression. Heinz's and his parents' furniture was appraised for sale to cover debts. His father's family brick business failed. His best friend and partner turned his back on him. Neighbors who had invested heavily in Heinz, Noble and Company avoided him or demanded their money. He had to borrow money for groceries, and could not buy Christmas gifts for his children. The newspaper seemed to applaud his every failure. Finally, he was arrested for fraud. He struggled to meet his church obligations as a Sunday school teacher, feeling embarrassed and having let many friends down. Heinz himself was mentally and physically broken and lay in bed for weeks. For a German, bankruptcy was a moral issue as much as a business and legal one. A young Heinz would recreate himself and his

company shortly, having discovered the DNA of success, the DNA being to market price when the crops were in, not buying futures, advertising, consistent quality, distribution, and inventory control. Heinz would build many companies and become a household name. The lessons learned in the 1870s would be a large part of that success. Heinz would shut the door on his bankruptcy, but did not totally close it, with a pledge to pay back all his creditors and suppliers. This full pay back was far beyond the legal requirements of bankruptcy. The same moral foundation that carried him in these dark days would launch a new company. But first he would have to re-create himself, having suffered a period of depression. His climb would be a personal as well as a business one. But it would be a climb that drew on his German and religious roots, and most importantly, his mother would pull the family together.

2

Beginnings

The Heinz family and H. J.'s in-laws, the Schmidts, were part of a large German immigration to America. The first great wave of immigrants came in the period from 1840 to 1860. This period saw millions of immigrants come to America mainly from Germany, Ireland, Scotland, and Wales. The United States' population went from 17 million in 1840 to 31 million in 1860. Immigrants arrived at the rate of 300,000 a year. They were driven by crop failures and political turmoil throughout Europe. The Germans commonly came to the port of New York and moved west through the Erie Canal. Buffalo, in particular, developed a large German population, as well the Great Lakes region. The 1830s and early 1840s German immigrants tended to be middle class, urban with mechanical skills, or craftsmen. By the late 1840s, the German crop failures brought thousands of small farmers who moved into the Midwestern states to form small German communities. The German immigrant communities were extremely tight knit with strong ties to the motherland. A lot of these immigrants were called "forty-eighters" for the peak year of 1848. The tendency of the Germans to flock together and maintain their language led to the development of parochial schools. German communities retained close ties with their German families and often encouraged them to join them in America. Letters flowed frequently between families on both continents. While the Irish often left Ireland in mock funeral processions to mark a permanent change, German immigrants viewed the passage to America as temporary or an extension of the family. Germans commonly pledged to return as they earned their fortune.

Pittsburgh's rapid economic growth had created a need for German craftsmen and workers. Pittsburgh offered a much faster assimilation path because of the mixing of Germans into Scotch-Irish business concerns. The Germans even put language and origin above their differences of Cathol-

icism and Lutheranism. They found common ground they had been unable to find in the homeland. German Catholics would not join Irish Catholic churches, preferring to build their own. The same was true of German Lutherans, who maintained separate Lutheran churches and schools. Germans maintained their language, but in urban settlements such as Pittsburgh, they tended to be bilingual. Distinct German communities developed in the Pittsburgh area, which allowed the Germans to keep their religion and culture. Letters back to Germany told of economic opportunities and German culture in Pittsburgh, bringing a flood of Germans to the south and north sides of Pittsburgh's Golden Triangle.

The Heinz home at Kallstadt, Germany, dates back to the 1600s (from *H.J. Heinz, A Biography*, by E.D. McCafferty).

Germans lived in a collection of German states such as Bavaria, Wurttemberg, and the largest, Prussia. In addition, Austria had a large population of German speaking people. Turmoil was commonplace. The Catholic-Protestant divide became embroiled in politics, and revolutions spread across the European continent. Political struggle led to economic crisis. Industrialization in the German states slowed. In 1847, Prussia had only 2,268 mechanical cotton looms and 116,832 handlooms. Cheaper automated cotton products from Britain further suppressed the German economy. Even the British countries of Scotland and Ireland lacked the automation of England, forcing more immigration of Scot and Irish weavers. The crop failures of the 1840s across Europe created famine and disease. Tens of thousands of Germans contracted typhus. There was a failed revolution that uprooted the Germans. The political upheaval, disease, lack of jobs, and religious oppression resulted in a wave of immigration to America. The turmoil would also give rise to the ideas of Karl Marx.

The German immigrants prior to 1848 are known as "Grays" versus the later "Greens." The Greens tended to be Democrats because of the nativists in the Republican Party, while Grays like the Heinz families were staunch Republicans. They were also abolitionists, which was a plank of the Republican Party. The Grays also tended to be craftsmen and artisans because of the persecution of the crafts guilds in Germany. These Grays came to America for economic opportunity, and therefore embraced the language, as did the Heinz family. Revolution in the 1840s in Europe had caused the crafts guilds to be banned. In addition, socialism was on the rise and a more radical approach was evolving in Germany. In the 1840s, many German craftsmen had gone to France to learn their trades, but France followed the German approach to free trade in the late 1840s, and German manufacturing all but disappeared. German craftsmen looked next to the United States. German locksmiths, tailors, shoemakers, cigar makers, brewers, bakers, brick makers, and others headed for America.

The Germans brought new techniques for farm productivity to the American Midwest. They moved into heavily wooded areas of states like Wisconsin, where they cleared the land of trees, stumps, and Ice Age rocks. They introduced the use of crop rotation and fertilizer. Overall, the Germans created a more balanced type of small farming, adding dairy production and animal farming. They improved plowing methods, which would give rise to the farm equipment industry in the Midwest. They were the first to bring crops such as cauliflower and asparagus to America. They built some of America's first barns, modernized the production of cabbage, horseradish, and turnips, and pioneered food preserving in America. They added wine making and beer making whenever possible. They stressed self-sufficiency of the small farmer. A German farm had crops of corn, wheat, oats, pumpkins, and potatoes. The Germans brought hearty winter varieties of these crops that grew well in the Great Lakes region.

Even the urban German immigrant brought skills for farming and food preparation. There was always a special vegetable garden and perhaps chickens and pigs. Where possible, they added cotton for home use. The animal mix included chickens, cattle, sheep, hogs, and bees. German farmers talked of the homestead rather than farm; this was just as true in the cities. They were also known for their family plantation and self-sufficient approach to farming and gardening, which promoted large families. German families always functioned as an economic unit, with children helping in the garden and with food preparation. They often produced their own farming implements and built their own wood and brick houses. They had a long-term outlook, saved, and disliked putting money in banks.

More than any farmer, two German Pittsburgh industrialists, H. J. Heinz and George Westinghouse, would change the nature of capitalism and community in business. This change was directly related to German temperament and its impact on modifying the American character. John F. Kennedy, in his *A Nation of Immigrants*, best defined the moderating effect of the traditional Lutheran and Catholic Germans:

> To the influence of the German immigrants in particular—although all minority groups contributed—we owe the mellowing of the austere Puritan imprint on our daily lives. The Puritans observed the Sabbath as a day of silence and solemnity. The Germans clung to their concept of the "Continental Sunday" as a day, not only of churching, but also of relaxation, of picnics, of visiting, of quiet drinking in beer gardens while listening to music of a band.[1]

The quiet, family-oriented, restrained drinking of the Germans was consistent with that of the Scots-Irish, but was contrasted by the temperance of the Puritans and the hard drinking of the Irish. The Christmas season is a reflection of German customs. The Heinz family was representative of immigrant Germans in many aspects, but a bit more conservative in social norms and religion. H. J. Heinz would, early in life, break with most fellow Germans by joining the temperance movement.

The father of H. J. Heinz, John Henry Heinz[2] (1811–1891), was born in the village of Kallstadt, Province of Rheinpfalz, Bavaria. It was a community of farms and vineyards in the fertile Kleinfelt River valley. The Heinz family had a vineyard and market garden farm. The Heinz family had been farmers for centuries. The law of Bavaria favored the farmlands to be given upon death to the head of the family, but subdividing or common family ownership often followed. Unlike most of Europe, which had strict laws of primogeniture (rights of the first born), this subdividing would reduce farm size to levels that were no longer profitable in Bavaria. Bavaria was also suffering from a major economic downturn, and John Henry Heinz was the second born. In any case, John Henry could expect less, not more, in his future. He reasoned his best opportunity would be to go to America. Germans at the time were hearing stories of free land and abundant jobs. Bavaria was also strained by the separation of the Lutheran and Catholic Church. Heinz was a Lutheran in a Catholic district. John Heinz immigrated to America in 1840 at twenty-nine years old, for what was a mainly better economic opportunity, leaving his family behind (an older brother and three sisters). Heinz was not alone, as 1840 marked the beginning of the great "Gray" immigration to America.

H. J. Heinz's mother, Anna Margaretha Schmidt (1822–1899), emigrated from Bavaria with relatives in 1843. The Schmidt family had lived about fifty miles from the Heinz family in Bavaria in the village of Krus-

pis, Province of Kurfurstenten, Germany. Her father was a burgomaster and Lutheran minister. Both the Heinz family and Anna Schmidt came to the German Lutheran enclave of Pittsburgh's south side. German Catholics from Bavaria favored Pittsburgh's north side, known then as Allegheny City, while German Lutherans favored the south side, known as Birmingham. Rich German industrialists (usually converted Presbyterians) favored Allegheny City as well as the Oakland district of Pittsburgh. Anna and John Heinz would meet and marry in Birmingham in 1843. Henry John Heinz was born on October 11, 1844, thus arriving in Pittsburgh before Andrew Carnegie and George Westinghouse. The family would eventually consist of eight children—four boys and four girls (Henry, John, Peter, Jacob, Elizabeth, Margaretta, Mary, and Henrietta).

The Pittsburgh area in the 1840s consisted of the triangular wedge of the Monongahela and Allegheny Rivers. In 1840, Pittsburgh was a bustling manufacturing town, banking center, and inland port. Iron products composed the largest group of manufactured goods, followed by glass products. Pittsburgh was the major user of pig iron in the nation, but had no iron blast furnaces operating till 1858. Pig iron was converted into products such as nails. Allegheny City had a large number of cotton mills, while Birmingham and Pittsburgh focused on manufacturing. The Birmingham area had over twenty glass houses. In addition, Birmingham had breweries, rolling mills, and brickyards. Brick making was the oldest area industry, going back to the days of Fort Pitt. There were over fifty churches, but Presbyterians dominated. The streets were muddy and floods came every spring. Wild hogs and chickens often roamed the streets. The area lacked paved roads except for the main turnpikes. These turnpikes used a very hard cobblestone or wooden planks, but the city fathers were starting to expand the use of cobblestone. There were many small markets with the "diamond" in central Pittsburgh functioning as a grouping of markets, which was typical of Scots-Irish burgs. Passenger pigeons still would darken the skies with flocks of tens of thousands, and pigeon was common in all the markets. Local game such as turkey and squirrel was also popular in the open market.

The population of Pittsburgh was 21,000 with Birmingham and Allegheny City having about 12,000 each when Heinz's father arrived in 1840. The general area population was over 60 percent Scotch-Irish, followed by English and Welsh. Not until the 1830s had a significant number of German immigrants settled in the Pittsburgh area. German craftsmen dominated the glass, iron, and brick industries. Travel to Pittsburgh from the east was by the Erie Canal and Pennsylvania and Ohio Canal, then up the Ohio River to Pittsburgh or by a turnpike-canal–Monongahela River combination directly through the state of

Birthplace of Henry John Heinz at Birmingham, on Pittsburgh's South Side, across the river from the city (from *H.J. Heinz, A Biography*, by E.D. McCafferty).

Pennsylvania. Pittsburgh was already the "Gateway to the West," and America's largest inland port. The Pennsylvania land route, which is how the Heinz Family came, took about four days from Philadelphia. Railroad connections between Pittsburgh and Philadelphia didn't happen until 1852. Charles Dickens visited the city in 1842, describing it as "ugly," "smoky," and "dark." The smoke was the result of the extensive use of coal as a fuel. Dickens compared Pittsburgh to England's industrial city of Birmingham.

Politically, Pittsburgh was a strange mix of Jacksonian Democrats and Henry Clay's Whig Party. The split went back to the Whiskey Rebellion of the 1790s that split the Scotch-Irish between the Jeffersonians and Federalists over taxes on whiskey. In national elections, Pittsburgh voted Democrat, but its manufacturers and Pig Iron Aristocrats were staunchly Whig. At the state and local level, the vote was for the man, not the party. The area was firmly protectionist, requiring Democrats to vote with the Whigs to protect America's iron, glass, and cotton manufacturers. Pro-

tectionism of industry was the overriding political concern. This would play into the rise of the protectionist Republican Party of the 1850s, which brought together protectionist Democrats, Pig Iron Whigs, old Federalists, and abolitionists. By 1860, the city turned to the new Republican Party and would stay in the Republican Party column until the 1920s. The more recent German immigrants tended to favor the abolitionist and protectionist views of the Republican Party. Ultimately, the Heinz family would become firmly Republican, based on its stand for abolition as well as protectionism in the 1850s. In the 1860 presidential election, the strength of Pittsburgh area votes gave a young Abraham Lincoln the White House. The area would be known as the "state of Allegheny" because of its Republican voting strength. In the 1980s, John Heinz (great-grandson of H. J.) would become a Republican U.S. senator, continuing the Republican legacy of H. J. Heinz.

Birmingham was a bustling industrial community of Pittsburgh, getting its name from the great industrial city of England. A wooden bridge connected Pittsburgh and Birmingham over the Monongahela River in the early 1830s, which made Birmingham the industrial arm of Pittsburgh. Beginning in the early 1800s, Pittsburgh industrialists favored building their plants in Birmingham because of its coal and its location on an early turnpike (now Carson Street). Pittsburgh's waterfront wharf was also tied up with trade and travelers. Steamboats poured in daily, as did river barges with coal, pig iron, iron ore, and whiskey. Birmingham, however, lacked the population density of its namesake, and most families had gardens and some animals. Birmingham in the early 1830s suffered a major population decline as a cholera forced people into the country, but most returned and new German immigrants were flooding in by 1840. Three German newspapers were published in the area to cater to the growing German population. The air was thick and dark with coal dust from the foundries, rolling mills, engine factories, glass houses, brick kilns, and breweries.

Pittsburgh, including its river communities such as Birmingham and Allegheny, was better known as the "Glass City" than the "Iron City." Bakewell Glass was known throughout the world for its quality and art. Birmingham had a large coal source in "Coal Hill," known today as Mount Washington. Coal had fueled the growth of the area's glass works, rolling mills, foundries, breweries, brickyards, and manufacturing plants. Coal was also used for heating and cooking. In 1840, Birmingham alone had ten glass factories, seven iron works and rolling mills, two brick works, a foundry, a lead mill, and a brewery. Most of these were located by the Monongahela River. The surrounding area still had many working farms. This was a thriving German community with German language newspa-

pers and even a German bookstore. John Heinz found work among the many brick kilns of the south side. The family started a garden, as in Germany. German farmers tended to very versatile in skills and fiercely independent.

Pittsburgh would leave its mark on the immigrant Heinz family. Pittsburgh Germans were distinctive from Pennsylvania rural and Midwest farming communities in that they were truly bilingual. They would speak German among family and friends, but they took up English quickly to assimilate into the growing Pittsburgh business community. The Germans shared with the area's Scotch-Irish the desire for education at all levels. Pittsburgh Germans moved into business and industry, in particular, the trades such as glassmaking, iron, and brewing industries. Immigrant German farmers commonly knew a little blacksmithing, brick working, and woodworking. Pittsburgh's industrialists were inspirational in their rags-to-riches backgrounds. Bakewell Glass was the pride of the Pittsburgh area and employed many German glassmakers. J. H. Heinz would have a fascination with glass art and glassmaking throughout his career.

Bakewell Glass is worth particular note, since it likely influenced Heinz's approach to the food industry. Englishman Benjamin Bakewell (1767–1844) opened his factory on the south side of Pittsburgh in 1808. Bakewell was innovative and creative, moving luxury glassware onto the tables of American immigrants. First, Bakewell established himself in the high-end market, and he became competitive with European art glass. Bakewell was the first to successfully produce "flint" cut glass, which contained as much as 20 percent lead. Flint glass was known as "crystal" because of its clarity, reflection, and weight. His quality was so renowned in its day that presidents James Monroe and Andrew Jackson ordered complete serving sets for the White House. Then Bakewell invented the pressed glass method in the 1820s, which allowed for the first mass production of quality glassware. He was able to develop a middle-class market for decorated glass, using popular encapsulated political figures such Washington, Jackson, and Lincoln, on utilitarian tableware. Using new manufacturing techniques, he greatly reduced the cost of glass tableware in America, opening low-end markets as well. At the same time Bakewell maintained quality throughout all product lines. Bakewell had also become one of America's first international companies, creating local jobs through exporting. This was the same business strategy used by H. J. Heinz in processed foods. In the 1850s as H. J. was growing up, Bakewell's story was legendary in Pittsburgh before the name Carnegie had risen to fame.

The German Lutherans were considered the lowest on the social scale

with the exception of Roman Catholics of any ethnic heritage. The Pittsburgh area was predominately Scotch-Irish and Presbyterian, with a growing German population in the connected burghs. While the Scotch-Irish dominated industry ownership and politics, they gradually came to accept Germans and even Catholics. It was common for upwardly mobile Germans to convert to Presbyterianism. For Anna Schmit, this option was unacceptable with her deep Lutheran roots. Anna was a deeply devout Christian and would pass her faith on to her son, H. J. Heinz. She often read and quoted the Bible and was active in church. German Lutherans tended to be family oriented in their evangelizing rather than community oriented. They were often seen as "cold" to those outside the family. Many of these German Lutherans, such as the Heinz family, did not drink alcohol, though German beer gardens were common in Birmingham and Pittsburgh. This would also distance them from the hard whiskey drinking Scotch-Irish Presbyterians of the area. "Monongahela Rye" (the Scotch-Irish forerunner of Kentucky Bourbon) was still the favorite alcoholic drink of the area.

At age sixty, H. J. Heinz would reminisce of his parents: "I had an honest father and a mother with a Christ like spirit in whom I had a wonderful faith. She could handle me because she knew how to inspire me; because she knew what to say and how. I live under her many sayings." Anna Margaretta's sayings were often a combination of German proverbs, bible sayings, and family traditions. Her sayings were recorded in Heinz's notebooks and later posted at the plant for his employees. One of his favorites was a variation of the golden rule: "Always remember to place yourself in the other person's shoes." Anna was domineering in all aspects of the young Heinz's life. He learned honesty from his father, but most of his Christian principles were directly related to Anna's training. Throughout his life, he pointed to his mother as the source of his success. In his will, H. J. Heinz noted: "This legacy was left me by my consecrated mother, who was of strong faith, and to it I attribute any success I may have attained during my life."

Upon locating in Birmingham, John Heinz started as a brick maker. There is no record of his previous training in brick making in Germany. The brick making industry was one of the earliest in Pittsburgh, which was rich in clays. As early as 1760, Fort Pitt's walls were built of brick. Pittsburgh remained a "brick" town until the 1980s, with brick homes being the norm. The area had the perfect combination of fireclays and shales, which were the prime ingredients of brick. In addition, the area had an abundance of coal for fuel. The clay, shale, and coal existed in sedimentary layers on the river cut valleys of the area. Besides a rich layer of red clays, there were layers of mixed colors for different grades and

colors of brick. There were at least nine different workable veins of clay, which allowed for a range of products such as house brick, road brick, and firebricks for the glass and steel industries. Typically, the starting brick maker would apprentice for at least three years and would eventually move on to start his own kiln. But the brick maker and bricklayer were not specialized trades in America. The "brick maker" learned all phases of clay mining, mixing, molding, and firing, as well as all methods and uses of brick in construction. Such was the case of John Heinz, who moved to Sharpsburg in 1850 to start his own kiln and brickyard. He also purchased a small house on four acres of land on Main Street. In 1854, John Heinz built a large brick house to hold his growing brood of children. The house was a solid fortress which would be moved down river to Pittsburgh in 1904 and to Greenfield Village in 1954.

Sharpsburg was five miles up the Allegheny River (on the north side of river) from Pittsburgh at the entrance of Pine Creek. The population was around 800 at the time. Like Birmingham, the river-cut hillside had the layered veins of clays, shales, and coal. In 1850, it was a major ferry point to move people and products to the Pittsburgh side of the river. A bridge was built there in 1855. Sharpsburg is located on a crescent bend of the river, which also created rich floodplain soils. The Indians had farmed the floodplain in the 1600s and 1700s. The rich soil came at a price of major spring floods. Pine Creek was also known for its floods in times of heavy rains. Often Sharpsburg residents were forced out or lived on the second story of their homes in the spring. Sharpsburg was an old community, having been bought by Pittsburgh's first industrialist, James O'Hara, from a Seneca Indian chief named Guyasuta. In 1850 it was a small community with a glass and iron works, the largest factory being the Guyasuta Iron Works employing a number of German immigrants. Sharpsburg was also a lock on the Pennsylvania Canal, which made it a rural commercial center. The population was mainly German, but with a growing Catholic German community. The language of the street was German and most of the churches had their services in German. By this time the Heinz family was bilingual, English being a necessity in the construction business. John Heinz would become a member of the Lutheran Church, which favored the use of English.

At eight years old, the young H. J., or "Harry," which was his nickname, was expected to start contributing to the family. His job would be to help his mother with the family garden and help feed the horses. German gardens usually consisted of cauliflower, horseradish, cabbage, turnips, carrots, and potatoes. Asparagus was a German favorite but a long-term crop, taking years to cultivate, and was difficult to maintain on the floodplains of Sharpsburg. These gardens were not hobbies but real

working plots, more like a farm. The Heinz garden covered several acres. The family would depend on it to feed its members to a large degree, and there was a lot of hard work involved. When Henry was nine, the family had increased to ten, requiring a lot of pitching in by all. Henry would take baskets of garden surplus to sell to the citizens of Sharpsburg. It was a duty that Henry seemed to enjoy, and probably planted the seed of capitalism in the young boy. At age ten, his parents gave him three-quarter acres of his own to encourage him. High gravel embankments were built to protect the garden against floods. At age twelve, encouraged by his mother, he increased his garden to three and a half acres. Heinz used a wheelbarrow at first to increase his Sharpsburg market. Using his profits, he bought a horse and cart, expanding his business to merchants in the area. The Heinz house had a large "cold cellar" or "root cellar" to store carrots, potatoes, turnips, and cabbage over the winter months. Dried fruits were stored in the attic. Spring floods would often destroy these cellars, requiring much maintenance through the summer.

The Heinz family was probably growing tomatoes as their popularity grew in the 1840s. Tomatoes were not native to North America or Europe and were uncommon in this country until the 1830s. The tomato is believed to have come to North America via South America and Spain. Many considered the tomato poisonous; in Pittsburgh, the Scotch-Irish held to the idea that the tomato was poisonous into the 1830s. It did, however, gain popularity in the late 1700s in the Southern states. Tomato ketchup recipes started to appear in Virginia in the 1820s. One of the most popular recipes was by Thomas Jefferson's cousin Mary Randolph. Ketchup recipes helped popularize tomato cultivation. The French and Creole in New Orleans increased the cultivation of the tomato in the early 1800s. At the time, New Orleans was becoming a key port of entry for German immigrants, which seem to have influenced the use of catsup in the North. German immigrants favored its use in New York by the 1830s. Major German language cookbooks in Cincinnati, Philadelphia, and Harrisburg contained many tomato recipes.[3] New York restaurants considered tomatoes and tomato sauces a delicacy. Charles Dickens was served fish with tomato sauce in 1842 while visiting New York. The German *Die Geschickte Hansfrau* published in Pennsylvania had some of the earliest American recipes for "Tomato Catsup." Pittsburgh Germans were some of the earliest to have tomatoes in their gardens. In 1848, *Scientific American* published a recipe for British "Ketchup," consisting of tomato base, vinegar, allspice, cloves, pepper, and garlic.[4] Pittsburgh's trend-setting hotel, the Monongahela House, was serving tomato dishes by the late 1840s. Stuffed and baked tomatoes were included in upscale restaurant fare. In 1840, the *Pittsburgh Intelligencer* estimated that 50,000 bushels

of tomatoes were grown in the Pittsburgh area. A young Heinz was selling his mother's catsup, pickles, jellies, and excess garden vegetables along with horseradish in the 1860s.

Gardening at the time was both art and science filled with folklore and sayings. Heinz's mother loved to use the sayings as a means of teaching religion and gardening to her children. The Germans looked to Candlemas Day, or what modern Americans call Groundhog Day, as a weather indicator. "If Candlemas Day be bright and clear, expect a late spring." German Protestants adapted the feast of the Purification of Mary (Candlemas) to Groundhog Day in Pennsylvania. Christmas day was also considered an annual predictor of weather. A clear St. Joseph's Day (March 19) predicted a fertile year. Most Germans and Europeans purchased the farmer's almanac for general weather predictions. The almanac often had planting dates for various seeds, sometimes according to various saints' days. Animals and nature were watched closely for signs of when to plant or harvest. Many Germans kept a log of weather and gardening as part of their more scientific approach to gardening. Young Henry, who kept journals throughout his life, would take up these practices. Germans were taught to save and label their best seeds. German immigrants commonly brought their best seeds with them from Europe. For the German, gardening was serious business and science was freely intermixed with folklore.

The family garden was only part of young Henry's life; he also was known to help dig potatoes for a small wage at the neighbor's farm. The family story is told that the neighbor offered prizes one day for digging the most potatoes, and young Henry won third prize (a little over a nickel). By age ten he was working on the Pennsylvania Canal and at his father's brickyard, which was common for working-class boys of the time. Both of these experiences played into the education of H. J. Heinz. He was a towpath boy, guiding horse drawn canal boats down river to Allegheny City and Pittsburgh or from Freeport aqueduct to the lock at Sharpsburg. The Pennsylvania "Main Line Canal" was an engineering marvel moving towboats over the mountains from Philadelphia to Pittsburgh. It required the use of a railroad in sections to overcome the mountains. It used an aqueduct to cross the Allegheny River north of Sharpsburg at Freeport, and then traveled thirty miles to Allegheny City (Pittsburgh's North Side) and crossed via aqueduct to the City of Pittsburgh. The canal was the key to Pittsburgh's economic success. It offered a great education in commerce for a young boy and also an opportunity to expand his vegetable business.

On December 10, 1851, eight-year-old H. J. Heinz was caught up in the buzz of the first train to arrive in Pittsburgh from Philadelphia. Trains

would be another technology that Heinz would fully embrace in his business practices. The trip took over 20 hours, much better than three and half days via the canal. Actually, the 1851 trip included part of the Portage Railroad, which was part of the canal system. The crowd at the Pittsburgh station that day included a young Andrew Carnegie and Pittsburgh songwriter Stephen Foster, whose brother William was the locomotive engineer. The achievement had required a tunnel at Braddock, eight miles up the Monongahela River from Pittsburgh. By November of 1852 with daily service between Pittsburgh and Philadelphia, the trip took 15 hours. A few months earlier the Fort Wayne Railroad had made western connections from Pittsburgh to Cleveland and Cincinnati. Legal battles held up a direct rail connection of the Pennsylvania Railroad and the Fort Wayne Railroad until 1858. The railroad connection would be the end of the Pennsylvania Main Line Canal.

At age ten, Heinz was actively involved in his father's brickyard, and this experience was just as important to his future in food processing as gardening. The brickyard taught him bulk material processing. Bricks were made to various recipes of clay types and amounts of crushed shale. While the biggest use of bricks was in construction, there was a booming business in refractory-type bricks for iron and glass furnaces. Refractory bricks required special mixtures of clays. The raw materials were milled into a paste and then molded into shape. These mixtures required much testing and quality control on each batch recipe. Bricks were then fired in kilns based on their chemistry; temperature control was critical to the end brick properties. The quality of brick often varied widely among brickyards, and quality was a sales attribute. Bricks were also made for special construction projects with the brickyard being responsible for construction. The attention to chemistry, science, and processing were critical to the overall education of H. J. Heinz, and this would distinguish him from small farm processors. Heinz also learned the art of industrial experimentation and record keeping. Throughout his career, Heinz kept a notebook of product recipes from food to shoe polish. His brickyard experience allowed him to move from a community food processor to a regional, national, and international food processor.

Young H. J. started his education at the Lutheran Church in Etna. The Evangelical Lutheran Church was three miles away and Heinz walked the distance. Pittsburgh started some public schools in 1834, but Germans preferred their own schools. The pastor was commonly the teacher. The congregation paid for the teacher's salary. Heinz's education appears to have been outstanding. He had an excellent handle on the speaking and writing of English. His handwriting was very good, and his math skills far ahead of the average. Most Germans included English and American

history, but also used German language and culture in their education. The bulk of religion was taught in the home. Heinz's mother believed in memorization of Bible verses and then discussion of the principles behind them.

Heinz learned the importance of recipes and note taking from his mother. Germans in Bavaria were known for their secret family recipes for sauerkraut and pickling. The art of food preparation was similar to that of brick making—recipes were guarded secrets in both. Henry worked with his mother in the kitchen and supervised the younger children in the garden. He learned measurement in the kitchen as well as at the brickyard. He also learned to keep a garden record of seed and plant success. He was a natural entrepreneur: he invested in a horse (Old Baldy) and a cart at age 12 to expand his sales and add grocers to his route.

The food distribution system around the Pittsburgh area was similar to that of most of the Northern States. Rural and semi-rural areas depended heavily on their own resources. Urban centers such as Sharpsburg had a mix of large gardens, hucksters, local grocers, and butcher shops. German families supplemented their large gardens with bulk products from the grocery store. The grocer would be given a list and a stock boy filled it from the stockroom. Like their rural counterparts, urban German families made sauerkraut, pickles, and pickled vegetables in barrels or smaller ceramic crocks. Vinegar needed for food preservation was purchased by the barrel. Some fruits were cooked down into heavy syrups to be stored in bottles. The Mason screw lid jar was patented in 1858, but practical production waited till the 1880s. Home canning did not prosper until the 1890s when mass production and improvements in the Mason jar brought down the cost. German immigrants did however, become very productive as urban gardeners. Most were dependent on grocers and local cart hucksters, but had a cold cellar for storage.

In the 1840s, Pittsburgh was one of America's larger cities, having wholesale and retail grocers. The German firm of A. G. Reinhart on Liberty Street was one of Pittsburgh's largest grocers. Reinhart was both a wholesaler and retailer. Reinhart also specialized in the fancier imported products that came via canal, river, and wagon train. By the 1850s and 1860s, Heinz had plenty of opportunity to study his customers. Reinhart's was the closest thing to a modern market, and especially carried a wide variety and many specialty items. But the best business model for Heinz was the national supplier Underwood. Underwood supplied pickles, ketchups, white onions, oils, jams and jellies. Underwood had been a national brand name as early as 1845 with a good national distribution through wholesale grocers. Firms like Reinhart advertised the name Underwood. Even more striking to the young Heinz was the beautiful glass packaging of Underwood. Daniel Underwood had partnered with

Boston glassmakers, and his retail stores were known as "glass shops." His products were being exported over the world by the 1840s. Underwood had started in Boston in 1822 and made a fortune packaging specialty foods, starting with mustard. By 1839, Underwood was shipping his ketchup throughout the country via the river and canal systems. Underwood applied the "canning" technique of Nicolas Appert, who developed a sterilization method of heating the bottle or can to 210 degrees in salt water for five hours before sealing. The introduction of the pressure cooker in 1879 allowed for higher temperatures and cut the time to thirty minutes. Sealing while hot created a slight vacuum, and the product was sold as "hermetically sealed." Appert's process increased the storage life of ketchup significantly, allowing him to develop a national marketing strategy.

When Heinz started his business in 1869, Underwood was already shipping mustard, ketchup, pickles, and canned meats to most eastern cities. Underwood was selling bottled ketchup in the 1830s for $3.25 a bottle. Underwood's ketchup was an "evaporated" product, where by slow heating water was removed to thicken it. The customer could then add water to return it to the desired consistency. At the Philadelphia Exposition of 1876, Underwood had mushroom, tomato, and walnut ketchup on display. The evaporated product, which lowered packaging and transportation costs, fascinated Heinz. Underwood not only used glass but labels to brand and advertise. The evaporated product also allowed consumers to make heavier tomato based sauces at home. Heinz Pittsburgh began experimenting with evaporated horseradish, which he later introduced into his product line. The success and fortune of William Underwood by the 1860s offered Heinz a real idol to follow. In 1870, Underwood had a trademark in its "Underwood Devil." The Underwood Devil remains the oldest trademark in use in the United States, and is best known today on its "Deviled Ham."

Still, most of Heinz's education and business sense came from his parents. For a young German the making of sauerkraut was a rite of passage. The sauerkraut making ritual would begin in late fall after the potato harvest. The process is known today as salt curing or pickling, the lactic fermentation of vegetables. It is the lactic acid that acts as a preservative, but the chemistry would have been unknown to Heinz. The exact recipe was a German family secret, but the general processes can be described. Salt was the key to the operation of pickling. Technically, salt is not needed for pickling, but it plays a critical role in the process. Salt acts as a preservative until the lactic acid forms by fermentation. Sauerkraut was made in barrels previously used for sauerkraut or wine making. The old barrel therefore contained the bacteria for fermentation process. Polish

recipes often called for the use of bread to speed up the fermentation process. The bottom of the barrel was covered with coarse salt, then alternating layers of cabbage with spices. Cabbage would be cut and scalded it in hot water prior to the layering in the barrel. The spices varied widely, but common ones were peppercorns, juniper berries, dill, currant leaves, fennel, anise seeds, cloves, savory, and horseradish. Some Moravian recipes called for apples and onions to be added. The Heinz family used allspice in their recipe with other spices. A German rule of thumb was two pounds of salt per dozen cabbages. The barrel was filled to three-quarters, and a lid with a heavy weight capped it. When the fermentation started, the lid dropped and was covered with the brine. The cover was critical to prevent rotting from oxygen entering the mix. The fermentation process took two weeks, and then the barrel could be drained and stored for winter.

In his teens, Heinz learned gardening and preserving. At age fifteen Heinz started to work as a bookkeeper for his father's brick business. Besides learning the trade, he still helped with the garden and maintained his small vegetable business. A year earlier, H. J. was sent to newly opened seminary in Sharpsburg, having been confirmed in the Lutheran faith and graduated from his elementary studies. Henry's mother had hoped he would be a minister, but his interest was clearly in business. At fifteen, Henry was working several jobs, but expanding his garden produce sales seemed to be his passion. He got involved with preserving fruit and vegetables for further sales. His specialty became horseradish grated, pickled in salt and vinegar, and then bottled. Horseradish was extremely popular with the Germans and English in the area, who used it with beef and sea food. Pittsburgh hotels served it with oysters. Horseradish grew well in the soils of western Pennsylvania. Its preparation in the kitchen was a tedious and difficult task, and Heinz learned that he could sell "convenience" to housewives of the day. Prepared horseradish saved the housewives time as well as avoiding scraped knuckles and eye irritation. This idea of packaged convenience food was a boon to his future businesses.[5]

Another insight would be the importance of quality; he was not the first to sell bottled horseradish, but he focused on a quality product. The food industry prior to the Food and Drug Act of 1914 suffered from poor quality by design. Packaged horseradish was filled with cheap extenders such as grated turnips and even sawdust, to say nothing of insects, sand, dirt, and animal waste. Heinz not only maintained high quality, but made it part of his sales strategy. He switched to more expensive clear or light aqua glass bottles to emphasize the quality. He preferred the clear bottles but his volume did not allow for special glass orders. Green and brown

glass bottles were the norm in packaging, since these were the base colors of melted glass without special processing. The green and brown helped hide the fillers and low quality of the product. The use of clear bottles also led him to the use of clear distilled vinegar in the horseradish instead of the cheaper brown colored cider vinegar. Heinz expanded his route to include the grocers of Allegheny City and Pittsburgh. His high quality product opened up new markets with upscale grocers, restaurants, and hotels.

Heinz's world had a much different diet than that of today. American fare was extremely seasonal with a summer diet and winter diet. Fresh meat was the main component prior to the Civil War, but salt pork was popular with the lower classes. In general, salt pork was the foundation of protein in the American diet as well as a flavoring in many vegetable dishes. Urbanization brought a need to replace game based diets of the early settlers; however, even urban residents had a pig or hog in the back yard. In the summer all types of fresh vegetables were available, but meat was still the focus of the table. Sauces and condiments were popular because of the bland menu. Most families ate a monotonous repetition of food day after day. In the winter months dried fruits and pickled vegetables were popular. Germans, in particular, always served sauerkraut and pickles. The British at Fort Pitt, however, had eaten sauerkraut in the 1760s. The British Navy had used it as a source of vitamin C, and sauerkraut was easily to store. The non–German immigrants in Pittsburgh continued to eat it into the 1900s. The majority Scotch-Irish of the Pittsburgh area readily adopted the German colonial diet with some variations. The English preferred their sauerkraut heated and eaten warm. Germans preferred their sauerkraut cold. By the Civil War, most Pittsburghers, German and non–German, preferred the sauerkraut warm cooked with meat. Grocers sold sauerkraut in ceramic crocks or directly from the barrel. German families typically produced their own from garden cabbage. Visitors to Pittsburgh in the 1800s often remarked about the large cabbage patches in the German sections.

Potatoes were stored and used in all seasons. Bread was also common in all seasons. Items like chicken pot pie and stews were popular. Stewed sweet and sour rabbit was also very popular with the Germans. Germans, in general, loved the sweet (sugar) and sour (vinegar) combination in their foods. There was a great variation of diet between the Northern and Southern states as well. For example, baked beans were common in New England and cornmeal bread was everyday food in the South. Germans tended to fry their meat, often adding butter and lard. The English preferred "cold" slaw (unfermented) versus the German sauerkraut, but both used sauerkraut year round because sauerkraut could be

stored in cellars. Sauerkraut and pickles were preserved in stone crocks and available at grocers. Lettuce was served in the summer with hot bacon or salt pork drippings. The lettuce salad of various fresh vegetables became popular only in the twentieth century (primarily made popular by H. J. Heinz). Rural diets in general had more vegetables. During the Civil War, tin canned beans and meat were common among soldiers, but home canning in Mason jars didn't come into popularity until the 1890s. Meat and fish were available salted, while fresh meat was mainly deer, pork, and squirrel.

Sauces were often critical to flavor repetitive, monotonous, and bland meals. Sauces had been popular since the 1700s for fish and meat dishes. Ketchups of the early 1800s were not tomato based, but might be made from the pickling brine or "liquor" of a vegetable or nut. The liquor, being high in salt and vinegar, imparted a long shelf life to the product. Spices were then added to the liquor for further flavoring. Walnut and mushroom ketchup was made from the pickling liquor with strong flavors added. Worcestershire sauce was a combination of mushroom and walnut ketchups, and was popular with both German and English immigrants. Most of these ketchups were hand made with endless recipes being published. These strong sauces were used for flavoring in stews and soups. Tomato ketchup didn't become popular until the 1850s, but recipes go back to the early 1800s. The *American Farmer* published a tomato ketchup recipe in 1828 consisting of tomato, salt, vinegar, allspice, red pepper, black pepper, and mustard. The tomato ketchup was recommended for steak and fish.

Most people ate three meals a day, as good appetites were considered healthy and weight gain was a positive. The largest meal was "dinner," but it occurred at midday. This slowly changed with the industrialization of the late 1800s. Workers initially carried their dinner pails to the factory or mine. Pickles and preserved meat were common in dinner pails. Those with larger families had their dinner prepared near noon and carried by a child to the factory or mine. The term lunch came from the Spanish term "luncheon," which meant a light meal. The term "lunch" was first used in print in 1812[6] and slowly came into the American lexicon after the Civil War. Restaurants known as "lunchrooms" became popular for urban office workers in the 1850s. The term "lunch counter" was first used in print in 1869.[7] As lunch as a meal became popular, the evening meal became known as dinner, but occurred much earlier in the afternoon than today's dinner. In the 1870s, taverns and "hotels" became common in mill towns, offering drinking and meals. Often food was offered as an enticement for drinking patrons. Combinations such as "oyster houses" were also popular in the 1890s.

Ethnic feasts were more common than today. Germans, in particular, had additional feasts centered on saints' days such as St. Martin's (November 11), St. John's Eve (midsummer June 23), Dreikonigsfest (Three Kings, January 6), Shrove Tuesday (Tuesday prior to Ash Wednesday), St. George's Day (April 23), Himmelfahrt (Ascension Thursday), St. Nicholas' Day (December 6), St. Leonard's Day (November 6), and St. Michael's Day (September 29), to name a few. These feasts often consisted of a roast goose, duck, pork, sauerkraut, potatoes, and cranberry sauces. The Germans practiced "groaning board," serving guests more than they could possibly eat. Another German tradition was "seven sweets and seven sours" at each feast. Some feasts called for special foods such as roast goose for St. Martin's Day. All ethnic groups tended to have their own set of feasts. The Italians had their "seven fish" setting for Christmas Eve. Germans and most nationalities favored roast pig for New Year's Day. The Scotch-Irish and Irish proved the most flexible, adopting the diet of all ethnic groups. These feasts commonly had many sauces as well. These feasts tended to break up the blandness of the daily diet.

Pittsburgh by the 1850s had become one of America's largest cities. It was the transportation center for river, turnpike, canal, and railroad traffic connecting for points west. It was a hub of political and business trips and had many first class hotels. Heinz started to include among his customers the best hotels, such as Pittsburgh's Monongahela House, offering high quality products like his bottled horseradish. In 1840, the Monongahela House was built as a first class hotel. It had five stories with 180 rooms, and a world-class black walnut winding staircase. The ballroom could hold 1500 and was considered the best west of the Alleghenies. Its guests would include eight presidents: John Q. Adams, Andrew Jackson, Zachary Taylor, William H. Harrison, Abraham Lincoln, Ulysses Grant, William McKinley, and Theodore Roosevelt. They also included several presidential hopefuls and out-of-country guests such as King Edward VII. The bar served only hard Scotch-Irish whiskey, allowing those who drank beer to find a near by German beer garden. Fresh oysters and sea fish were always on the menu, and horseradish was a natural condiment. The pig iron aristocrats tended to be well educated and loved the theater and the arts, bringing such artists to the Monongahela House as Mark Twain, Ralph Emerson, Horace Greeley, Henry Beecher, and Thomas Benton. Including hotels in his distribution caused Heinz's sales to rocket. At age seventeen, Heinz sold $2400 (over $40,000 in today's dollars) worth of horseradish. He now had brought his two younger brothers and two sisters into the vegetable business.

Food distribution was complex in the mid 1800s. Vegetables from

farms and gardens were sold in large farmer markets. Central markets such as Pittsburgh's "Diamond Market" became centers for food distributors and importers. The central market started to function more as a wholesale operation for the area's grocers. In addition, large hotels, saloons, and restaurants purchased daily from the central market's wholesalers. Smaller farmers often turned huckster to bring vegetables, milk, eggs, and some prepared products directly to the home. Even as a young huckster, Heinz went directly to the grocers and hotels with his products. He moved then from a huckster to a supplier to grocers and hotels, which meant more volume and less sales time. Hucksters were limited in their distribution because of the time involved in selling to individual houses. Young Heinz wanted to move beyond the long day of small profits as a huckster. This approach brought him more profit, and grocers and hotels got fresher and cheaper products as well. He did sell to the large wholesalers as well but preferred to go directly to the area grocers. He also opened new channels such as butcher shops, which could also be sold meat condiments such as horseradish. Heinz sold also to the central market, and purchased products there as a distributor for his local grocers as well. This kept his cart filled on his eight-mile trip to market and back. He lined up grocers all along the way between Sharpsburg and Pittsburgh.

The grocers of the 1870s and 1880s were much different than those of today. Grocers were small businesses established in local neighborhoods. Butcher shops were distinctly separate because of the smell and blood; the lack of sewage systems made them a type of nuisance. Grocers mostly were supplied in bulk, using barrels. The grocer got deliveries from the wholesaler or purchased at the central market. The grocer commonly marked up goods 100 percent over the wholesale price. There was very little branding, and barrels carried only the product name. Standardization was non-existent and weights and size of the barrel contents varied widely. For example, the grocer sold pickles on a price per pickle from barrels with a mix of large pickles and small, often resulting in a loss for the grocer. Mustard, pickles, ketchup, crackers, and most products came in barrels and were distributed to the consumers in bales, boxes, and small crocks. The consumer, without good refrigeration, could not buy large of amounts of liquid, fresh vegetables, or meat. Perishable products going bad and short shelf life products presented a problem to both the grocer and wholesaler. A grocer would also sell kerosene for lamps, candy, whiskey, and salted meats. Prices were often negotiable and haggling was common. The majority of purchases were on credit with a weekly or monthly billing system. In economic downturns, the grocer was often short on cash and bad credit mounted. Heinz learned early on how to

capitalize on the weaknesses of the "country store" system. Heinz's daily distribution route allowed grocers to reduce inventory and supply fresh products. Heinz believed there was a fortune to be made.

Heinz continued his duties at his father's brickyard and attended Duff's Mercantile College in Pittsburgh. The idea was to learn double entry accounting so he could maintain the books of his father's brickyard. Duff's was a type of evening business college. It focused on offering practical business courses rather than degrees. Heinz would take several courses, as did many of Pittsburgh's great industrialists like Andrew Carnegie. Duff's specialized in bookkeeping and accounting and taught business investment. Many of its "graduates" used the new approach of cost accounting, which favored pouring profits back into the business, an approach exemplified by Pittsburgh industrialists. Heinz continued to expand his horseradish and vegetable business. Heinz was said to have invested his big year revenues of $2400 (over $40,000 in today's dollars) back into the business, buying better seeds and fertilizer. Heinz seemed inspired by Pittsburgh business to pioneer the "industry of food processing." The cost accounting approach allowed new products and processes to be better evaluated. Heinz was every bit as innovative as his heavy industry counterparts.

Heinz was blessed with the German affinity to save. Through his teenage years, Heinz saved and invested in his father's brickyard. At seventeen, he was said to be a partner in the business, and by twenty-one he was part owner in the brickyard. He invested in new heating and drying equipment and kiln design to allow bricks to be made through the winter months. These types of investments came from his focus on cost accounting. This was an important advance, allowing inventory to build in winter for spring and summer sales. These upgrades improved productivity and sales and reduced costs per unit. It also allowed the company to win more jobs and expand its construction. He promoted the construction business to develop markets for his bricks. This was forward vertical integration, a business concept he would apply in future businesses. The young Heinz also became adept at the logistics of purchasing and delivering coal. Heinz would often treat this as a side business, making money on delivering coal using river barges. Coal was making money for many Pittsburgh businessmen such as Thomas Mellon at the time. Heinz often ventured into ancillary businesses. One of the less successful was that of selling ice; this experience was often recalled by H. J. throughout his career.

Heinz retold the story of his and his father's venture into the ice business to his salesmen. Ice was in high demand in 1862 in the boomtown of Oil City, about eighty miles north of Pittsburgh. Oil City was the loca-

tion of the discovery of oil by Edwin Drake in 1859, and Pittsburgh was the center of oil refining. Henry was put in charge of a partnership to cut, transport, and sell ice, which was selling at a record high of five cents a pound. The year ended with an excess of ice and the price dropped to one cent per pound. One of his trips from Oil City to Sharpsburg allowed him to utilize the empty cart. About half way to Sharpsburg, the nineteen-year-old Heinz stopped in the town of Butler to make a deal to deliver produce to Etna and Sharpsburg. His delivery of eggs and butter amounted to a profit of 25 dollars. This was typical of his sales aggressiveness and love of making money. Heinz used the story in later life to point out how waste in transportation could be turned into a profit. One of his early biographers believed that his success in business was related to "hatred of waste which he had learned in his boyhood." It is interesting that he used the term "waste," which today is the cornerstone of the lean manufacturing philosophy—that every effort should contribute to corporate profits. This simple yet powerful principle was a result of his common sense rearing and his accounting training at Duff's College.

One interesting gap in the story of H. J. Heinz's youth was his attitude towards the Civil War. There is nothing recorded about his attitude toward the war except that he firmly supported Abe Lincoln, as did his whole family. Henry was eighteen at the start of the Civil War, which would have been the prime age for a recruit. German Lutherans were fiercely anti-slavery, but they were also pacifists. This was even truer of the pre–1848 German "Grays." John Heinz and family were known for their conservative religious views, which included pacifism. A $300 substitute fee could avert the draft of 1863. Furthermore, local draft boards excused boys important to family businesses, which was the case with Heinz. There was little pressure in Allegheny County because of the record number of volunteers. The German Sharpsburg board would have been respectful of these religious objections as well. Allegheny County would eventually supply 24,000 troops, and almost all of them were volunteers, which meant there was little need to draft boys. The lack of information on Heinz's stance can be explained by resentment in the North of Germans because of their pacifist stand. H. J. Heinz, however, was not a pacifist.

3

Starting Life

By age twenty-one, Heinz was running a highly successful vegetable business and was a full partner in his father's brick making business. He was a master bricklayer and an accomplished bookkeeper. He was a real asset to his father, who struggled with the books and financial side of the business. H. J. Heinz had expanded his father's brickyard into construction and building to bring in new profits. Heinz made advances into side businesses as well, including coal distribution. While he was knowledgeable in manufacturing, accounting, and distribution, Heinz favored selling products and would always be a salesman at heart. Heinz believed the salesman to be someone special and a true professional. Products to Heinz were a reflection of customer needs and wants. He had already demonstrated creative genius in transforming customer needs and wants into new products and improved processing in both vegetables and bricks. He had won his father's confidence in his ability to run the brick business, and in 1868 John Heinz returned to visit Germany, leaving H. J. in charge of the brickyard.

In 1868, Henry purchased a brickyard of his own in Beaver Falls, Pennsylvania. It was a partnership with Sharpsburg neighbor and friend Clarence Noble. The Noble family was one of Sharpsburg's oldest and wealthiest. The brickyard was on the Ohio River and had some of the best clays in western Pennsylvania. Like at Sharpsburg, there were veins of coal beside the clay deposits. The river location allowed brick to be shipped throughout the Pittsburgh region. Heinz also hoped to have a small coal distribution business between Pittsburgh and Beaver. There were major profits available in coal, which fueled the industrial city of Pittsburgh. Henry had learned the logistics of coal through his work with the brickyard, which used it for fuel. Under the partnership agreement, Noble would move to Beaver Falls to manage the operation. Heinz

planned to do the sales work for the brickyard, while remaining a partner with his father and maintaining his vegetable business. This type of multitasking was characteristic of Heinz throughout his career. Rail service connected the region and opened up extended distribution for not only brick, but also vegetables.

While his father, John Henry Heinz, was in Germany with the family, Henry launched a project to build a new brick home for the family as a surprise for his father. Henry had expanded the business into the construction of homes, and he had become a skilled bricklayer. Heinz had already built a number of brick homes in the Allegheny Valley. To raise the money to build his father's house, H. J. collected debts that had been written off as uncollectible. The house was a solid brick, two story Victorian. John Heinz returned from Germany to a new home. A cousin and accomplished gardener, Frederick Heinz, returned with the family. The year 1869 was a monumental for H. J. Heinz in many ways.

While Heinz had invested in a new brickyard and remained a partner in his father's brickyard, his heart was in the family vegetable garden. The garden was utilizing almost four acres by 1869. With his two brothers and two sisters working with him in the garden, he was able to expand sales within a thirty-mile radius. His high quality and clear glass innovation allowed him to command a premium in the Pittsburgh market. He was making three delivery trips a week to Pittsburgh. There were 43 wholesale and retail grocers in Pittsburgh, most of which did business with Henry. He serviced as many as thirty grocers along the way. He also had considerable business with the 26 hotels in Pittsburgh. He was running at capacity for his four acres but dreamed of further business by utilizing the evolving railroad connections. In 1867, the Pittsburgh, Fort Wayne and Chicago Railroad established a line following the old Pennsylvania Canal through Sharpsburg. This railroad also connected Sharpsburg to points west and north. This opened up a direct link to the oil boomtowns of Pennsylvania. H. J. Heinz visited the Oil City area and found business that was beyond his present capacity, so he started to add garden space. He traveled by rail the Ohio cities of Warren, Niles, and Akron, finding a similar market for horseradish. These early trips generated market studies and pages of notes. He realized that Harrisburg and Philadelphia to the east were also within a day's reach by rail. Heinz was truly a visionary in seeing the impact of the railroads on markets. The potential was now enormous, and would command all of his personal attention.

Heinz, Noble and Company would manufacture and sell Anchor Brand horseradish with dreams to expand into other products. The selection of "Anchor" as a brand name appears related to its symbol of the

The house built by a young H. J. Heinz for his father in Sharpsburg, Pennsylvania (from *H.J. Heinz, A Biography*, by E.D. McCafferty).

Christian faith. Like his mother, Heinz started any new business or life project was started by prayer with God. They started out slowly using a shed on the Heinz farm to produce and warehouse horseradish. They held off the purchase of more land, instead shifting more into horseradish and cabbage, until December 1869, when Heinz purchased three-quarter acres in nearby Millvale. He added homemade jellies and sauerkraut to the product mix. They hired several local women when needed to increase production and warehousing. The original house built by John Heinz in 1854 became the first office and factory for Anchor Brands. They built another large shed for storage. The following year, 1870, they purchased the house next door to expand capacity. Heinz took to the road to push sales, while Noble did most of the financing.

While initially a home business, Heinz applied the best processing science and packaging available. Heinz applied the preservation techniques of Nicholas Appert, who had published the *Book for all Households, or the Art of Preserving Animal and Vegetable Substances for Many Years* in 1810. Accordingly, glass horseradish bottles were immersed in boiling salt water for about thirty minutes. Heinz's product and packaging were better than most of the imported and commercial domestic products available. Packaging had always been a unique part of Heinz's business. Living in the "Glass City" of the times, he loved to use special bottle shapes as well as clear glass. Even prior to Heinz and Noble, Heinz had pioneered the use of glass table decanters with glass lids. As business volume increased under Heinz, Noble and Company, Heinz designed his own glass mold for his bottles and glass decanters. The table decanters had an "embossed" anchor on the side. More basic bottles had Heinz, Noble and Company embossed in the mold. He loved to visit local glass houses to get ideas on packaging. As they moved to labels, the heading was "Heinz, Noble & Co.—Anchor Pickle and Vinegar Works." By the end of 1869, Heinz had created a solid business with his hard work.

On September 23, 1869, Henry married Sarah ("Sallie") Sloan Young. Sallie was Scotch-Irish and Presbyterian. Her parents had immigrated to Pittsburgh in the 1840s from County Down, Northern Ireland, and were part of Pittsburgh's prosperous upper middle class. Scotch-Irish were the dominant nationality in Pittsburgh, and Scots-Irish Presbyterians could open many doors. The Rev. Ezra Morgan Wood married them at the Methodist Episcopal Church. Doctor Wood had become nationally known from his eulogy at President Lincoln's funeral, and would become one of the Heinz family's best friends. Henry and Sallie took the time to honeymoon in Niagara Falls, staying several weeks. Henry was passionate about work, but family affairs and church affairs had priority on his schedule. Both Henry and Sallie became active in the Lutheran Church with Henry expanding his involvement in Sunday school. He had also decided with the new company to tithe 10 percent of his profits. Heinz had been taught by his mother to always give back to God, and this belief shaped his life. The merger of Henry and Sallie, who were from two strong Christian traditions, came together seamlessly. Slowly, Henry became more comfortable with the Methodist view. Henry had become interested in the temperance movement, probably as a result of his brother's drinking problem. A few years later both Henry and Sallie would join the Methodist Church, which was more consistent with Henry's strong pro-temperance stand.

Henry's horseradish distribution focused on several segments. First was the retail grocers, who bought his fresh produce. He also sold to the

"hucksters" that sold vegetables and his horseradish by horse drawn cart to housewives. He picked up cabbage from German farmers on the Allegheny River plain and took it to the Pittsburgh market and grocers along the way. Cabbage was the main crop of the area. These distribution channels, which included hotels and restaurants, offered opportunities to expand business through new products—celery sauce and pickles. Celery was believed to improve nerve function at the time and celery sauce was popular on hotel menus. Heinz advertised his celery sauce as a " brain and nerve food," which was consistent with Heinz's health food approach throughout his career.

Heinz's strategy from the start was to go direct where possible to the grocer. Cutting out the wholesaler meant higher profits for both the grocer and Heinz. But wholesalers controlled the market, and Heinz had to develop a brand strategy to counter this. It was the desire to sell direct to grocers that evolved into revolutionary brand marketing and distribution systems. Heinz also had to offer variety to successfully win over grocers, who didn't want to deal with individual product salesmen. The wholesalers were also a powerful and wealthy class, and Heinz moved cautiously. In these early years, Heinz did not ignore wholesalers; in fact, he had a strong relationship with Reymer Brothers, one of the nation's largest. Reymer Brothers supplied grocers' confectionaries and preserves throughout Pennsylvania, Ohio, West Virginia, and Indiana. Reymer Brothers also exported specialties. Heinz sold mainly preserves to Reymer Brothers, who were also known for their

H. J. Heinz and Sarah Sloan Young Heinz in 1868 (from *H.J. Heinz, A Biography*, by E.D. McCafferty).

beautiful store displays at Fifth and Penn Avenues in downtown Pittsburgh, which H. J. Heinz had studied as a youth. Heinz also developed a working relationship with grocery wholesalers Dilworth Brothers and T. C. Jenkins. Heinz warehoused products for these wholesalers. It was a delicate balance as Heinz pursued his direct to grocer sales strategy. Product branding helped because consumers asked for Heinz by name, requiring grocers and wholesalers to become part of the supply chain. These relationships did slow Heinz's strategy of uniform prices in the early going. H. J. Heinz proved flexible in his ability to sell while promoting a new sales paradigm.

The Monongahela House had celery sauce on the menu in the early 1850s. This cooked mixture of butter, milk, salt, and celery with seasoning was used on meat dishes. Heinz bottled it and began selling to wholesalers, grocers, and hotels. It had high demand but was a tricky product that could spoil if exposed to air. Inventory control was critical and Heinz watched the shelf life carefully. Heinz would buy back old bottles or questionable inventory to assure its quality to the end customer. Heinz's quality became well known and business increased dramatically. Still, his wagon was not fully utilized. He was considering a number of new products. He now added some of his mother's homemade sauerkraut.

Pickles offered an even greater opportunity. Pickles were extremely popular in a time when fresh salads were uncommon. Pickles had a long history going back to biblical times, and they were popular throughout Europe, Asia, and America. Christopher Columbus had brought pickles to the New World, and pickles were commercially available in Virginia as early as 1606. Thomas Jefferson noted, "On a hot day in Virginia, I know nothing more comforting than a fine spiced pickle, brought up trout-like from the sparking depths of the aromatic jar below the stairs of Aunt Sally's cellar."[1] Pickles were believed to improve appetite and help digestion. Germans, in particular, believed in the health benefits of pickles; even Julius Caesar fed pickles to his troops for improved physical strength. Pickles were an important rationed food during World Wars I and II. Most cucumber production remained in the South and overseas before 1860. No one envisioned the millions that could be made through the manufacture of pickles on a national scale. The pickle market was growing as the influx of German immigrants started to accelerate through the 1860s. The Germans helped bring more Northern cucumber fields into production.

Heinz and Noble moved into pickles in 1871, and they would become the cornerstone of Heinz's future business. Most pickles were imported in 1871; George Underwood was one of the few American producers. Heinz started with sour pickles and small gherkins. The first year Heinz

produced sixty barrels of pickles in individual barrel production. By 1872, he introduced a sweet pickle (the first to do so) using saccharine. These sweet pickles were called "Saccharins." A few years later saccharine was believed injurious to health and Heinz switched to sugar. Heinz also introduced a copy of the British chow-chow pickle. Heinz's domestic pickles were higher quality, as the practice of European manufacturers was to ferment pickles in the barrel during the six week voyage to America. Heinz also capitalized on the growing German population in Pittsburgh and Pennsylvania to quickly make him a major regional producer. Pickles also fit his model of cutting down food preparation time for housewives. Smaller packaging gave him an advantage in standardizing size; both grocers and the consumer were happy to pay for size consistency. Pickles, like sauerkraut, used lactic fermentation. The barrel or large stone crock would be layered cucumbers, dill, horseradish, and various types of leaves. Liquid brine would be added and relinquished as evaporation took place over the weeks. The amount of salt in the brine was normally specified as enough to "float an egg." The process took from 4 to 6 weeks. Pickles were usually soaked in water to remove salty taste and repackaged in a brine-vinegar mix. Heinz would then clean the pickles in ice water, and then jar them in a vinegar and water mixture. Distilled clear vinegar was used for re-packaging. Vinegar and sugar might also be added to further flavor the pickles in storage. The original Heinz recipes called for European malt vinegar instead of common cider vinegar made in the United States. The move to pickles posed some operational and logistical challenges. Cucumbers were not grown in large volumes in the local area. More extensive cucumber farms were in the Midwest, which would require shipping them by railroad. More factory space would also be needed to produce and jar pickles.

Pickles created volume that the business had never had, and individual barrel production could not meet demand. While horseradish could be a home business operation, the pickle business would require a factory. The business moved into a new phase in 1872, as Heinz moved to true manufacturing. A third partner, E. J. Noble, was brought in and they leased a four-story factory. Heinz could now move into the wholesale market with his pickles, as well as supply the popular pickle barrel directly to grocers. His regional production, high quality, size consistency, and distribution made it difficult for imported pickles to compete. Imported pickles made up the largest segment of the market, but Heinz believed a regional producer could be competitive. Pickle sales boomed as Heinz found the local grocers supportive. By 1874, more factories, stables, and warehousing were needed. The factory was in downtown Pittsburgh on Second Avenue between Grant and Smithfield Street. H. J. had an asset

in the mechanical skills of John Henry, his oldest brother. By 1875, the plant was producing 15,000 barrels of pickles a year with mass production and specialized equipment of their own design.

There existed no source of food processing equipment. Equipment had to be made and designed internally. John was a skilled mechanic and H. J. had construction-skilled friends in his brickyard. The pickle factory had to have salting stations for incoming cucumbers that were unloaded from railcars or carts into pickling barrels for fermentation. The barrels had to be inventoried or re-packaged into glass jars. This was now a major manufacturing operation requiring as many as 150 employees in the fall pickling season. Pickles required almost daily distribution, and investments were made in wagons and horses, which needed stalls at the factory. Barrel deliveries were made every day to retail and wholesale grocers in the Pittsburgh area. Heavy draft horses able to handle the cobblestone streets of Pittsburgh pulled the wagons. The factory had plenty of storage space to handle up to 100,000 barrels. The Heinz house in Sharpsburg remained as extra warehousing space and was used for small product runs such as jelly and preserves. The Pittsburgh factory also had offices and a retail store. The ground floor had a heated stable for 25 prized horses, which were known throughout Pittsburgh for their beauty.

Heinz had always stayed close to the concerns of grocers and housewives for new ideas on how to better serve them. One frustration of grocers and housewives was sizing of pickles. Grocers preferred to sell at a price per pickle, but this required uniformity in pickle size that was not always there. Imported pickles had major size variations. Heinz realized that uniform sizing could give him a market advantage. Heinz started to hand size and pack in glass jars or bottles, which allowed both the grocer and consumer to see the uniformity. Heinz employees painstakingly packed the pickle jars for size and presentation, and this allowed for a final inspection that significantly increased quality. Heinz could not fully exploit this advantage prior to 1895 because of the high cost and limited size availability of glass jars. In sizing Heinz found an advantage he could exploit, at least in barrels, and later he and his brother would automate the process.

Heinz, Noble and Company were early pioneers in using glass bottles for pickles, but were not the first. In the early 1870s, companies such as Crown Brand were bottling the small chow-chow pickle. Initial sales were surprisingly strong, though until the 1880s, the imports controlled the larger barrel pickles such as dills. Heinz was well positioned as glass prices continued to fall every year. Grocers and customers took to glass bottled pickles and sales doubled almost every three years. By the 1890s, glass bottled pickles were competitive with those from the barrel and offered quality, sizing, and convenience.

In 1874, the business had grown to 160 acres of land on the Allegheny for cabbage and cucumbers with twenty acres for horseradish. Heinz was involved in all phases of the vegetable business. He early on pioneered concepts in advertising and marketing. He studied glassmaking to improve the quality and uniqueness of his bottles and jars. Heinz also designed special decanters for his horseradish and pickles, realizing that the package was as important as the product. He studied the inks used in the labels with an interest with bright, rich colors. His labels were the best on the grocer's shelves. He stressed cleanliness throughout his operation, often bringing grocers and consumers to the factory to show off his operation. Heinz focused on the high-end market and the convenience market. His products were not commodities but customer oriented. He applied the success he had achieved in selling horseradish—convenience, quality, delivery, and packaging. Nobody had ever sold pickles in this manner, and he quickly created a "brand" for what had been sold as an unlabeled commodity. Pittsburghers began to ask for "Heinz pickles."

The business and market operation were becoming too big for Heinz to be a sole salesman. Sales were critical to the operation; daily visits to grocers were necessary. The salesman hitched the wagon and horses, drove the wagon, dusted grocers' shelves, set up displays, checked the grocers' inventory for problems, placed orders, and discussed new opportunities. Wagons were cleaned daily to enhance their bright colors and advertising value. H. J. had brought his brothers, John and Peter, into the business as salesmen, but they lacked the work ethic of H. J. Heinz. John was considered lazy, while Peter developed a serious drinking problem. John, however, was a gifted mechanic and played a role in operations as well. John's role in the early company is often overlooked, but it was critical. Heinz brought his newly immigrated cousin, Fredrick Heinz, into the operation to supervise and work the vegetable fields. Fredrick proved truly gifted in gardening and improved on the seed variety and field maintenance. The arrangement was typical of the German concept of family as an economic unit.

For Heinz, family responsibilities only increased between 1870 and 1875. The first child, Irene Edwilda, was born on August 5, 1871. A son was born on April 17, 1873, and named after his business partner Clarence Noble. Heinz had developed a strong friendship with the Noble family of Sharpsburg. Heinz worked extremely long days at his Pittsburgh office, staying as late as 11 P.M. He rode the train from Sharpsburg to Pittsburgh and back daily. He still would make some sales trips to neighboring areas, but he was increasing market share in the Pittsburgh district, and that was taking up a lot of capacity. Heinz found time to supervise the gardening as well. He still kept the books for his and his father's brick-

yards, while managing his own business. His food business was growing at exponential rates, but his production capacity was used up. All of this was happening as the nation was in the midst of a recession. He was now personally over-extended and added more salesmen and a clerk. The addition of pickles to the product line had been a huge success, and his strategy was becoming legendary. The quality, packaging, and brand name recognition had given him market potential in Cincinnati, Chicago, eastern Ohio, and Philadelphia. Even with the booming success, Heinz was exploring additional new products, such as pickled cauliflower and catsup. Pickled cauliflower was particularly popular in the German communities. Heinz initially imported cauliflower from Holland, which was considered the world's finest source of cauliflower. Pickled cauliflower had a high markup and lower volume, allowing for the cost of importation.

The last product expansion of Heinz, Noble and Company appears to have been walnut and tomato catsups.[2] These catsups were available in their catalog by the barrel and bottle in the Anchor brand. Walnut catsup was the longer process. Vinegar was used to pickle walnuts in a crock or barrel for six months or more. Many home recipes called for 12 months. This vinegar liquor was the base of the walnut catsup. Walnuts were then mashed with spices, horseradish, and anchovies and added again to the base liquor. At this point the walnut liquor was boiled with additions such as beer, wine, and some sweet spices. The Heinz recipe avoided the use of beer or wine. The final additions included salt, anchovies, various peppers, cloves, nutmeg, ginger, and horseradish. The mix was boiled down some more and then barreled or bottled. Generally, the product was cold stored a few months before usage. It was claimed that shelf life was from 3 to 20 years. Walnut catsup was popular as a sauce for meats, soups, stews, and fish. The consistency and flavor of walnut catsup was close to Worcestershire sauce. Today's Worcestershire sauce today still utilizes vinegar and anchovies.

Walnut catsup was the perfect addition to Heinz's Anchor brand. First imported, walnut catsup was extremely popular in the 1870s, years before tomato catsup reached a similar popularity. Walnut catsup commanded a high price per volume and was sold in small bottles where brand labeling could be important. Its long shelf life made it easy to store and keep inventory without spoilage issues. It was considered an upscale product imported by the best food retailers such as Crosse and Black and Batty and Company. Most of the market was from imports that commanded a high markup. Hotels used walnut catsup often in their preparations, which was another plus in Heinz's ability to sell the product. Heinz's experiments with walnut catsup in 1875 led him to add tomato catsup to his Anchor line as well.

Tomato catsup recipes were starting to be published in cookbooks and magazines, and Heinz started to experiment with tomato catsup in late 1875. Heinz used his mother's basic recipe. Tomato catsup's general recipe was to mash tomatoes to a paste and add salt. The paste was simmered with sharp vinegar being added. Heinz early on preferred European malt vinegar or white wine vinegar over cider vinegar. Spices might include allspice, sugar, onions, mustard, mace, pepper, cloves, and horseradish. Walnut catsup was added and more salt added to taste. The following 1860 recipe for tomato catsup in *Scientific American* magazine was typical: "To a half bushel of tomatoes, add one quart of good vinegar, one pound of salt, a quarter pound of black pepper, two ounces of African cayenne, a quarter of a pound of allspice, six good onions, one ounce of cloves, and two pounds of brown sugar. Boil this mass for three hours, constantly stirring it to keep it from burning. When cool, strain it through a fine sieve or coarse cloth, and bottle for use."[3]

German recipes for tomato catsup were particularly attentive to the sweet and sour balance, using sugar and vinegar to create the correct flavor. German recipes were actually the first to call for sugar because of their love of the sweet and sour combination in foods. Heinz's early recipes called for "slippery elm bark mix." Elm bark contained some natural salicylic acid, which addressed a major spoilage problem of most catsup. Catsup had an established market in Pittsburgh as early as 1840. Imported British "ketchup" had been available in Pittsburgh since the 1840s by wholesale grocer A. G. Reinhart. The British preferred the term ketchup in the 1840s, while domestic producers used the term catsup. Wholesale Pittsburgh grocers such as Reymer and Brothers had domestic "catsups" after the Civil War. Wholesale grocers sold the product in barrels, while retailers offered ceramic crocks of catsup. Shelf-life and spoilage was a bigger problem with tomato catsup than with walnut catsup. Tomato catsup was popular in the 1870s with meat, fish, and oysters. Amounts used were smaller than today's use. Even when tomato catsup was added to soups and stews, recipes called for a few teaspoons only. The shelf life was at least 1 to 2 years.

The term catsup or ketchup (or even catchup) was a matter of much confusion from the early 1800s. Etymologists and lexicographers still argue today over the origin and use of the names. Many believe the word catsup to be the older, more American, and representative of lower quality. Early published American recipes from 1800 to 1870 mostly used the term catsup. It wasn't until the 1870s that American cookbooks started extensive use of the word ketchup. Early American commercial manufacturers in the 1860s, such as Horace Thurber in New York, the Williams Brothers in Detroit, and Jones Yerkes of New Jersey used catsup on their labels.

Yerkes gets credit for being the first American to sell bottled ketchup in 1837. Heinz initially, in the 1870s, used catsup on his labels. The British early favored the word ketchup. Imported bottles from Crosse and Blackwell to Pittsburgh in the 1840s were labeled as Ketchup. Lexicographers seem to agree on the Asian origin of the word, although, the exact origin varies from Japan, China, or Malaya. British dictionaries favored ketchup and its possible origin from the Chinese word *ke-tsiap,* meaning "the brine of pickled fish." The market started to differentiate ketchup and catsup on a quality basis in the early 1880s. Heinz initially followed this trend with the top-of-the-line Keystone Ketchup, and the bottom-of-the-line Duquesne Catsup. By 1890 Heinz had standardized on the use of ketchup, though many individual grocers continued to advertise Heinz "catsup" into the late 1920s. Heinz added to the confusion by maintaining a "homemade catsup" in his product line. Still, many manufacturers preferred the word catsup, such as Monarch Catsup and Del Monte Catsup, which remain today. Today ketchup is the preferred term. The term used in this book fits the usage at the time or the product name.

Heinz believed that tomato catsup fit into his convenience foods. Homemade tomato catsup took hours of work. It was often lumpy, contained seeds, and varied in flavor and consistency. Heinz would supply a strained product that was thicker but smooth. Through strict adherence to processing standards, he could assure consistency in texture and flavor. Heinz also thought he could exploit his longer shelf-life recipe, using elm bark and tragacanth as natural preservatives. This was critical to Heinz, since he would not be the first in western Pennsylvania to make tomato catsup. Lutz and Schramm were making catsup in Pittsburgh as early as 1830. Catsup at the time sold for twenty-four cents a gallon from the barrel or $1.15 a pint bottle or $1.75. Heinz was even working on "Extra Fine Catsup" containing additional spices such as cinnamon and garlic. This was the first product that offered an opportunity to grade for different markets. Heinz's spicy and fancy catsup certainly would have a market at Pittsburgh's many fine hotels. Here the term "fancy catsup" was probably not competitive with the imported British "ketchup." Additional sugar was also added, which gave Heinz's catsup the sweeter taste of German recipes. It is clear that in 1875 at Heinz, Noble and Company was experimenting with catsup and listed it in the catalog, but it is doubtful they sold much, if any, before the bankruptcy.

Ketchup or catsup also fit the same high quality niche market that Heinz had found for horseradish. Ketchup or catsup was often in the 1870s produced by tomato canners as a by-product. Rejected tomatoes, trimmings, insect holes, and other waste were used. These pieces were often swept off the floor. Jonas Yerkes had started his ketchup business at

Morristown, New Jersey, using scrap from his tomato canning operation. Early low-bodied ketchup or catsup required coloring and preservatives. Coal tar dyes were then needed to color the ketchup a bright red. Many used coloring with cheaper pumpkin pulp to make "tomato" ketchup. Ketchup making by these producers was not quality driven but profit driven.[4] In general ketchup of the period was much thinner than today, about 5 percent pulp compared to 35 percent now, although Heinz made one of the thickest products from the beginning. If the tomato canners found their product too thin they added starch or foreign pulp, similar to early horseradish packers. Producers like Underwood and Heinz focused on ketchup as a primary manufacturing product, not a by-product of other products. Both had built a reputation that could be trusted, and the recipe driven processing resulted in a distinct and consistent taste.

Another reason that ketchup offered an opportunity for Heinz was its lack of availability in the middle price range. Major producers in the 1870s such as Yerkes targeted the high-end market, using fancy glass decanters. The barreled product had poor shelf life because it was produced from floor scraps in canning operations and was thin. Grocers preferred not to handle it because of spoilage. Oxidation of these earlier ketchups turned them dark in color. Homemade ketchup was time consuming, and tomatoes were not readily available at markets. The market for a lower priced, quality product existed. Production on a regional basis was favored. This was the type of market that attracted Heinz.

Heinz's company had started to look at the rapid growth, product line expansion, and market penetration as a model for corporate growth. In a recent article in the *Harvard Business History Review*, Harvard professor Nancy Koehn summarized the success of Heinz, Noble and Company:

> Today we might point to Heinz and Noble's skill in exploiting economies of scope, in developing additional goods that utilized existing inputs and organizational capabilities. But neither man thought in theoretical terms about what he was doing. Like other entrepreneurs at other times, they were working to expand a fledgling business operating in a new, as yet largely undefined, market. To make the most of the opportunity they saw before them, they would have to use their limited resources and more ample creativity as efficiently as possible. Increasing the company's product line was potentially quick, inexpensive way to shape a nascent market for processed food.[5]

Heinz's "economies of scope" explained his drive to diversify by expanding families of related products. Heinz's setup was very close to what today we call cellular manufacturing, where related products are produced in departments using common equipment. This approach allowed

him to save on raw materials, labor, and distribution. He preferred to achieve economies of scale, where product volume drove prices down and increased market share. Heinz never really wanted this type of low price strategy. Heinz had learned sales savvy as a child and he had learned bookkeeping as a young man. In a few short years, Heinz, Noble and Company had grown from a local backyard operation to a national one. They had won first prize at the Cincinnati Exposition that year and Heinz was becoming known throughout the country. Heinz excelled at selling, but he lacked the operational skills for a large national company. This lack of operational knowledge would be the Achilles heel of the firm as it grew rapidly.

Heinz, the Noble brothers, and the company were overextended by 1875. Advertising had created a sales boom. The need for cucumbers was beyond their field capacity. Even the factory lacked the capacity. They lacked a steady supply of high quality vinegar, which was a key raw material for the operation. In 1874, they started to address some of their operating issues. The initial Heinz pickling recipes called for malt vinegar, which was popular in Europe and was being imported into the United States. Malt vinegar had a sour flavor and was a condiment itself in Europe, often used as a salt substitute. Cider based vinegar was much sweeter. Apple cider tended to darken in storage, which was noticeable in Heinz's clear glass bottles. Heinz started with white wine vinegar for preservation because he had domestic sources. Distilled vinegar from malt vinegar was even better in clarity and had a higher acid content for better preservation. Pittsburgh had a few white wine vinegar producers, no malt vinegar producers but many cider vinegar producers. Heinz purchased a vinegar factory in St. Louis and started to produce malt vinegar and distilled vinegar experimentally. Heinz was able to produce 75,000 barrels of vinegar in 1875, but he still needed to buy some barrels on the outside for vinegar sales. Barrels of vinegar flowed daily to the Heinz Pittsburgh plant. Because of this Heinz was one of the food processors to not sell nationally, but have a national network for food processing and manufacturing. The railroad hub of Pittsburgh had made such a manufacturing network possible. The company also opened a warehouse in Chicago, as this market with its large German population was growing rapidly. E. J. Noble was sent to St. Louis to manage the vinegar factory and L. C. Noble took responsibility for the Chicago warehouse and looked for Midwest sources of cucumbers. The rapid expansion seemed more acceptable to the Noble brothers than Heinz. The Nobles had come from a prominent manufacturing family and were comfortable in the financial world, while Heinz was uncomfortable. Heinz's German background had made him leery of loans. Still, Heinz's own sales success was pushing him to expand.

The year 1875 would represent the critical time for Heinz, Noble and Company. This was the year that the company would purchase the yield of a cucumber farm in Woodstock, Illinois. The company also contracted additional pickling and bottling capacity in Chicago to handle the cucumbers and Midwest demand. This expansion truly strained the company's resources, including its financial resources. Heinz had sold the Beaver, Pennsylvania, brickyard for $5000, but much more cash was needed. Heinz had built a relationship with the Sharpsburg bank, but the "Panic of 1873" was fully underway. Money was tight throughout the nation. By spring of 1875, the company's cash position had become a major problem. The Midwest expansion was draining cash, and positive cash flow would not be seen till late fall at the earliest. Heinz's own father refused to use his brickyard and house as collateral for H. J. This was typical of the Germans of the area; they avoided loans, seeing them as evil. But his father did personally loan him money to help, jeopardizing his own business.

These 1800s "panics" were just that. The financial markets were unable to handle the large swings of the capitalistic economy, lacking the Federal Reserve System of today. Loans were "callable," that is, a bank could call in a loan, demanding the all or part of the outstanding amount. A financial panic would last 1 to 4 years as markets slowly worked things out. Like most panics, the Panic of 1873 had started in New York with problems among investment houses. It was the result of railroad speculation after the Civil War. On September 18, 1873, known as Black Thursday, the large investment house of Jay Cooke failed. In October of 1873 several investment houses collapsed over wild railroad speculation, and the New York Stock Exchange was forced to close for ten days. From a financial crisis in New York, the panic spread to America's factories over the year. It didn't reach Pittsburgh until late 1874. The steel and iron industry slowed in early 1873, and money tightened. Heinz, Noble, and Company bucked the trend with good sales. Starting in May of 1875, however, things had changed for Heinz. The company had $4,500 in notes that needed to be covered. He raised the money by putting up his mortgage, as well as getting his father to mortgage his brickyard. This was a risky move by all of the Heinz family. H. J. Heinz was forced to stay in Pittsburgh to manage the day-to-day financial crisis. H. J. Heinz's anxiety also caused a general fatigue and some physical problems.

By mid–July H. J. Heinz was in deep trouble and his diary entries reflected this. Heinz and the company were living hand-to-mouth and barely meeting payroll and invoices each week. The tension between the partners was also starting to show. Heinz with his bookkeeping duties was more distressed. He was forced to slow his sales efforts to manage

the raising cash crisis. The papers were filled with bad economic news as well. Some of Pittsburgh's biggest banks had closed or had temporary closings to prevent customer runs. Heinz had made it through the summer because the president of Sharpsburg's Farmers and Mechanics Bank, Jacob Covode, was a personal friend. Covode was from a wealthy Republican banking family and he backed several of Heinz, Noble and Company notes as a favor to H. J. Heinz. However, by late summer the company was living day to day. The tension between partners was now open fighting. The Nobles were confident and hopeful of a big payback in the late fall from the investment; meantime, Heinz was left to the books and banks. The Nobles seemed to see the financial problems as a temporary issue and continued to buy raw materials. Physically, the wear was showing on Heinz. By late July even his friend Covode could do no more. In fact, no banker in Pittsburgh could help. Banks were failing daily across the nation and stock market transactions were being hauled. The Heinz family and friends helped with what cash they had, which put more strain on H. J. mentally. Family and friends believed H. J. was headed for a mental breakdown, as he worried constantly. H. J. was forced to bed as a general fatigue overtook him. Through the end of December, he struggled to get out of bed, and at least two of the days, he never made it out of bed. He faced a Christmas, which was his favorite time, without gifts for his family. His diary showed some questioning of his faith, but it would be Sallie's and his mother's faith that sustained him.

The final collapse would come at year end. A bumper crop of cucumbers stretched financial resources and overloaded the factory's capacity. By October cucumbers were arriving at 2000 bushels per day at a cost of 60 cents a bushel. A bumper crop of cabbage was also arriving daily in Pittsburgh at $10 a ton. Not only was payment impossible, but his salting stations were overwhelmed with cucumbers. A bank for the first time refused a Heinz-Noble check, and Heinz barely made the payroll. Heinz argued with L. C. Noble to stop writing checks, but to no avail. L. C. Noble told Heinz to get the operation in Pittsburgh under control. In addition, the Nobles refused to raise or invest any more money for the operation. Heinz's friends, wife, and family helped with more money, but H. J. probably realized in late November that it was over. His wife put her last $700 in to meet the final payroll in the western operations. The newspapers had the story and banks shut down further credit. Grocers panicked as they heard the news, and feared the inventory they owned but Heinz warehoused might be lost. A group of grocers rushed to court to get a lien. The sheriff put a lien on the inventory on December 15. Heinz had missed his rent payment in December. The landlord of the Pittsburgh office and factory panicked, reacting to rumors that Heinz was

moving inventory. The final insult was that two creditors claimed fraud and had him arrested. A Pittsburgh headline read, "A Trio in a Pickle." The headline hurt more than the problem itself, but Heinz called the editor and got a retraction, noting that no inventory had been secretly shipped. Still, the damage had been done.

Finally on December 17, 1875, Heinz, Noble and Company was one of thirteen companies to file bankruptcy in Allegheny County that week. Over 5,000 bankruptcies were recorded in the nation that year. The sheriff put everything up for sale. The prized horses, which were almost pets to H. J. Heinz, had to be sold first. Heinz, himself, was bankrupt. His father's business had also been pulled into bankruptcy with the loans, and the sheriff appraised his parents' furniture for sale. On Christmas day, Heinz recorded in his diary: "I have no Christmas presents to make. Sallie seemed grieved and cried, yet said it was not about our trouble only.... I feel as though people were all pushing us down because we are bankrupt. Such is the world." Heinz was deeply hurt. The public nature of the problem had been the most difficult for him. The newspapers were all questioning his morality, honesty, business sense, and his Christianity. In some ways, the bankruptcy brought some relief. Heinz had poured all his personal resources and as well as much of his immediate family's into the effort to save the company. He did meet the December payroll for his employees, leaving nothing for his own Christmas.

The Noble brothers deserted Heinz and publicly blamed him for the failure. The newspapers promoted that opinion. Friends quickly joined on the bandwagon that Heinz had caused the downfall. His "best" friend, whom he had named his son after, told the employees that the fault was Heinz's. His wife's family turned their backs on him. Friends and neighbors who had made investments in the company showed up angry at his door. The paper and the Nobles had created bitterness for Heinz among the people of Sharpsburg. There was a persistent rumor that Heinz had sold inventory to help himself, while allowing loans to go unpaid and defrauding his creditors. A few days before New Year's Day, he wrote: "I feel very sad, as though I had not a friend in the world.... A man is nowhere without money.... People care little about you without money.... People talk terribly.... We find we have few friends left." Many friends accused him of holding out on paying back. Heinz was mentally broken. At thirty-one years of age, he was penniless with a wife and two children. Certainly that week was the bottom, shaking his faith and optimism, but it blinded him to a larger good and help of his immediate family. Jacob Covode, his banker friend, had stood behind him, and his mother was a well of strength in the crisis. His father, however, had slipped into his own depression, and would never fully recover. Heinz's wife, Sallie, was said

to have lost 10 pounds over the problems. Christmas week would be a bottom for H. J. Heinz.

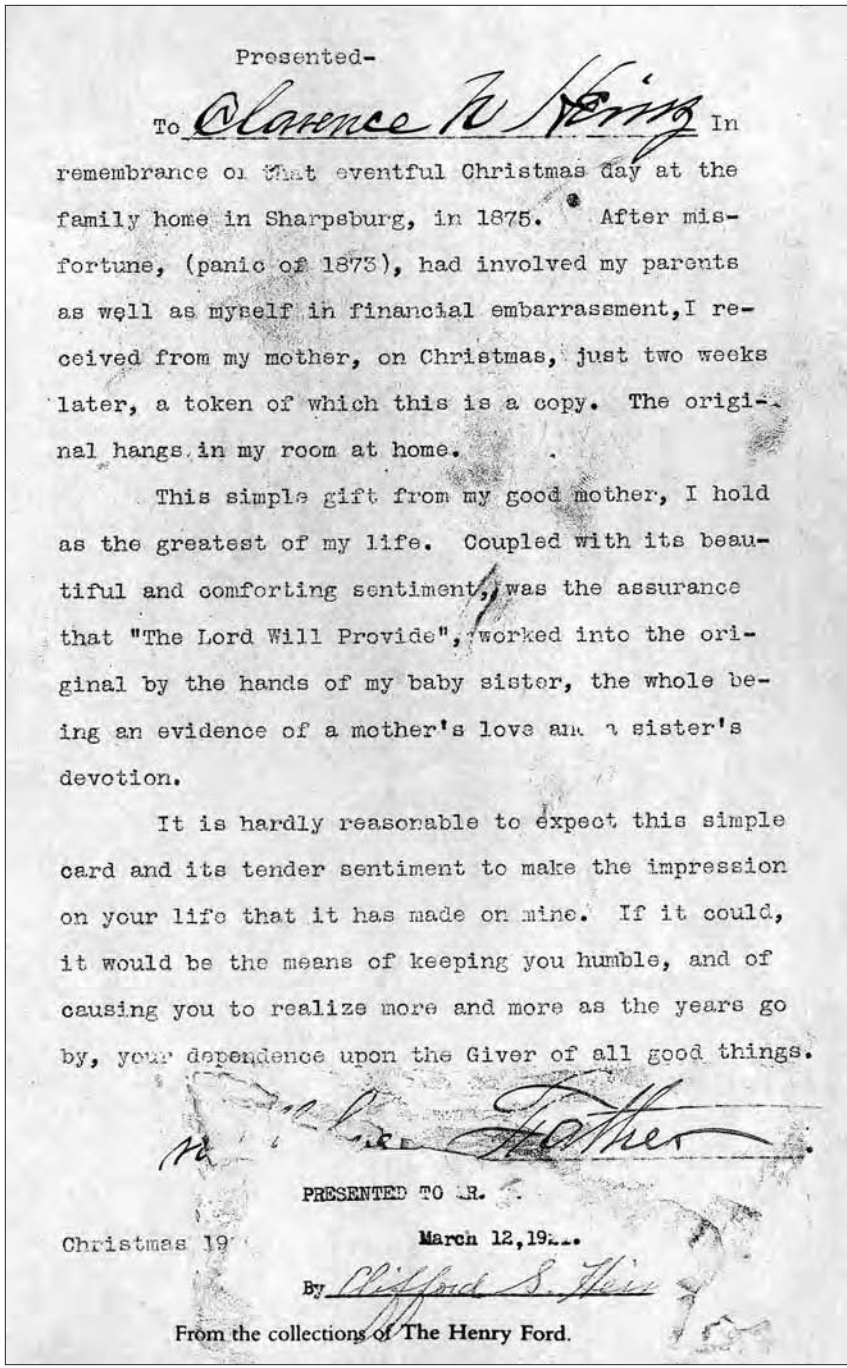
He lacked Christmas gifts, but he received what he later called a "prophecy." His mother, true to form, offered one of her prayers. On a printed card was this message:

> May the blessings of thy God wait upon thee, and the sun of glory shine round thy head. May the gates of plenty, honor, and happiness always open to thee and thine; may the pillow of peace kiss thy cheek, and the pleasures of imagination attend thy dreams; and when length of years thee tired of earthy joys, and the curtains of death gently close around the scenes of thine existence, may the angels of God attend thy bed and take care that the expiring lamp of life shall not receive one rude blast to hasten its extinction; and finally, may the Saviour's blood wash thee from all impurities and at last usher thee into the land of everlasting felicity.[6]

For all of Heinz's life his mother used biblical sayings and quotes to explain life's ups and downs. He trusted his mother beyond anyone, and it was only natural to look to her for the answer. It also became a tradition for Heinz fathers to pass on a copy of his mother's prayer at Christmas with the following letter:[7]

> In remembrance of that Christmas day at the family home in Sharpsburg, in 1875. After misfortune, (Panic of 1873), had involved my parents as well as myself in financial embarrassment, I received from my mother, on Christmas, just two weeks later, a token of which this is a copy. The original hangs in my room.
>
> This simple gift from my good mother, I hold as the greatest of my life. Coupled with its beautiful and comforting sentiment, was the assurance that "the Lord will provide," worked into the original by the hands of my baby sister, the whole being evidence of a mother's love and sister's devotion.
>
> It is hardly reasonable to expect this simple card and its tender sentiment to make the impression on your life that it has on mine. If it could, it would be a means of keeping humble, and of causing you to realize more and more as the years go by, your dependence upon the Giver of all good things.

Christmas week became one of soul searching. Sick and depressed, Heinz met his obligations at Sunday School, but struggled to accomplish anything else. His mother helped to hold him up and pushed him to look at what could be done. Heinz determined to pay all creditors back, although it would not be required legally. His reputation and moral obligations had priority in his life. He started a ledger of what was owed and to whom. The accounts were adjusted for his three-eights share in the company. The Noble brothers appeared to be satisfied with the lifting of legal obligations by the bankruptcy. His plan was to pay everyone,



Presented-

To Clarence H Heinz In remembrance of that eventful Christmas day at the family home in Sharpsburg, in 1875. After misfortune, (panic of 1873), had involved my parents as well as myself in financial embarrassment, I received from my mother, on Christmas, just two weeks later, a token of which this is a copy. The original hangs in my room at home.

This simple gift from my good mother, I hold as the greatest of my life. Coupled with its beautiful and comforting sentiment, was the assurance that "The Lord Will Provide", worked into the original by the hands of my baby sister, the whole being an evidence of a mother's love and a sister's devotion.

It is hardly reasonable to expect this simple card and its tender sentiment to make the impression on your life that it has made on mine. If it could, it would be the means of keeping you humble, and of causing you to realize more and more as the years go by, your dependence upon the Giver of all good things.

Father

PRESENTED TO H.

Christmas 19 March 12, 19..

By Clifford S. Heinz

From the collections of The Henry Ford.

The remembrance letter that H. J. Heinz passed on to his sons on Christmas 1875 (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 7).

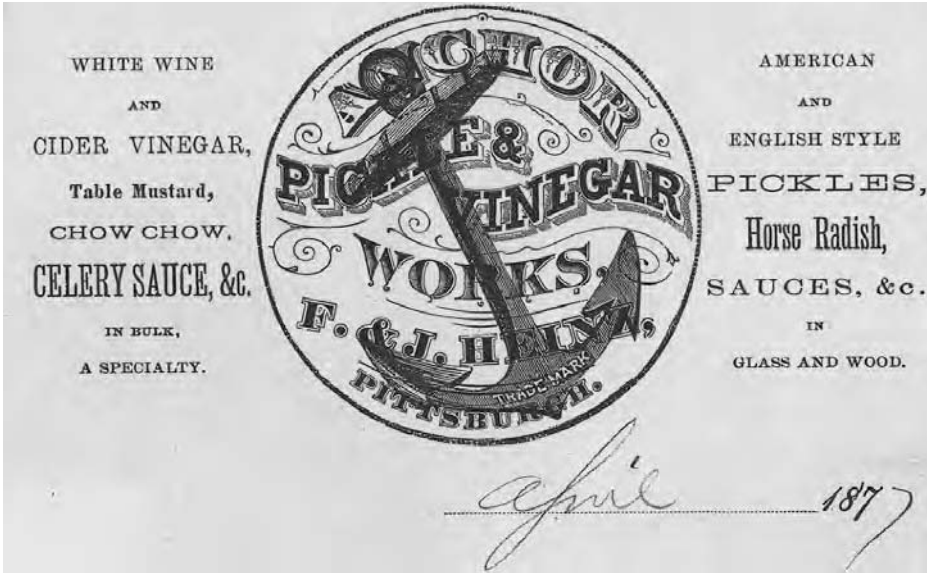
which he would live up to. Maybe more amazing was that he found forgiveness so he could move on. Instead of personal resentments, he would put that energy in meeting what he owed. Years later, Heinz would actually help one of the very creditors that had attacked him. There were lessons that he would ferret out over the years, but he now had a goal that could carry him. Setting goals in his diary seemed to heal him. Immediately apparent were the importance of family and the uncertainty of friends in difficult times.

4

A Momentous Year

HEINZ'S PATH BACK TO SOLVENCY would start with the new year of 1876. The Heinz family met on New Year's Day around the dining room table to study the problem and look to the future. The damage was extensive with H. J. Heinz bankrupt and his parents saddled with obligations. His brother John and cousin Fredrick Heinz were now out of work, and their only experience had been in the family business. The father's brickyard could be sold for some cash, but the brick business was severely depressed and everything was mortgaged. By the end of the month, however, the brickyard was lost. As a unit the family could survive, but John and Fredrick believed there was more of a future than mere survival. John and Fredrick had $800 in stock investments in a savings and loan. His mother and father still had some savings, and his wife had some joint ownership in property from her family. Sallie sold what property she had left to raise $1,400. They still had garden land on the farms and plots in Sharpsburg. With the "Panic of 1873" in full blossom in Pittsburgh, it would be unlikely that John, Fredrick, and H. J. could change careers and find work in the area. The national unemployment rate was over 20 percent and the Pittsburgh rate was closer to 40 percent. Estimates were that only 25 percent of the nation was employed full time. The nation was in its deepest depression until the 1929 crash. The Panic of 1873 lasted until 1879, reaching its peak in 1877. Those who had jobs found their wages reduced 40 percent to 60 percent. In New York, over 90,000 lost their homes. In Chicago, thousands were eating out of garbage cans.

Most of Pittsburgh's major factories were idle. Andrew Carnegie's mills were down to a couple of days a week to meet limited orders. Those who were still working, like the miners and railroad workers, were being forced to take pay cuts. The economic depression had also dried up any outside investment. The preserved vegetable business had shown strength



F. and J. Heinz Anchor Brand, 1877 (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 7).

throughout the hard times, and the Heinz products were still extremely popular in the Pittsburgh market. The family had the manpower to at least run the Sharpsburg gardens and farm. It made sense for them to at least try to rebuild slowly on a local basis. The family could make the money so badly needed in the economic downturn.

H. J. Heinz would be unable to form a partnership until the bankruptcy was resolved, but this was a family, and legal documents were not needed. Under this dining room table agreement, brother John, cousin Fredrick, and his mother, Anna Schmitt Heinz, would have one-sixth interest. His wife, Sallie Young Heinz, would have a half share in the partnership. Anna Schmitt Heinz functioned as a chairwoman of the board and clearly backed H. J. as the head of the overall operation. H. J. would be the manager with a salary of $125 a month (about $2300 in today's dollars). John would handle the processing operations and Fredrick would manage the gardens. H. J. Heinz had to swallow his pride and fill a position in which he technically worked for his younger brother John. Capital remained a limiting resource, but the Heinz women and children produced homemade horseradish to raise cash. H. J.'s youngest sister remembered the year with bitterness, as she had to wash dishes while the others worked late into the night preparing horseradish. Initially, the company operated briefly as Heinz Brothers, but concerns over

H. J.'s potential involvement forced a different name. F and J Heinz Company was formed on February 14, 1876, with a capitalization of $3000. For the first year the labels included "Anchor Pickle and Vinegar Works." Money from the horseradish sales and the starting family capital were the only cash available in February of 1876. Their business plan called for them to move back into vinegar, sauerkraut, and pickles in the fall. Heinz was able to buy back some pickle inventory for sale as well. They used some capital to buy vinegar generators back. They persuaded a friend to lend them some old broilers that John could adapt for pickle production in the fall.

No one worked harder than H. J. to rebuild the company. He traveled around with his pledge to make good on all debts. His personal commitment quickly relieved their fears. He sold horseradish and salted pickles with the passion of his youth and traveled to nearby railroad stops to sell more. His distribution network stood with him because of the popularity of his products. That popularity proved itself in the midst of a national economic depression. His old landlord offered him the Pittsburgh pickle factory to rent again, starting in April. The landlord recognized Heinz's promise to pay back old debts and the continued demand for his products. John took over operations, trying to ready the production for late summer. The landlord also realized that in this deep recession, it was unlikely he could find a new renter. Heinz bought back some horses and office furniture as cash was generated. Heinz even brought back some employees at half wages with the balance being considered a loan. The family had about eight acres of garden available at the farm and house. Fredrick rented 45 acres in Sharpsburg for additional cabbage and horseradish. They would buy cucumbers on the open market in the fall, avoiding any future contracts.

By early summer, even his critics were amazed at the Heinz's family unity and determination. Still, he had no possibility of loans, and the embryonic business struggled weekly in mid-summer before the fall harvest. Heinz used the two to three day float on his checks to operate on a monthly budget under $3000. Cash flow came from the sale of horseradish, fruit preserves, and celery sauce. He hoped to bring catsup into full production in August. Catsup would be made at the family farm and bottled with a high profit margin like horseradish. It also helped the company generate cash while waiting for pickle and sauerkraut production. Catsup fit the same convenience market as horseradish. It was the ideal addition for a cash-short company that had lots of family labor available. Heinz, Noble and Company had experimented with walnut and tomato catsup, but had never fully developed the production. Catsup and the British ketchup were popular in the Pittsburgh area. The high price per

weight made it an extremely popular product to export from England. English ketchups were made from tomato and walnuts, peaches, and plums. British "mushroom" ketchup, which was actually decayed beef liver, was extremely popular. Anchovy ketchup was also popular with importers. Pittsburgh importers such as J. Lavely carried a full array of imported ketchups in the 1850s.

Making catsup was a long and painstaking task for the housewife, even more than horseradish. Tomato catsup required the tomatoes to be peeled, cut, seeded, and cooked down. It took all day to make a batch of catsup. Heinz would advertise his bottled catsup in clear containers as "Blessed relief for Mother and all the women in the household." The Heinz catsup stood out in quality, consistency, and thickness. Heinz also marketed a lower quality "Homemade Ketchup." There was a solid payback. Financial records the profit margin on horseradish and catsup was as high as 40 percent to 65 percent. Estimates of profit margin are difficult because some of the labor was being donated by family members and the biggest costs were labor and glass. Glass ran about $400 a month ($7,400 in today's dollars). Overall sales for the year 1876 would reach $44,474 ($822,769 in today's dollars).

By late summer of 1876, Heinz was back overseeing many things. He would often inspect the gardens in Sharpsburg. He acted as chief accountant and financial officer. He looked for asset bargains in old horses, wagons, and mules. He continued his trips and his work with glass houses to improve his packaging and reduce costs. He designed labels and studied inks for his glass bottles. He made the tough long distance sales calls, working to establish beachheads in Philadelphia, Washington, and Baltimore. These cities had good rail connections to his Pittsburgh plant, where Heinz, Noble and Company had started some distribution. The plan was to build the distribution network slowly, using local wholesale grocers in new areas. He had learned the lesson of expanding the distribution centers too fast. The Chicago and St. Louis warehouses had drained cash from his former company.

Heinz avoided Chicago and west for the time being, looking east for expansion, probably waiting for an improvement in his reputation and settlement of accounts in the west. Heinz made many trips to Philadelphia but had better success in Pittsburgh. Heinz was thrifty, riding coach and getting little sleep. He hired a local salesman and brought his younger brother Peter into a sales position. In Pittsburgh, Heinz believed in servicing accounts with assigned salesmen. He hired salesmen based more on their looks and dress than sales experience. In distant cities, the salesmen agents would own their territory. Heinz used the salesmen to go directly to retail grocers. The salesman was also delivery boy, marketer, inventory

control manager, and teamster. The Pittsburgh or branch salesman every week wrote up his own order from the warehouse. This allowed the salesman to be a true partner in the firm. Heinz honed his sales organization in Pittsburgh. The Heinz salesmen were trained to be an aggressive competitor for shelf space. They dusted, inventoried, and often moved Heinz products to the forefront. They tried to build lasting relationships with the grocer. The salesmen emulated their founder with a sample case, derby hat, and stiff collar shirt. Like their founder, they were known to tack up advertisements along their routes. Heinz used his wagons as billboards to launch what would become his brand strategy. Pittsburgh quickly bounced back as the core of the Heinz business.

He also had a group of salesmen known as travelers who crossed the region and nation in search of business. This approach would allow for expansion with a lower risk. H. J. Heinz watched each sales area with visits to assure financial strength. These visits allowed him to study the needs of wholesale and retail grocers in each region. Heinz carried a pocket notebook to record market characteristics and opportunities. He also collected recipes, and even studied samples of local brick. Bricks, however, had been reduced to a hobby. Heinz realized that the key to successful expansion was in the selection of salesmen. He needed to be able to trust them completely. The salesmen would inspect shelf products for spoilage, and would pay to have bad products removed from the shelves. The sales expansion was H. J.'s main focus in the summer and fall of 1876 because of the limited capital and product. Wheeling offered some additional business in late 1876, and he started an agency there with his brother Peter. Peter Heinz (1851–1923) was becoming an outstanding salesman. Going into the fall as products came on board, he was doing about $4000 in sales a month ($73,678 in today's dollars).

On a personal level, the bankruptcy haunted H. J. and Sallie. Bankruptcy for a German was a scarlet letter. They changed to a church where they were not known. The business tried and failed to get financing and was forced to do all business in cash, since Henry J. was still associated with the business. Some in the community attached a large amount of personal disgrace to a business owner who filed for bankruptcy. H.J. became even more determined to pay off his past debt, setting a goal of four years. He was haunted by the problems of his alcoholic brother Peter during most of 1877 and 1878. Peter, however, remained close to H. J. because of his loyalty. H. J. would often drag Peter to temperance meetings. Peter would take the pledge but return to drinking within a week. Peter was constantly having problems with women as well. Still, H. J. preferred Peter to his brother John. Tension built between brother John and H. J., as H. J. assumed the role of "owner." John resented the fact that he had invested

and H. J. had nothing to invest. For his part, H. J. had a problem with what he considered John's lazy approach. H. J. was the dominant owner and manager of the company, working 16-hour days. The Heinz family moved to a rented house on Pittsburgh's Second Avenue, so Heinz could walk to work and keep check on the factory when he was in town.

Heinz became involved with the Republican Party both locally and on a national level. He and his family had been abolitionists and followers of Abe Lincoln, and Pittsburgh had become a center for the new Republican Party. Heinz worked with the Republican Party for the election of Rutherford B. Hayes, who stood for temperance in America. Heinz used his company wagons in parades to advertise his support for Hayes.

He found time for family, taking Sallie to the Centennial Exposition in Philadelphia, which really became a business trip filling notebooks. Heinz also took along his sisters and some of Sallie's family. Heinz had committed to a small booth at the fair. H. J. had asked his brother John not to go because of the cost, which only created more tension and anger. Heinz could only have a small display, but it included catsup, mustard, and pickles. The Philadelphia World's Fair opened up new advertising ideas for Heinz.

As the Heinz party got off at the Pennsylvania Railroad Station in Philadelphia, they would first see the new emporium of John Wanamaker. Wanamaker was a marketing genius, and this was the first true department store in the United States. It was a wonder of 120 departments staffed by perfectly dressed women, a practice that Heinz would emulate years later. The store was two-thirds of a mile long covering three-acres with 129 counters, an in house restaurant and a men's smoking room. It augured a new age in retailing and advertising. Wanamaker had also built a reputation for paternal treatment of his employees. At the time, Heinz was unaware that twenty years later, he would count John Wanamaker as his best friend and mentor. On the way to the fair, Heinz probably stopped at the small chocolate shop of Milton Hershey. Hershey would be another supporter of paternal capitalism.

The Philadelphia Exposition would introduce Heinz to a lot of new technology, including the telephone and automatic canning machines. The Exposition's Agricultural Building offered an amazing array of preserved foods, bottled sauces, canned meats, and new condiments. He returned to Pittsburgh determined and inspired to experiment with canning. Heinz had never seen such endless rows of glass-encased exhibits of bottled and canned foods as he had in Philadelphia. The large Crosse and Blackwell exhibit augured Heinz's future. Crosse and Blackwell had been founded in 1830 and had built a fortune on sauces. Crosse and Blackwell offered such products as chow-chow, ketchup, malt vinegar (for fish

and chips), celery sauce, and preserved jellies in glass packaging. Even more impressive was the beauty of the glass containers. Crosse and Blackwell had differentiated what at the time were bulk commodities to most grocers. Heinz filled small notebooks with new product ideas, but also saw the power of advertising. Heinz was convinced that advertising and packaging were the keys to success in this business. The exhibition only reinforced his belief that the package and bottle were an important part of selling processed food. It would be at the exhibition that Heinz first saw a semi-automated canning operation. On his return to Pittsburgh, Heinz participated in Pittsburgh's regional expositions with sales booths.

One of the most promoted sauces at the Centennial Exposition was Worcestershire Sauce. Worcestershire had roots going back to the 1830s when Lord Sandy returned from India with a tangy sauce he fancied. He took samples to the chemist shop of John Lea and William Perrins in England's county of Worcester. The exact Lea and Perrins recipe is secret, but it is believed to include anchovies, shallots, cloves, malt vinegar, salt, garlic, sugar, chilies, cayenne pepper, and tamarinds (brown pods from a tropical tree). It was a fermented product requiring several months of aging. Lea and Perrins had profited by its sale in a bottle throughout England. They used a well-designed apothecary bottle in the 1840s. Their package was particularly distinctive with not only a beautiful label, but also a labeled paper wrapping. Heinz, on a number of his products, emulated the paper wrapping. The British used Worcestershire sauce on beef. It was one of a group of fish sauces that had become extremely popular along with walnut ketchup, which used anchovies in the British recipes. Worcestershire sauce was a very popular product at the 1876 Exposition, and Heinz upon his return to Pittsburgh started to experiment with fish sauces. By late 1876, F. J. Heinz Company introduced a Worcestershire sauce of their own. Heinz used the term "Worcester sauce" to avoid legal problems. After the Philadelphia Exposition demonstrated the popularity of the sauce many imitators arose, and Lea and Perrins aggressively defended their trademark. Imitators used similar names such as "Westminster" and "Wostershire." (Heinz Company purchased Lea and Perrins in 2005 and now owns the trademark name.)

Heinz introduced the Keystone (and key) trademark in 1877. Heinz was optimistic after a year of business and he looked to add vinegar, chowchow, pickled pigs feet, pickled tongues, and mustard to his product line in 1877. He started a hand ground mustard product that would be sold in barrels, wooden buckets, and in crocks. Mustard was a perfect fit as a high margin product. Heinz targeted the high end of the mustard market, bringing the best mustard seed from England, France, and Italy. Heinz also developed a specialty, Düsseldorf Mustard, which was a sweet

and sour brown mustard. Düsseldorf Mustard was popular with Germans on sausage and meats. Düsseldorf Mustard garnered twice the profit margin of his standard yellow mustard. Heinz invested in a mustard mill to grind the seeds. William Underwood had pioneered bottled mustard in the 1820s, but Heinz targeted the high-end market better. Early mustards were a mix of ground mustard seed, vinegar, turmeric (for color) and few spices. Heinz added chow-chow relish to his product mix as well with good success. It was a high margin convenience product with a good shelf life and fit well into his distribution network.

The production of mustard would be the basis for chow-chow relish, a mixture of pickled vegetables and mustard, which was popular in the 1850s in Pennsylvania and Southern states. Chow-chow was a very popular Victorian relish that was often made at home, but took a lot of work in the preparation. Crosse and Blackwell was importing chow-chow in glass bottles. Tiny cucumbers or pickles were added to pieces of cabbage, onion, cauliflower, beans, and green tomatoes. The mix was then "pickled" for several days. Ground mustard, cloves, vinegar, and peppers were stirred into the heated relish. The Heinz recipe was closer to the sweeter Pennsylvania recipe. This time consuming, popular relish was again perfect for Heinz to make high profits on. By 1880, chow-chow was one of Heinz's better selling products.

Late in 1877, Heinz was working on bottled white onions, which were being imported to Pittsburgh grocers. Underwood of Boston also had a successful product on the market in Pittsburgh. Underwood had strong brand appeal in Pittsburgh, and was at the time considered Heinz's main competition. Heinz had been working on white onions for the year, but could not achieve the beautiful white onions of the competition. The success came with the selection of high quality onion plants and processing. He eliminated the use of alum as a preservative, which caused yellowing. The clear distilled vinegar also prevented coloration. His process of fermenting with salt took three to four months in a barrel. Fermentation was needed to soften the onions. Then by inspection he honed the final product for bottling.

Mincemeat was another product that Heinz started producing. Mincemeat pie had a 400-year history at the time. It was popular in Britain and the United States. Mincemeat initially was a mixture of candied fruit, suet, and pieces of meat. It originally had offered a means to preserve meat for long periods. Many recipes of the time called for rum, but Heinz used cider vinegar. Heinz also added candied citron to the recipe. The vinegar made it popular with Germans who liked the spicy and sweet combination. A published Heinz recipe called for "fresh meat selected from the country's best output; rich, white suet; large, juicy, faultless apples;

Four-Crown Valencia confection raisins, carefully seeded; plump Grecian currants of exceptional favor, each one thoroughly cleansed and purified; rich candied citron, orange, and lemon peels."[1] Like many of his early products, he packaged it in beautiful wooden storage buckets known as "firkins." It was also available glass and stone jars. The wooden buckets were often decorated with copper and used copper nails, so rust would not occur during storage. They could hold as much as a gallon. A barrel at the time varied from 31 to 40 gallons, and a hogshead equaled two barrels. Heinz standardized at a 30 gallon barrel. The package would always be a touch mark of Heinz products. The fancy buckets and beautiful barrels required Heinz to hire a full time cooper. Within a year the barrel shop would have several full time coopers and a number of laborers dedicated to barrels and firkins.

Another step for the company took place in March of 1877 when Heinz recorded his first use of tin cans. Many food processors were turning to tin cans because of the ease in shipping product long distances without the risk of breakage that came with glass and crock pottery. The tin can offered a major cost savings over glass as well. The cost advantage of tin cans remained steep until the invention of automated bottle machines in the 1890s. Underwood had made a huge fortune in supplying troops canned meat during the Civil War, which would have never been possible with glass. As early as 1870, the country was producing 30 million cans per year, mostly canned meat and beans. An Indianapolis tinsmith, Gilbert Van Camp, had introduced mass production of canned pork and beans in the Civil War. Tin cans were really iron sheets with a thin layer of tin coating. Tin is resistant to the acids of fruits and vegetables.

Heinz's effort in 1877 was experimental. At the time a tinsmith could produce 60 to 100 tin cans a day, slower than the bottling operation for sauerkraut, but the talk in the trade was that canning machines were coming. Heinz had seen one of these machines at the Philadelphia Centennial Exposition, and he wanted to be prepared. This machine could do 55 cans in an hour. His brother John set up a tin canning operation for sauerkraut that proved successful, and tin cans became cost effective. Tinsmiths had been problematic because of their high pay and refusal to work on very hot days. Heinz adjusted his machines and 1880 the machine could do 120 cans an hour. Glass would be his preference for sauces, but bulk goods such as sauerkraut fit the canning operation better.

Heinz's use of science and technology became a competitive advantage early on. H. J. Heinz also realized that food processing was an integrated process from seed to consumer. Heinz actually called it "soil to consumer." H.J. had a real asset in gardening in his cousin Fredrick Heinz. German gardening techniques were decades ahead of those the United

States, and in the 1870s, few American farmers realized the importance of seed development. With Fredrick Heinz, the company worked on the study and development of better plant seeds and fertilizer. Fredrick Heinz would be considered a professional gardener today. Fredrick and H. J. studied the various hybrids for their success in processing and product. As early as 1877, Heinz was supplying seeds for improved cucumbers and tomatoes. No other commercial food processor was supplying seeds or studying their importance at the time. Fredrick followed the plants in the Sharpsburg fields as well as all contracted fields. H. J., while committed to sales, fully supported and encouraged the work of Fredrick.

Heinz also made processing improvements. One of these was a pickle-sorting machine that allowed pickles to be sorted by size. He had first seen such a machine at the Philadelphia Exposition of 1876. While he purchased the basic mechanical sorter, John Heinz made a number of improvements to improve its speed over hand sorting. In 1879 Heinz received a patent for "Improvement in Vegetable Assorters." The result was consistency in packaging. Heinz guaranteed that the machine made "no mistakes." He further guaranteed the exact count. He sold five basic sizes in barrels, buckets, crocks, and glass bottles. The sizes were large (1000 pickles to a standard barrel of 30 gallons), large-medium (1200 pickles to a standard barrel of 30 gallons), medium (1300 pickles to a barrel), small (2400 pickles to barrel), and gherkins (3500 to a barrel). Gherkins were a small pickling cucumber from West India. Heinz promoted his mechanical sorter with etched drawings in his literature and on his invoices. He produced illustrated sales books to demonstrate pickle size. Barrels were marked 1000, 1300, 1200, 2400, and 3400, which was the exact count of pickles in the barrel. One could also buy by the 15 gallon half-barrel, with, for example, 1800 gherkins.

Heinz was addressing a common market problem of size inconsistencies in pickle barrels. Exact count and size meant more profits for the grocers. Heinz argued that a grocer could count on a profit of five to six dollars a barrel with his uniform product versus three to four for unsorted European imports. Heinz armed his salesmen with pictures and tin pickle models to exploit and promote this manufacturing advantage.

The most momentous event of 1877 would personally impact H. J. Heinz. The Great Railroad Strike of the summer of 1877 would take place while Heinz was on a business trip to Washington. This deadly national strike had started in late July as the East Coast was caught in a major heat wave. The nation was still struggling with the Panic of 1873 with unemployment high throughout the nation. The stagnation of the economy had squeezed profits on the nation's railroad companies. The Pennsylvania railroad and Baltimore and Ohio railroad had laid off thousands and

asked the remaining brakemen and firemen to take a 10 percent pay cut while doubling up on the work. The wage cuts came with the news that the railroad companies were increasing dividends.

Heinz had left Pittsburgh on July 14, 1877, in the midst of rumors of a strike. The strike would start outside Baltimore at Camden yards on July 16. As Heinz arrived in Washington, the strike started in the Baltimore and Ohio yards. It moved quickly along the line to West Virginia and west. On July 19, the Pennsylvania Railroad joined the strike, taking control of the Pittsburgh station and the switches. On the morning of July 20, no trains were moving in Maryland, Pennsylvania, West Virginia, Ohio, and Illinois. Heinz had left Washington on the 20th for Pittsburgh, but he got only as far as Baltimore, which was now engulfed in a riot. Heinz was stuck in Baltimore during the peak of the riots there as gangs, socialists, and the unemployed joined the strikers. Heinz would note the dozen deaths in Baltimore that day.

On the 21st, Pittsburgh erupted in riots and the state militia arrived. Tracks were torn up and cars burned. The unemployed and street gangs joined in the riot. Shooting broke out on both sides. By July 21 of 1877, 20 had been killed, including the sheriff, with hundreds of wounded lying on the sidewalks. Pittsburgh's Catholic Bishop Tuigg walked the streets giving last rites to the wounded; another nine would die in the streets. The Union Station was torched and freight cars of products were looted as men, women and children joined in. In all, 1383 freight cars, 104 locomotives, and 66 passenger cars were destroyed at Pittsburgh. Damage came to over $5 million. Chicago also had significant riots and property damage. In many cities the unemployed joined the strike and looting. A mob of over 20,000 terrorized Chicago. The riots traveled to the west coast by July 24. With the tracks torn up between Baltimore and Pittsburgh, Heinz did not get home until August 5. It was a time of terror for both Heinz in Baltimore and his family in Pittsburgh. The country had never known such violence except in war, and would never see such civil unrest again until the civil rights riots in the summer of 1967. Americans had only read about such work-related violence in Europe in the 1870s, but the European immigrants of the 1840s could well remember the unrest and riots caused by socialists. Heinz had often listened to the stories of his German parents about the European riots in the 1840s. Labor historian Joseph Rayback described the effect: "The Railway Strike of 1877 thoroughly shocked a large portion of the public. Not since slaveholders had ceased to be haunted by dreams of a slave uprising had the propertied elements been so terrified."[2] It was the perfect storm as the recession, heat wave, and strikers came to together on July 21, 22, and 23. It put business and family in perspective for Heinz.

Heinz feared for his factory in Pittsburgh, only a few blocks from the violence. The telegraph lines were cut, and Heinz would not get in touch with his family for days. As he arrived in Pittsburgh, the destruction resembled the pictures of the Civil War. The newspaper and politicians would debate property rights, unionism, and capitalism for months. Heinz took a hard look at the issue and came to believe that people needed to be treated fairly in the workplace. Most capitalists of the day blamed the rise of unions and the influx of foreign ideas like socialism. Heinz saw it as a basic problem of fear of not being able to feed the family, something he had recently experienced. He also agreed with the German capitalists and most Germans that poor working conditions would lead to socialism. Heinz was also closer to the economic plight of the 1870s than most capitalists of the day. His travels took him to the heart of struggling cities, and his home was in the heart of Pittsburgh, not in the rich suburbs of the time. Heinz would be committed to paternal capitalism as a necessary element of business.

The Railroad Strike of 1877 had a profound effect on Pittsburgh's capitalists. The bloody Paris revolution of 1871 where the Marxists took over the government and then were forcibly overthrown was still fresh in the minds of capitalists. In Europe and in the American press, Marxism and unionism were linked. The commercial press throughout the country started to use the terms communism and Marxism in relating the railroad riots. An editorial in the *Pittsburgh Leader* noted: "The workingman in Pittsburgh is really a communist, and there is no doubt that communist ideas have spread widely." Heinz realized that recent German immigrants were believed to be the source of this spread of communism. Heinz felt the older Gray German-Americans needed to supply the leadership for the rejection of Marxism. There had been a Marxist convention in Pittsburgh in April of 1876, which many believed to be at the root of the problem. Heinz took leadership in showing capitalism's response to improve working conditions.

He also understood the tension between men and machines of the period. Heinz looked to a blend of labor relations and automation as the solution for labor unrest. Often Heinz's application of technology is not fully appreciated. The new technology of the railroad defined his distribution network. He followed developments in the glass industry to improve his packaging. He experimented with tin canning, believing the future would be in canning machines. He applied science to seed selection. Heinz Company was one of the first to embrace the telephone. In June of 1877, Gardener Hubbard came to the Monongahela House in Pittsburgh to demonstrate the new invention of the telephone. Heinz had seen the demonstration earlier at the Philadelphia Centennial Exposition.

By January of 1878, telephones were available and the Heinz plant was one of the first in Pittsburgh to have one. The telephone would save numerous trips to his Sharpsburg operation. The telephone had been invented for business, with social calls being only a remote application in 1878. Later, in 1881, Heinz would have personal telephone lines between his and his father's home. He noted a cost of $10 to run iron wires (copper wire was not yet available) for the 300 yards between houses, and an annual rent of $50 for phone sets.

Accounting results of 1876 showed $14,000 in capital with strong profits. Heinz's accountant was concerned that the profitability might agitate old creditors, which included grocers. Feeling more sound financially at the start of 1877, Heinz offered them products in payment for the old debt. He won over many former enemies as he paid off his old debts in products and cash. The economic times were still very difficult, and many times grocers were helped by Heinz giving products and extending credit. Heinz's payments and understanding won him new friends in the Pittsburgh market. Local businessmen were amazed that Heinz was paying all debts, for in the last five years bankruptcies had destroyed many a supply chain and customer network. He went back to Chicago to reestablish his distribution there, with the same strategy of paying all debts 100 percent. Heinz had created a demand for his products in Chicago prior to the bankruptcy. The fall of 1877 created a similar cash flow issue as crops had to be harvested, purchased, and processed, but he still was able to work with an old creditor, J. Wilson, to sell in Chicago once again. Wilson did offer a 30-day payment instead of cash, allowing Heinz to feel that he could now expand into Chicago again. In Chicago, as in Cleveland and St. Louis, he started with sales "jobbers" or what today are called representatives. These jobbers sold products (often competing products) from various companies. In 1877, he only had two company salesmen, which Heinz called his "travelers." His brother Peter was one of those travelers, and at heart H. J. was a traveling salesman.

Heinz's brother Peter started as Heinz's first traveler. Peter was in and out of jail as he drank to excess daily. Peter was also known for getting women pregnant out of wedlock. Peter had become a major embarrassment to the Heinz family, yet H. J. would never give up on family. Peter, particularly, seemed favored by H. J. because of his loyalty. H. J. gave him the Washington sales district, hoping he would start over, but had to relieve him six months later. The Washington business grew quickly despite Peter's drinking and partying, but things started to come apart as Peter's drinking got worse. Peter had continued to drink, moving into whiskey selling with a small saloon. Peter had taken up with a divorced woman, and rented an apartment above a saloon. H. J. was angered by

the behavior at a personal and business level. H. J. had to physically drag Peter to the train to return to Pittsburgh. Selling Heinz products to saloons had been forbidden. In Pittsburgh, Heinz was known to check saloons for his products and remove them.

In September of 1877, Heinz moved his family from the Garrett farm to a row house in downtown Pittsburgh at 200 Second Avenue. He continued to work with area temperance groups such as the Fourth Avenue Baptist Church, where he often dragged his brother to in hope of a conversion. Heinz was part of the popular grassroots Temperance Movement of the period, which was consistent with the creed of the Methodist Church. He was extremely strict on drinking, sending suppliers, customers, and employees home if they were drinking before coming to his office. Peter Heinz was the only one who found forgiveness on a routine basis. If Peter had not been family, Heinz would have fired him with the first offense. With his father ill, H. J. Heinz had taken over as head of the family. He could be a stern disciplinarian, but like most fathers, he had a forgiving side, and Peter would play the role of the prodigal son well. Heinz, however, never demonstrated the same patience and forgiveness for the perceived laziness of his brother John.

Marketing was the center of Heinz's strategy; he often donated pickles for church and county fairs. Heinz put up an 18-foot billboard on Pittsburgh's First Avenue with 15-foot letters reading "Heinz—Pickles, Vinegar, Mustard." At first, Pittsburghers found it distasteful, but Heinz persisted. Heinz would never miss an opportunity to put an advertising sign on anything he owned, and Pittsburghers would have to get used to it. September of 1877 brought another opportunity that would become a lifelong interest: world fairs and expositions. For the Philadelphia Centennial Exposition of 1876, Pittsburghers had been given special rates to travel to Philadelphia on the Pennsylvania Railroad, which resulted in thousands visiting, including the Heinz family. The fledgling Westinghouse Air Brake company got a special train for its Pittsburgh employees. The Centennial Exposition introduced many products, such as buttered popcorn, ice cream soda fountains, and bananas. The "Iron City" exhibit was a matter of great pride in Pittsburgh, and the early preparation had started Pittsburgh on its own path to building a regional exposition center. Heinz would be part of the movement to bring an exposition center to Allegheny. A beautiful group of buildings would open on the Allegheny side of the city at South Avenue and School Street, including a Centennial Restaurant, a Machinery Hall, a Floral Hall, an art gallery, and an illuminated Berlin Fountain. The exposition opened on September 6, 1877. Heinz set up a major exhibit of his products and became a working member of the exposition. Heinz would eventually be vice-president of the

organization and would hold that post for 15 years. Heinz found great success at the exposition and aggressively presented in expositions of other cities such as Cincinnati and Chicago. On September 25, 1878, Heinz took the whole family to the opening of the Pittsburgh Exposition to see President Hayes.

Heinz was working over twelve hours a day. He often traveled five days, using the weekend to keep the books. By late 1877, he had settled on his brand name strategy to be the core of the company. His moral plan to pay back creditors convinced him that Christian principles applied in business could be profitable. Certainly, it was consistent with the principles his mother had bought him up on. The idea of food purity and cleanliness also seemed consistent with those principles. Heinz became interested in the idea of Christianity as a basis for business.

During 1877 Heinz read the *Successful Merchant: The Life of Samuel Budgett* by William Arthur, a book that would make a major impact on him. Samuel Budgett had been a merchant and grocer in England who built a business on no credit. The real story was a perfect fit of Heinz's own experiences and hopes. Budgett offered a plan to achieve growth without loans. Maybe just as important was that Budgett was a Christian businessman and showed how to apply Christian principles to operating a business. The following excerpt from *Successful Merchant* demonstrates how Heinz would emulate Budgett throughout his life:

> Yet are you inclined to think that Principle had the chief hand in his success. He was entirely a just man. He would rebuke a young salesman more severely for a slight inequality in his weighing-scales against the public, than for neglect of his duty. It was the custom of grocers to mix up pepper with an article called P.D. Mr. Budgett long kept a cask of P.D.; but at length, reflecting seriously on it one evening, he went to the shop, re-opened it, took out the hypocritical cask to a neighboring quarry, and there staved it, scattering the P.D. amongst the clods, and slags, and stones; after which he returned with a light heart to bed. There was also benevolence at the bottom of it all Mr. Budgett's proceedings as a man of business. It appeared strongly in his relations to his subalterns and working-people. Though a strict disciplinarian, and not to be imposed upon in anything, he was so humane and liberal towards all around him, that they served him as much from love as duty. He has discharged men for misconduct or disloyalty, and afterwards pensioned their families till they got other employment. His liberality in supporting charitable institutions, and in relieving private cases of distress, he knew no bounds.[3]

This amazing piece of biographic matter could have been H. J. Heinz's epitaph. Most of Budgett's principles only reinforced what Heinz's mother and father had passed on to him.

5

Years of Growth

THE YEARS 1876 AND 1877 HAD NOT only rebuilt Heinz's company, but also pointed to the future. It would take until 1879 for Heinz to repay old creditors, and he continued to put the early bankruptcy behind him. His repayment of debt won him strong friends in Pittsburgh. Business continued to be steady while the nation remained stuck in a recession. Heinz fared better because his market was the upper and middle class, which had survived the downturn better. Pittsburgh, however, started to turn around in the late 1870s as George Westinghouse expanded his air brake business and Carnegie his steel business. The population of Pittsburgh reached 156,389 and Allegheny City (North Side) reached 78,682. Pittsburgh was America's growth city and the population of Allegheny County reached 355,869. Heinz, however, was much bigger than a regional company, having markets in Philadelphia, Washington, Chicago, Baltimore, and Cincinnati. Heinz also followed the railroad, finding outlets for businesses in smaller and more distant towns such as Adrian, Michigan.

On a personal level, he moved back to Sharpsburg and became active again in Grace Church. Heinz remained active in a number of social and civic interests, and was always ready to feed tramps and the unemployed. His social passion remained the temperance movement. Politically, he remained a prominent supporter of the Republican Party and served on a number of civic development projects. Heinz made a concerted effort not to push his politics on his employees. However, the Heinz Wagons were prominent in political parades. In the 1884 presidential parades there were eighteen Heinz wagons in the three-hour-long Republican parade for James Blaine (Glover Cleveland won). It wasn't much of a political risk since Pittsburgh had a high percentage of Republicans, and small business owners such as grocers were solidly Republican.

The success of the new company in an extremely difficult economy

was remarkable. Heinz found himself in the position of making loans to grocers who had a few years earlier turned their backs on him. Even in this embryonic rebirth, Heinz was extremely generous in his loans to struggling grocers. The result would be a loyal customer base for many years. It was never about business when he was giving. He fed bums who showed up at the factory and gave food to the needy. He believed God required it of him and that business success would follow. His business was being blessed as sales grew and profits mounted. Heinz's efforts were impressive and the family moved his salary to $2500 a year ($46,000 in today's dollars). He and Sallie remained active in Sharpsburg's Grace Methodist Church, and Heinz served as a director. He loaned the church money to help meet the pastor's salary, as the bad economic times hit even the churches. Heinz, however, was working longer hours and continued traveling to extend the business. On many of these long train trips, he slept in the economy seats. The success of the new company relieved the financial concerns, but created a new internal questioning. Heinz loved his work, but was also driven to achieve. From his diary entries, it is clear he had lost balance and was concerned. A diary entry in 1879 presents the problem: "Am trying not to work too hard but fear it is almost too late. May God save my life and continue my health." By his own writing, he was obsessed with work at the age of 31. Often he could not go home until all the books were checked. He feared failure and felt only achievement could relieve the guilt of the bankruptcy. It was clear that the personal depression of 1875 still haunted him, but he questioned whether the cure of hard work was the real answer.

Heinz searched for balance in his church activities, but it did not fully solve the problem. His work with the church was just as obsessive and intense, but he drew a peace from it. Prior to 1876, Heinz served as the church's secretary, treasurer and teacher. He was assistant Sunday school superintendent in 1870, and in 1873, he became superintendent. Even in his darkest moments he kept his obligations to Sunday school service. In 1876, he broke off with a small group from Methodist Episcopal Church to join Grace Methodist. When traveling for business, Heinz visited Sunday schools across the nation. In New York he visited and noted his disappointment in the Sunday school of the famous Henry Ward Beecher. Heinz would remain active as a Sunday school superintendent till 1895, then he became a director of the Pennsylvania State Sabbath School Association. As a director, he would travel once a month, ten months a year, from Pittsburgh to Philadelphia to the association meeting. He would, near the end of his life, summarize the importance of Sunday school: "To my mind, the Sunday School is the world's greatest living force for character building and good citizenship. It has paid me the largest dividends

of any investment I ever made. I bear testimony that in my own life that Sunday school has been an influence and an inspiration second only to that of a consecrated mother."[1] Later in life, Heinz was a member of the International Sunday School Association and the World's Sunday School Association. He was vice president and director of both organizations. He was considered the driving force in beginning Sunday schools in the Orient. In his will he left $100,000 ($1.8 million today) to the University of Pittsburgh for a chair of Sunday school teaching.

Heinz met John Wanamaker, one of his best friends, a fellow traveler, and a business associate in the Pennsylvania State Sunday School Association. Wanamaker was a founder of the state association and was president until the election of Heinz in 1898. Heinz and Wanamaker not only shared a love of Sunday school, but business ideas. The department store pioneer is also known as an innovator in advertising. He was famous for his seasonal sales and his "White Sale" and was one of the first to use price tags. Wanamaker is considered the father of newspaper advertisement. He was the first to copyright a store advertisement in 1874, and Heinz clearly borrowed from Wanamaker. Like Heinz, Wanamaker was a pioneer in employee benefits and fair treatment. Wanamaker, in many ways, went further than Heinz in adopting educational benefits. Wanamaker and Heinz often shared ideas at their Sunday school meetings and on many trips. These two friends would become icons of paternal capitalism.

Heinz's Christianity was ecumenical in a time of denominational rivalry. Heinz himself had been Lutheran, Methodist, and Presbyterian. He was also close to the Baptists and attended many church programs there. His mother had argued for this type of inclusiveness: "Henry, I have one piece of advice to give you about your religion. Do not make it is narrow that it will be unattractive to others, and do not make it so broad that you leave yourself no foundation on which to stand."[2] His mother, as a Bavarian German, well understood the problems of religious division, and proved amazingly tolerant for the times. Her own Lutheranism included many old remnants of Catholicism. Both the Catholic and Lutheran German churches were divided between English and German speaking. The Heinzes were in the minority of Germans who were progressive, desiring to use English as the home language. The Heinz family showed flexibility and adaptability, which was key to their success. They wanted to put the religious struggles of Germany behind them. Heinz's cousin Fredrick and H. J.'s mother, for example, were lifelong members of Sharpsburg's German Lutheran Church. Heinz would ultimately join the Presbyterian Church for convenience of services, but his heart remained at Grace Methodist in Sharpsburg.

Heinz even embraced Catholics and Jews in a time when discrimi-

nation was rabid. Pittsburgh had a very rigid social structure that placed Presbyterian (particularly Scotch-Irish) at the top of Pittsburgh's society. Germans in the Oakland and East Liberty section had been openly accepted into the Presbyterian Church, which became known as the "Cathedral of Capitalism." At the very bottom of the social ladder were the Catholics and Lutherans, although Catholics were considered dirt bottom. Heinz even had hoped to bring Catholic pastors into his Sunday school associations, and in one of his later trips to Europe, he even met with Pope Leo XIII. In an address to the Sunday School Association in 1899, he showed that hope: "We have not only placed our Protestant denominations in position to do better and more effective work, but have secured data that will enable the Catholic Church to do the same. We each do our work in our own way, but both stand for nothing less than character building and good citizenship."[3] Heinz, like fellow German, Christian, Pittsburgher, and capitalist George Westinghouse, tore down walls to bring Christian principles to the community and workplace. Creeds were not to divide, but to allow individuality.

The one area where creed might have impacted Heinz was his adherence to temperance in life. Here Heinz was out of step with most Catholic and Lutheran Germans, who protested anti-liquor laws. The Methodist and Baptist churches were the bastions of the temperance movement, while the Presbyterian Church with many Scotch-Irish had mixed feelings about temperance. The "beer garden" was rooted in German tradition and a center of most German communities. It is not clear when or how Heinz took up the temperance movement, but his brother Peter's personal struggles with alcoholism probably had an impact. In any case, Heinz was passionate about temperance. He refused to have Heinz products in any of the 1000 saloons in the Pittsburgh area. He attended temperance rallies in all the cities he traveled. He fired employees for drinking, argued with fellow businessmen about temperance, and refused to do business with anyone under the influence. Heinz demanded only two things—temperance and loyalty of his management employees. In fairness, Heinz mellowed on his temperance demands on others over the years and never tied to impose his views on the personal lives of his workers. However, drinking at work or prior coming to work was considered reason for termination. In late years, Heinz focused more on youth, realizing temperance to be a lost cause with Pittsburgh's Catholics, Germans, Irish, and Scotch-Irish.

While in Pittsburgh and on the road, Heinz was a frequent visitor to temperance lectures at the various churches. The American temperance movement had started in the 1830s but didn't gain momentum until the 1850s. Maine passed a temperance law in 1851 with twelve other states

following over a decade. Pittsburgh had been resistant to such laws because of its Scotch-Irish majority. Still, from the 1840s, a number of temperance societies, such as the "Sons of Temperance" and the Washingtonians, found pockets of strong support in the Pittsburgh area. The Washingtonians got involved in politics and disappeared by the 1870s. Heinz went to the meetings of all groups, and formed his own company temperance society. The major temperance movement of the 1870s which Heinz participated in was the "blue ribbon" movement of Francis Murphy in 1876. Murphy talked throughout Pittsburgh at the Opera House and many churches. In 1877, his home base was the Methodist Episcopal Church at Pittsburgh's Fifth Avenue, which was a common stop for Murphy. Murphy's lectures often attracted as many as two thousand. Murphy even gained support in the predominately Scotch-Irish Presbyterian church as well. Murphy energized the old Sons of Temperance and Washingtonians in Pittsburgh, and created a new temperance generation. In Pittsburgh, Murphy got over 80,000 people to sign his temperance pledge. In 1877, Pittsburgh had over 1000 saloons, and a few years later at the end of the "blue ribbon" campaign there were under 100. Pittsburgh's temperance didn't last long, however, as European immigrants flooded the city in the 1890s.

In January of 1879, Heinz moved the family from Pittsburgh back to Sharpsburg. Sallie had trouble dealing with the constant smoke and dirt of the city. She and H. J. missed playing a more active role in Grace Church as well. Heinz had traveled the hour commute to Sharpsburg often for Sunday school and services. Sharpsburg was a pleasant burgh of Allegheny County with a population of 3500 in 1879, and Heinz felt it was a better place to raise his kids. It was also important because both Clarence (6 years) and Irene (7 years) were going to start school in Sharpsburg's six-room schoolhouse that used the moralistic *McGuffey Eclectic Reader*. H. J. Heinz became of member of the public school board and promoted the popular moralistic approach to education.

In the late 1870s, Heinz added a broad array of new products, including sweet pickles, pepper sauce, chili sauce, apple butter, quince butter, plum butter, walnut ketchup, citron preserves, currant jelly and piquant sauce. His line of jellies included apple, blackberry, grape, lemon, pineapple, raspberry, and strawberry, with strawberry being the most popular. Heinz moved into competition with housewives, but used unusual fruits to compete. One early venture was currant and quince jelly, which were popular in Europe. Quince is a small pearlike Asian fruit (Cydonia oblonga) that is edible only after cooking. Heinz also prepared quince preserves to add to his line of fruit preserves. Citron was another Asian fruit; its rinds were popular in jellies and preserves. The strategy here was to branch

into fruits not readily available for home preserving. The market for jellies and fruits had not developed as rapidly as horseradish and catsup, but it was a consistent source of cash flow. Many housewives seemed content, if not happy, to make their own jellies. Apple butter offered a better market opportunity. Heinz's mother had made an excellent apple butter, which was a specialty of the Pennsylvania Germans, but had not become widely popular. Apple butter was made by cooking down apples in cider to a thick marmalade. It was flavored with cinnamon, nutmeg, ginger and cloves. It had a long shelf life of over a year. Heinz targeted the East Coast and New England cities with great success. Most of the early advertising of apple butter was done in magazines both national and local to New England. He did have to compete with the national brand Max Ams. Max Ams had successfully started an apple butter business in New York during the 1860s. Heinz brand advertising paid off and he dominated the New England market by the 1880s. Heinz also introduced cider vinegar and distilled white vinegar, which he purchased from various sources. He sold cider vinegar in a fancy glass bottle for table use. Heinz became the first to sell individual bottles of vinegar, which had been a barrel product.

At the 1876 Philadelphia Exposition, Heinz had studied the various sauces in America. One of particular interest was Tabasco Sauce, which sold thousands of bottles at a dollar a bottle. A dollar was a day's wages for a skilled laborer in 1876. Tabasco had been developed by Edmund McIlhenny, who started growing "Tabasco" chilies on his plantation in New Orleans. The thin red fermented sauce was put in corked cologne bottles and sealed with green wax. McIlhenny was an exceptional promoter of this simple product, and by 1870 he had a sales office in London. The basic recipe was a fermented sauce from these chilies. Tabasco chilies were mashed with vinegar and salt, then aged for months in oak barrels. While the aging period was long, a small bottle commanded a high price and huge profit margin. Even hotter sauces came on the market using cayenne peppers. Heinz had hoped to duplicate the "Tabasco Sauce." Heinz was selling the product by the late 1870s but with limited success. The hot pepper sauce had not yet known popularity in the North, and Heinz did not have the single focus and brand name of Tabasco where a market existed. Heinz introduced a red and a green pepper sauce with limited success. Often these single product companies proved too much competition for Heinz to dominate, but still his brand strategy would allow him to take 5 to 10 percent of almost any market.

At the same time Eugene Durkee of New York and William Railton of Chicago introduced pepper sauces known as "Chilli" sauce. These very mild and thick sauces in hexagonally shaped bottles and cathedral

square shaped bottles fascinated Heinz. The thicker, mild, ketchup-like product found a larger market in the north. Heinz introduced his as "Chili" (dropping one l) and found a large market that remains to this day. Heinz Chili Sauce was based on thick tomato puree with bell peppers, onions, vinegar, and salt. He sold it in a fancy bottle with a wide mouth because of the thickness. Pepper seeds were visible in the clear bottle.

Heinz again tried in the late 1870s to develop a market for walnut ketchup, which was popular on the East Coast. He had worked on the recipe in the final months of Heinz, Noble and Company. Heinz had further studied the walnut ketchup of Barry and Company (British) and Crosse and Blackwell, finding them to lack a distinctive flavor and quality. The high imported price also allowed walnut ketchup to be targeted by Heinz, where his brand strategy and distribution network could be used for initial market penetration. The Heinz improved recipe called for walnut pickle liquor, soy, allspice, cloves, pepper, and other spices. One unique part of the Heinz recipe was the addition of tragacanth; eventually patented its use in 1882. Tragacanth is a tasteless and odorless red gum from a Middle Eastern shrub. The exact reason for the addition of tragacanth is not clear. Heinz appeared to use it to improve the texture and maybe as a preservative. While the walnut ketchup was never a big seller, Heinz continued to use tragacanth in other products, including mustard, and remains an additive even today. The recipe was an example of Heinz's love and pursuit of food chemistry. He was constantly experimenting for taste, flavor, and shelf life improvements. For example, during this period he used apple pulp in some of his tomato ketchups to replace sugar and add texture. It may seem strange but fruit ketchups were also popular during the period and Heinz experimented with grape, blackberry, currant, and others.

In the late 1870s and early 1880s, Heinz continued to use branding to expand markets. Pickles, for example, were still sold by grocers without any brand or source of origin with few exceptions. Heinz held to a philosophy that if he produced a superior product and branded it with the Heinz label, he could easily increase market share. He focused on the idea of getting the customer to ask for "Heinz" pickles. This approach required the utmost commitment to quality and brand advertising at all levels. His product labels were printed on the finest paper and engraved at the Philadelphia mint. These early labels were printed with lithographic stones with 20 colors, and are considered priceless today.[4] He supplied signs for local grocers, developing a print shop and advertising department at the Pittsburgh plant. His salesmen arranged displays for the grocer, managed inventory, and watched for spoiled products. When a salesman found a dirty label, it was replaced with a new one. His colorful

wagons and beautiful horses were traveling billboards. Heinz further lent his wagons for parades, large picnics, and political events. His salesmen frequented church fairs and town fairs with samples and signs. When competitors started to use copper lined kettles to produce a very green pickle by the formation of a copper toxin, salesmen used an iron needle to demonstrate the problem. An iron needle inserted into such a treated pickle would coat the needle with copper. The salesmen brought feedback on taste and problems back to H. J. to improve on. Salesmen also made price and market comparisons for Heinz. Grocers were invited to visit the factory and see the operation first hand. In the cities of Pittsburgh, Baltimore, Chicago, Washington, and Cincinnati, he used signs and billboards on every corner. By the 1880s, Heinz was getting secondary advertising as grocers advertised that they carried Heinz pickles and products. Heinz stood out in a world of unlabeled barrels and wooden boxes.

The year 1880 turned out to be a huge one in sales (doubling from $99,310 in 1878 to $197,774 in 1880), and Heinz expanded quickly to meet the demand. He contracted cucumber growers in Illinois and Indiana to support the boom in business. In the fall his employees would swell to 300, bringing in over 100 temporary women. As cash became available, Heinz expanded his bulk goods to wholesalers in markets such as Baltimore, Cincinnati, and Washington, but this was short-term strategy. His market entry strategy was first to establish sales to retail grocers on a small basis, using brand advertising, and then move to the bulk products such as pickles and vinegar. In long term, Heinz wanted to supply directly to the grocers, which was an advantage to both Heinz and the grocers. Heinz now had the volume and distribution to start direct sales in most eastern cities. In December of 1881 he sent his brother Peter to Cincinnati to set up a bulk goods agency. Heinz set up the Cincinnati operation with a colorful Heinz wagon and four spotted horses. He could not yet afford his famous Percheron horses at all his branch agencies. Still, he loved horses and would purchase them on many of his business trips across the country. In addition, H. J. and Peter developed sales operations in Chicago, Baltimore, Richmond, Cleveland, and Philadelphia by 1881.

In 1880 Heinz launched an aggressive campaign to increase sales and market through adding diverse products. Heinz and his salesmen started to "survey" grocers as to their and their customers' problems and needs. Vinegar offered one opportunity, since the grocers handled it in barrels. Vinegar was a universal product for homes, offering uses from pickling to cleaning. The customer had to supply or purchase a container that the grocer then filled from the barrel. Heinz was producing vinegar by the barrel in limited amounts. Unable to fully compete on price in the bulk barrel market, Heinz aimed at the household. He started producing

sweet apple vinegar and packaged it in a glass bottle for cooking. Small stills were built to pioneer the sale of distilled vinegar in bottles in 1881. Distilled vinegar was popular because of its clearness and pure acidic flavor. Fleischmann had actually introduced distilled vinegar, but Heinz pioneered its use the convenient glass bottle. Heinz expanded his fruit preserves line for wholesalers and developed a small line of jellies along with his experiments in apple butter. Heinz produced a small line of pepper sauces, which were popular at oyster bars. He also started to experiment with products like apple butter. All of these new products could be produced on present equipment, which increased equipment and plant utilization. This approach allowed him to actually reduce manufacturing costs with new products.

As the country started to come out of the 1873 recession, business increased across all brands. But with success came new competition. One of his trusted and highest employees, J. W. Ulam, left to start a competing business and tried to take others with him. Nothing upset Heinz more than lack of loyalty. Ulam formed a pickle company called Watson, Ulam and Company. Ulam had been with the company less than two years, but had learned the product and the marketing strategy. Rumors spread of employees wanting to join Ulam for a few more dollars a year. Heinz called together all of his employees in the summer and told them to leave now to join Ulam and not wait until the busy season in the fall. Locally Ulam took some business, but Heinz was more hurt by the broken trust and friendship. The loss only reinforced Heinz's belief in limiting high positions to family members. Besides Heinz's brothers, he added his brothers-in-law G. H. Praeger (who married his sister Lizzie in 1878) and later Sebastian Mueller (who married his sister Elizabeth in 1888). Praeger and Mueller proved to be outstanding managers. Mueller took on operations management and Praeger functioned as corporate secretary. Heinz also did his best to keep recipes secret and made some process additions himself to assure secrecy. He also developed a series of codes and a partial recipe distribution to assure no one except trusted family knew the full recipes. This approach is also reflected in the fact that the company remained in family hands for over a hundred years.

In October of 1881, Heinz's home life stabilized with the purchase of a hillside house above Sharpsburg's Canal Street overlooking the Allegheny River. He paid $6000 ($114,000 today) with a $1000 down payment on the house and property. It was an older home that had belonged to the Roach family; Heinz immediately started to refurnish it. The location allowed him to be close to his duties of Sunday school, Sharpsburg's Public School, and Grace Methodist Church. It was a large house, which he needed. His third child, Clifford Stanton Heinz, was born on December 30,

1883. Heinz celebrated the birth by introducing "Clifford's Worcester Sauce." H. J. Heinz remained close to his children and often joined in sleigh riding nights when he was in town. The problem was the amount of time he was spending on the road. By the mid–1880s, he had agencies in twelve major cities with major operations in Cincinnati, Philadelphia, and Cleveland. In addition, he had taken on duties with the Pittsburgh Exposition Society, which added to a hectic schedule. He also even had a daily commute on the train to Pittsburgh. He worked ten hours a day when in Pittsburgh, and was always behind on bookkeeping, as he traveled weekly. He tried hard to delegate duties, but found his brothers Peter and John not up to the challenge. John, in particular, proved unable to take over administrative duties, at least in H. J's opinion. John's lack of a formal routine was problematic for H. J. Heinz, but there was also some competition and jealousy between the two. John always felt he deserved more credit and authority. His cousin Fredrick was great at the farm, but not in administrative duties.

Fredrick had been a farmer and wine maker in Germany. Fredrick had also worked briefly as a gardener on arriving in America, and had developed seeds for a number of vegetables. Fredrick would prove invaluable over the years in developing hybrid seeds, managing farms, and auditing contracted growers. His brother-in-law, Sebastian Mueller, came into the organization in 1885, and quickly developed into the operations manager of the company. Mueller had worked for the German quartermaster office and had an extensive operational background. Unlike John Heinz, who argued with H. J. constantly, Mueller proved to be a loyal lieutenant. Mueller would become Heinz's "right hand" man and his most trusted employee. H. J., known for his second-guessing of management decisions, rarely questioned those of Mueller. Not even Heinz's sons would achieve the decision making freedom of Mueller over the years. Mueller, more than any other manager, was the heart and soul of the Heinz vision.

Heinz was always an early adopter of technology both at home and at the factory. Heinz loved to attend lectures on new technology such as electricity and natural gas heating. Heinz led the home conversion movement of the 1880s from dirty coal to natural gas. Inventor George Westinghouse had developed a distribution system for natural gas around the Pittsburgh area in the early 1880s. In 1883, Westinghouse came to Sharpsburg to sell his natural gas system and talked to Heinz. Heinz was convinced natural gas would be the primary source of Pittsburgh fuel and signed up for his home and factory. An early explosion in 1883 in Sharpsburg had originally caused much hesitation, but it didn't stop Heinz. Heinz added his parents' home and Grace Methodist to the list of gas users. Gas

heating, cooking, and lighting became very popular in Pittsburgh by 1886. The very fashionable and earliest of the Pittsburgh's suburbs to convert to gas, Wilkinsburg, reported the following:

> Using gas was a new experience to people and most of them were afraid of it, and [did] not know whether to turn on the gas first and then light it, or just how it should be handled. Many singed eyebrows and burned hands resulted, and even some bad burns. The gas pipes were run to the second floors on the outside of the houses. In grates and stoves T burners were used with broken pieces of firebrick. A can of water was usually set on the stove or hung before grates on account of the dry heat. Gas was plentiful and a six-room house could be heated for about $2 a month [in a time when the typical weekly pay was around $10].[5]

Heinz became a friend of Westinghouse and follower of Westinghouse's technology; later Heinz would be one of the first to use electric lighting in a factory.

In the early 1880s, Heinz started to explore the possibility of his own glass plant. He started a dialogue with area glassmakers. The issue was the use of his private molds by his food processing competitors. Watson, Ulam and Company had copied his square bottle for his fancy catsup. The glass bottle had always been key to Heinz's sales strategy, and he had patented a number of designs in 1882 for further protection. He discovered he lacked the financial resources in 1882 to move into glass making, but years later he would have his own glass works. Later he took over a ten-pot glass furnace in Sharpsburg and hired some area glass blowers to produce his own specialty bottles. By 1902 Heinz was producing a third of his glass bottle needs. It was part of his manufacturing philosophy, which would become known as vertical integration, control and ownership of the raw material supply chain. Heinz had actually studied vertical integration before Andrew Carnegie, who is often credited with its successful application. Heinz took ownership and control of his glass molds to prevent copying. He formed closer partnerships with glassmakers and took some business to Wheeling, West Virginia, glassmakers to further prevent copying by Pittsburgh glassmakers. West Virginia glassmakers were also advancing new bottle technology such as screw top lids. One of those West Virginia companies, Hazel-Atlas Glass, was part of Heinz's supply chain for bottles. Hazel-Atlas was one of the largest and most efficient bottle makers of the time.

Heinz's first major investment in the company was an old foundry on Pittsburgh's north side (Allegheny City) in early 1884. He had a very profitable year with $381,000 ($7.2 million today) in sales and $43,000 ($820,000 today) in profits. The site was important because it had direct access to the railroad, something he lacked at his Pittsburgh Second Avenue

plant. Allegheny City was happy to have new industry because its textile industry had been lost. Heinz wanted to add vinegar manufacturing to his company because it was becoming a major needed raw material, and he wanted to compete better in the barrel market. Vinegar by the barrel was a huge business in Pittsburgh and throughout his sales network. Most homes in the country had a couple barrels of vinegar in their cellars, and all grocers had vinegar barrels. Heinz was also interested in producing crystal clear distilled vinegar for his operation. Apple vinegar and even wine vinegar imparted some flavor to pickles and sauces. The vinegar plant on the north side cost $9000 and would become the core of a future manufacturing complex. Heinz spent another $11,000 on equipment for a total investment of $20,000 ($370,000 today). It took a great deal of discipline for Heinz to finance this expansion, as a stock panic in 1884 caused a loan shortage.

Heinz designed the plant to be a state-of-the-art distilled vinegar factory. His brother John was instrumental in the mechanical set-up of this factory. Over the years, Heinz had produced vinegar using the older "New Orleans" barrel method and a modified generator method. These methods took weeks, and Heinz wanted to move to the generator method, which could produce vinegar in a day. The generator method consisted of tall oak vats filled with vinegar-soaked beech wood shavings. The vinegar soaked shavings supplied the needed bacteria (Acetobacter) known as "mother of vinegar." The malt or juice was added to the top of the vat and dripped through the shavings. Beer or ale was commonly used, but with the rise of the temperance movement, a non-brewed process became popular. It then was aerated as it dripped through a false bottom. Oxygen was the key to speeding up the fermentation. The vinegar dripped through in one to three days and was then moved to storage tanks. At this point it had a very high acetic acid content, which could be as high as 14 percent, it then was diluted to 5 percent acetic acid or higher for pickling. This diluted vinegar was then boiled, creating a vapor that was condensed to a liquid. The resulting vinegar lost its entire fruit flavor and was clear. Heinz would be credited as the first to put distilled vinegar in a bottle for household use.

In the fall, Heinz's payroll went to 500 workers. He used temporary women workers, paying them 50 cents a day for a ten-hour day ($9.50 a day in today's dollars). Clerks made $3 to $6 a week. Ten-hour days and six-day weeks were the norm at the time. Labor jobs for men at the time paid 80 cents to a dollar day. Still, women flocked to work at Heinz plant, which was clean and pleasant. Floors at the Heinz plant were cleaned daily. There were washrooms and Heinz supplied clean clothes for his employees. The workforce at Heinz was often the younger woman

saving for marriage or helping augment family budgets. Immigrant steel mill families were happy to have their daughters or future wives working in the safety of the Heinz plant. Heinz was known to help out these early employees with small loans. He had employee picnics and often invited employees to dinner at his home. He even arranged lectures and free training for his employees. These practices would evolve into the earliest corporate benefit programs. Agnes Dunn, one of his first employees, took on the duty of the "factory mother," helping to train the young women and guiding them. Heinz did require loyalty, but he gave the same loyalty in return to his employees. Like most Pittsburgh capitalists, he feared unions. Heinz believed that unions were socialists and troublemakers, but he also believed that the owners had a responsibility to treat employees fairly. His treatment of employees kept the unions out, and this became a model for paternal capitalism. Paternal capitalism became a central focus, allowing Heinz to merge business and faith, and his success gained the attention of businessmen around the world.

Heinz worked to build a strong supply chain as well. He supplied the best seeds to farmers and worked with them on soil development. He well remembered how many wholesale and retail grocers had deserted him in the Panic of 1873, but it did not turn Heinz into a cold business operator. He wanted strong bonds throughout the business from suppliers to customers. Repaying his suppliers and retailers' past debts was part of that commitment. When one of his sauerkraut suppliers had problems meeting the contract, Heinz let him out of it without legal pressure. Heinz knew the importance of developing cooperative advantage. He often visited his contracted fields in Indiana to check on the crops. Once he got a deal on several railroad cars of manure, which he passed onto the Indiana fields at Laporte and Walkerton. Fredrick worked with growers to improve their yields. Heinz also arranged to set up salting stations at his contracted growers in Indiana because of transportation spoilage of cucumbers. Another supplier strategy was to contract widely separated cucumber and cabbage suppliers in case of local crop failures.

Heinz was quick to capitalize on the rise of grocery chain stores. The Atlantic and Pacific Tea Company (A&P) started on the east coast in 1859, and by 1881, A&P had over 100 stores. A&P lined its stores along the railroads to assure fresh supplies. By the end of the 1880s, chain stores were starting to change things. These stores were cash and carry. They purchased in volume, but they also wanted price discounts. They were the Wal-Marts of their day, creating small and local business resistance. The National Association of Retailer Grocers opposed them and lobbied state and federal legislatures. Heinz wanted to be part of this emerging market, but care was needed not to upset his grocer base. Heinz wanted

to resist discount pricing to chains as well, which would then sell it cheaper than the local grocer. Heinz adapted his brand strategy to maintain standardization of product price for packaged products. It was a difficult balance to maintain. Heinz could only resist so far, as the chains like A&P often created their own brand labels to go into competition with national brands. Fortunately, Heinz's direct consumer brand advertising helped prevent A&P and others from going into competition against him. The Heinz strategy made the consumer come to the grocery store asking, even demanding, the Heinz label. Heinz successfully adapted to the changing market and not only survived but thrived.

Heinz maintained an autocratic and hierarchical organization. At the top level, there were board meetings of the family at his mother's house. Details were discussed there and decisions made at the strategic level, but from the first months H. J. Heinz seemed to be in charge. It would be H. J. Heinz who brought the issues and projects for the board to discuss. H. J.'s mother seemed to be completely in step with H. J.'s management style. John, Peter, and cousin Fredrick seemed to have little interest in overall administration. At times John did challenge H. J.'s leadership, but lacked the energy and work ethic of H. J. Heinz demanded that his family and managers be able to match his rigorous schedule. H. J. basically outworked the others and set a pace that no one wanted to compete with. None of the others wanted anything to do with the bookkeeping duties, which at times overwhelmed H. J. when he traveled. John would eventually submit to a secondary role, but he felt he deserved more.

H. J. Heinz also got into the routine of a daily operating meeting with his key employees. At the plant level there were daily meetings of supervision. Similarly, H. J. liked to meet often with his salesmen. Heinz always controlled his foremen to a high degree. In cities where he had a branch, such as New York, he would visit the manager on a monthly basis. He removed many a manager on personal, ethical, and performance standards. His early organization and culture building would pay dividends over the years. He aggressively trimmed and groomed his employees.

The railroads more than any other technology were behind Heinz's rapid success. The railroads tied his Indiana and Illinois cucumber fields to his Pittsburgh factory. The railroads framed his sales network, and Heinz expanded along the lines out of Pittsburgh. Refrigerated cars, common by 1882, allowed food processing to be centralized from many local operations. The technology used cut ice and salt to chill down the car. Refrigerated cars opened the Southern fruit and vegetable products to the north and changed the overall food market; processed meat became centralized in Chicago. Railroads created national businesses, rapid

travel, and new networks. The railroads were the basis of Heinz's branch expansion across the country.

The railroads also helped spread the Heinz brand to new areas. Restaurants and sandwich shops developed at the railroad stops. In the 1870s, Fred Harvey started quick stop eateries on the Atchison, Topeka, and Santa Fe Railroad. It wasn't the volume of these food stops that interested Heinz, but the advertising potential of spreading the word about his sauces. These railroad rest stops, coupled with national magazine advertising, made Heinz a well-known national brand by the end of the decade. Heinz went further with signs along railroad tracks throughout the country. These signs spread the Heinz brand to thousands of railroad passengers every day from all over the country. Railroad and river sign advertising was something that H. J. Heinz more than anyone else pioneered in this country with great success.

Heinz would also get a major boost in his pickle and ketchup sales from the protectionist Republican administration of 1883. Congress passed a tariff bill in 1883 to help protect domestic producers, including vegetables. The Tariff Act of 1883 put a 10 percent duty on vegetable products. Heinz sales increased 23 percent from $359,055 to $442,581 in the first year of the tariff, and sales doubled to $1,235,184 by the end of the decade. Heinz penetrated more East Coast markets with the help of the tariffs. The tariff included the tomatoes and pickles, which were technically fruits of the vine. Importers challenged the tariff on tomatoes and pickles, but the Supreme Court ruled the tomato and the pickle a vegetable for tariff purposes. The tariff and railroads made Heinz into a major national pickle manufacturer by 1889. Republican capitalists of the period—Heinz, Westinghouse, Carnegie and Frick—poured the windfall profits from the tariffs into factory expansion and job creation. The Republican tariffs would lead to a great expansion for Heinz and others.

6

Europe and Expansion

The expansion and profitability of F. and J. Heinz Company had the family thinking about a visit to Germany. Hard work and massive profits had put Heinz in a position to return to the homeland. This was a common goal of immigrant Germans, who often had extensive family ties in Germany. As early as 1885, the family was taking German lessons in expectation of a trip. The Heinz family had always kept in touch with their German relatives, encouraging many to come to Pittsburgh. H. J.'s parents had visited Germany just a few years earlier. Brother Peter was given a vacation there in 1885 in hopes that it would turn him around. The family had to once again pull him out of an ill-fated relationship in 1885. A type of marriage arrangement was made for Peter in Germany. The final decision for the family to go to Germany came as H. J. saw some business potential in expanding the trip to other European nations. Mother Heinz pushed for the trip as well, hoping it would break the work addiction of H. J. He struggled, leaving his company for three months. As of yet, no one had shown the ability to replace Heinz. Of course, it would be difficult to meet Heinz's high expectations. H. J. did feel confident in the departmental abilities such as John in mechanical maintenance, Fredrick with the crops, and Praeger with operations. He had hand picked and personally trained the salesmen and he was confident in them. The trip would actually help Henry to delegate more on his return, but delegation would always be a weakness. Heinz also selected the slowest period for his very seasonal operation and left endless instructions.

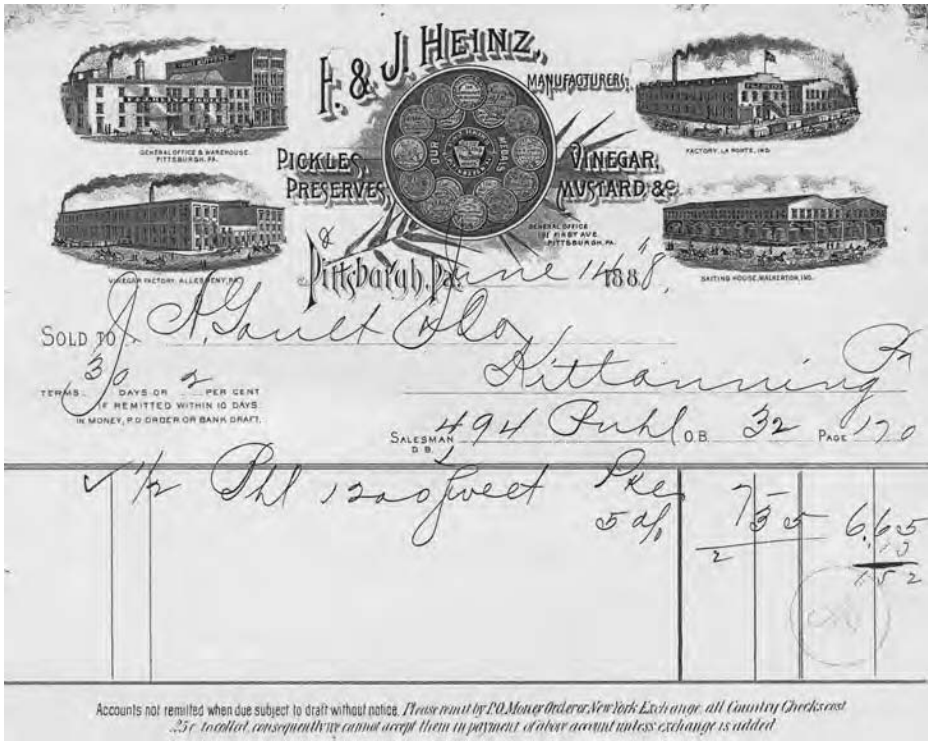
Somewhat hesitant, Heinz gathered his party of eight on May 25, 1886, for the trip. The party included Heinz and his wife Sallie, his sister Mary, sister-in-law Lizzie Praeger, and the children—Irene (age 14), Clarence (age 13), Howard (age 8), and Clifford (age 2). Heinz packed his samples, including ketchup, Heinz Chili Sauce and mustard in the fashionable

"Gladstone" bag. In addition, he had five cargo cases of Heinz products. The trip started at Pittsburgh's Union Station with a farewell address by their closest friend, the Reverend Wood. They would travel to Jersey City to take an 8-day sea voyage to Liverpool, a 3100-mile trip. The trip formed the roots of a lifelong passion for traveling.

Details of the trip are abundant thanks to journaling of H. J. Heinz. The family crossed the Atlantic in style on the German steamer *City of Berlin*. It was a huge state-of-the-art paddle wheeler. The ship had 82 crewmembers and 422 passengers. Heinz's accommodations included two large staterooms with an adjoining bathroom. They also had a separate family table for meals.

Heinz was an amazing traveler, a cross between Mark Twain and the fictional character Phileas Fogg in *Around the World in Eighty Days*. Heinz had traveled the American railroads, becoming very seasoned and comfortable with travel. He detailed the operations of the ship, including speed determination and how the crew performed the work. He detailed dimensions, carrying a tape measure, which had been his habit since his brick laying days. He was also obsessed with time and timing small operations. He and his son Howard toured the engine room, noting operational details. Howard, like his Uncle John, had an interest in the mechanical. Heinz detailed equipment such as the ship's compass and foghorn. He noted how the ship was organized and managed, including crew schedules and how they were disciplined. His journals were closer to a scientist's such as Thomas Edison. He was fascinated by the effect of the Gulf Stream on the ship's progress and navigation.

Arriving first in Liverpool, Heinz seemed not much impressed, but that changed when he arrived in London. The Heinz party arrived in London late on Saturday, June 12, 1886, and Heinz had planned a two-week tour packed with every site possible. The family attended services on Sunday at Wesleyan City Road Chapel, the chapel of John Wesley in 1778. Heinz had dreamed of this day; he looked over all of Wesley's artifacts and took a small pebble from the grave of Wesley. Heinz would become a souvenir and memento junkie. In the afternoon, he visited the Sunday school of the Free Methodist Church and took notes on their approach to teaching. He noted the English were more rigid on sticking to biblical verses, while Americans tended to bring in more life lessons to complement the biblical text. Heinz, like most Americans, believed in the moralistic educational approach of teachers like William McGuffey. In the evening, he went to see the famous Baptist Reverend Charles Spurgeon at the Metropolitan Tabernacle. This would be one of his most satisfying days, with tours of other graves of religious and literary heroes, such as John Bunyan (*Pilgrim's Progress*), Daniel Defoe (*Robinson Crusoe*), and



An F. and J. Heinz invoice showing the plant assets in 1888 (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 2).

Thomas Cromwell. Later on the trip, Heinz would visit Martin Luther's church in Germany. Whatever the country, Heinz planned visits to churches, Sunday schools, and even a synagogue.

The next week included well-known tourist sites, as well as glass factories, pickle manufacturers, vinegar factories, and grocers. He studied the Prince Albert Memorial, which honored the Great Exhibition of 1851. The momentous visit, however, would be to the famous grocery of Fortnum and Mason. Fortnum and Mason had a history of specialty foods going back to 1761, and Heinz was well aware of their heritage. Fortnum and Mason supplied Victorian high society with canned specialties and exotic foods. They stressed beautiful glass containers and packaging. They prepared picnic baskets for the wealthy on derby days, and it was the favorite store of the famous such as Charles Dickens. British merchants fought to have their displays in this store. Crosse and Blackwell did a strong business with Fortnum and Mason. H. J. Heinz, on Friday, June 18, approached this establishment with his sales pitch.

Amazingly, Heinz made it to the office of one of the buyers. Usually a letter of introduction was required in Victorian times, but Heinz the salesman was hard to refuse. He had seven of his products in his Gladstone bag. He launched a prepared sales presentation and offered samples of his ketchup, horseradish, and chili sauce. Heinz's well packaged, high quality condiments were a perfect fit for Fortnum and Mason. Their line of products had high margins and little concern for the price. The store was close to that of a world's fair exhibition with its beautiful displays and extravagant presentations. The American origin of Heinz's products also made them a bit unique and exotic. Contrary to many historical legends, baked beans was not one of the products introduced in 1886 (that would come later, in 1901). The sale didn't mean a lot of business, but it was an inroad. Heinz was able to get a supply contact, and the relationship would ultimately launch his international operations years later. Heinz had fallen in love with the city of London and hoped to return and open a branch.

In June, the Heinz party moved on to Paris for a few days and then went to Strasbourg and Wildbad. In Germany the family was anxious to visit with German doctors, whom they believed superior to American doctors. German doctors focused more on prevention and the use of diet and exercise. H. J. was a bit of a hypochondriac, and visiting doctors and health spas was part of his justification for the trip. Young Clarence, in particular, seemed to suffer from many aliments, such as asthma, which Heinz hoped the German approach could resolve. Sicknesses would dog Clarence throughout his life. In Heidelberg, he had Clarence checked out by German doctors. They removed Clarence's tonsils and adenoids. Sallie was also anxious to have German doctors treat her arthritis. Heinz would also visit the famous health spas at Bad Kissingen, Germany. Also in Germany, Heinz studied a wide range of German factories and their paternal approach to management. The Stollwerck Brothers chocolate factory changed many of Heinz's approaches.

Stollwerck Brothers was at the time one of the world's largest candy factories. Its founder, Franz Stollwerck, was a marketing wizard, and one that Heinz hoped to emulate. When Heinz visited Stollwerck's factory, it was producing over 375 chocolate products and using over 900 sales representatives. This customer oriented and brand approach was consistent with that of Heinz. The Stollwerck candies were molded into fancy shapes and images. Having started with cough drops, Stollwerck sold his chocolates as a "health" food. Heinz shared this fascination with the health benefits of food as well as his unique sales approach. Stollwerck used his sales distribution network to manufacture and sell fruit preserves and imported products such as tea. The key to Stollwerck's success was

distribution, packaging, and efficient production. Heinz was even able to peddle some of his products for Stollwerck's distribution. But it was in the manufacturing process that Heinz learned much.

The Stollwerck factory was highly automated but still employed 600 people. Heinrich Stollwerck was similar to John Heinz in his ability to mechanize and adapt machinery to the process. Heinz observed a steam driven array of machinery to manufacture chocolates that had previously required many hands. He made chocolate like the Krupp steelworks made steel. At the time, the Stollwerck brothers were experimenting with the revolutionary idea of vending machines. Just as amazing was the social and paternal environment that helped employees at work and at home. Heinz would learn much from the paternal capitalism of the Stollwerck brothers. The factory had a lunchroom, coffee house, and store. The lunchroom had music for the employees. There was a "social" manager to help employees with a variety of problems. There were large employee picnics and dinners. The exceptional treatment of the women in the workplace was another principle stressed by the Stollwerck brothers. The factory was particularly interested in the health of its employees, making doctors available to them. Small hospitals were also associated with German factories. Employees were given help with housing as well, but this was not common. Heinz noted this paternalism throughout his factory tours in Germany. German socialists saw this paternalism as a form of slavery, similar to the old plantation system of the American south.

Heinz had already been practicing a type of paternalism in his embryonic company, but what he saw in Germany had no equal in America. The German industry was using a large amount of women workers, and their paternalism reflected it. There were schools for older children, kindergarten for those 2 to 7, and a nursery for infants up to 2 years old. The employees were given land for gardens and a store for other needs. There was a disciplinary system, however, with possible dismissal for not taking care of those gardens. Discipline was seen as consistent with paternalism. There were bathhouses and lunchrooms. Employees often had health care and pensions. Housing was usually not given but communities were built around the factory and the owners' mansions. Companies held major parties on Christmas and Midsummer Eve (June 23) for employees and families. The German paternal capitalism movement that Heinz observed in 1886 was a reaction to the trade unions and socialists of Germany. Heinz noted differences between the German approach and the American forms of paternalism.

Another difference Heinz saw in the German approach was the strong link to the community around the factory. The German manufacturing community was neo-feudal with houses built around the master's

mansion. Heinz had seen similar communal German manufacturing in the Pittsburgh area at Economy Village, one of many German communal manufacturing villages in America. These villages, while successful in the United States, had been separatists. In Germany, Heinz saw a type of "company town," not with the negative connotation of today, but as a positive relationship. There were many things Heinz liked about the German approach, but he also felt it was sometimes too socialistic. Heinz was also aware of fellow German-American and Pittsburgher George Westinghouse, who was also pioneering the German factory paternalism in his air brake factory. The German approach, however, was in stark contrast to that of fellow Pittsburgher Andrew Carnegie, whose workers lived in industrial slums. What all three of these Pittsburgh industrialists shared was opposition to unions and a fear of socialism spreading to America. Heinz learned well on his many factory tours and a few years later won a gold medal at the Paris Exposition for "the policy of a firm tending to the improvement of factory conditions."

Heinz toured sewing machine factories, breweries, meat packing operations, government offices, food processors, department stores, and small markets. In Holland he studied the growing and preparation of cauliflower, and bought 200 casks for shipment back to Pittsburgh. Heinz's visit to Europe was packed with tours, sightseeing, and souvenir collecting as well. He looked to collect building stones and pieces of brick. He measured structures and reviewed their construction techniques. In Holland, he saw first hand a riot between socialists and police where 24 were killed. His observations are reminiscent of the railroad riots of 1877, which he also had viewed first hand. Heinz became convinced that German style factory paternalism was the alternative to the spread of socialism. The secondary benefit was the higher productivity and quality production. Of course, Heinz was already pioneering this paternal management style prior to his trip to Europe, but now he had a head full of new ideas to implement.

Heinz studied the focus on purity in German food processing. Purity laws on the quality of grain and hops, in particular, governed the German brewing industry. Purity and flavor were controlled at the growing source as well. Suppliers were held to strict quality requirements. Government played a key role in the assurance of food quality, a lesson that Heinz would apply in his evolution to the progressive wing of the Republican Party and his national food purity campaign of the 1900s. Another striking difference in German processing was the use of scientific instruments and chemical analysis to control the process. Throughout the German food industry Heinz saw the application of chemistry, which was not a separate discipline in the United States. German food processors built their

market niches based on the branding of their quality and even had in-house laboratories. Heinz studied and recorded the details of this approach for future use in his company. While the Europeans were ahead in purity, process control and quality, Heinz realized that they were weak in marketing of their brand advantage, with the exception of the chocolate companies. Heinz would combine marketing with German quality to build his food processing empire.

Heinz's journal is filled with notes on everything; almost nothing was too obscure to record. The railroad misplaced some of their bags and they were sent to New York instead of London. He ran into rude cab drivers and had trouble making connections. The kids made travel difficult with endless problems and requests. Heinz would prove to be a calm traveler, facing with patience the many inconveniences. He visited relatives in the "old country" and completed the arrangements for the marriage of his brother. H J. and his sister visited the Heinz's ancestral home at Kallstadt and their father's sisters and older brother. Heinz strengthened his family relationships and over the years found work for many in America. He started his collection of clocks and watches, which he would maintain all his life. At the end of the trip he met his brother Peter and gave him money as a wedding gift and the necessary funds to get home. Peter married Pauline Mertz in Germany and then returned to continue to work in sales for the Heinz Company. Overall H. J. was a natural traveler and seemed tireless in his visits of churches, factories, markets, and monuments.

On their return to New York, his manager there met him at the dock with the news that his youngest brother, Jacob, was in a Philadelphia hotel struggling with typhoid fever. H. J. and Sallie went to Philadelphia to bring Jacob back to Pittsburgh. Within a week Jacob died. The year ended with the death of his sister, Maggie, the wife of George Praeger. The personal setbacks only agitated the returning Heinz, who was critical of the operation while he was in Europe. John had been running the Allegheny vinegar plant and Pittsburgh manufacturing. A brilliant mechanic, John lacked managerial skills equal to those of H. J. The clash between John and H. J. continued to grow worse. H. J. was a strong willed and controlling manager. He was paternal with his organization, but that cut two ways. There was the loving father and the disciplinarian. While most of his employees saw the loving father, his managers more often than not saw the disciplinarian. The perfectionist Heinz demanded strict starting times and long hours. Family members had a hard time living up to his expectations. John also challenged H. J. on operating decisions, which was difficult for Heinz to accept. Still, the company continued its growth through the end of 1886.

Heinz had a plethora of ideas from his European tour that he wanted to implement, and the problem of John's role in the company became paramount in 1887. The fall season of 1886 did, however, deliver huge profits, and agencies in the large Eastern cities continued to increase sales to beyond his factory capacity. The economy was strong nationally and locally. The company experienced problems getting employees during 1886 and 1887. Heinz expanded his employment of women because of the labor shortage in Pittsburgh. Carnegie Steel was bringing in thousands of immigrants to fill positions in the steel mills. Westinghouse Air Brake was also expanding rapidly, making the labor market extremely tight. Heinz, like Westinghouse, moved women into a number of new jobs previously held by men only. Heinz limited women to non-machine operating jobs. The first wave of immigration in the 1880s into Pittsburgh tended to be single males, but with time that changed to families, which brought in women workers for Heinz and even Westinghouse. These immigrant families were economic units in which all worked. Daughters, in particular, needed to find jobs to help out. The steel mills remained the domain of men and boys.

John Heinz remained dissatisfied with his role and dominating brother. H. J.'s perfectionism and workaholism made him intolerable of others' shortcomings in management. The tension with John had gone on for ten years, but now H. J. had established himself as the "owner." John's tardiness became an issue in H. J.'s mind, and after failing to change John, H. J. took over plant operations. H. J. Heinz was not in full charge; he still had to deal with a family board. Technically, H. J.'s ownership was 50 percent through his wife, Sallie's, share. John, cousin Fredrick, and Heinz's mother, Anna, owned one-sixth each. At the family boardroom at Anna's house, Anna functioned as chairman (usually siding with H. J.). In 1888, Fredrick sold some of his interest to H. J., effectively giving H. J. control. Still it was clear some arrangement was needed with John. It was hoped that John would take a branch of the company he could run independently in return for his one-sixth interest. John wanted to sell out but at a high premium over book value, which strained and divided the family board.

The result was the formation of an "independent" arbitration board. The family board selected G.W. Hahn, a friend of H. J., and Harlow French of Grace Church. The third member was Doctor Wood (who had presided at H. J.'s wedding). The arbitrators clearly favored H. J., and John threatened a legal settlement. The family tried to settle it once again under the guidance of mother Anna. John wanted up to 30 percent over book value for goodwill. H. J. and the others refused to pay goodwill and tried to convince him to take over the vinegar plant, which he could run as his

own. John, however, no longer wanted to be part of the operation, and it is doubtful that John could have been a supplier to H. J. without much continued tension. John asked for an outright payment of $60,000 (about $1 million in today's dollars). The board held out for $58,000, which John finally accepted. With John out, Anna moved to rename the company "H. J. Heinz" on November 1, 1888, while H. J. recorded in his diary that it was settled "amicably." It was far from that. John initially tried to take some employees to start an out-of-state operation. Relationships between John and H. J. would never be close, although H. J. was generous to John and his family in his will.

With H. J. now the owner and president, he moved forward to implement an array of new ideas. He purchased automated equipment to clean horseradishes. With John gone, Heinz came to depend more on his brother-in-law Sebastian Mueller (1860–1938). He expanded his purchase of horses, focusing once again on black prize-winning Percherons. These beautiful draft horses would become part of his branding strategy. A Percheron at the time cost $275 or about three thousand in today's dollars, but the company was highly profitable, and Heinz was planning to breed the horses. By 1888, Heinz had over seventy horses, with thirty stabled at his Pittsburgh factory. The stable was becoming a major operation in itself with H. J. demanding daily cleaning. By 1889, Heinz started to change his approach in the use of his wagons, horses, and salesmen. Heinz started to aggressively expand his traveling sales force, which increased from 5 in 1881 to 50 in 1888. The traveler was a key part of his brand strategy and the elimination of middlemen wholesalers. Travelers were hired to deal directly with the grocers, performing the role of the wholesaler. A traveler helped the grocer manage inventory and set up displays and sampling tables. Travelers were personally hired and trained by H. J. Heinz. The cash flow of the 1880s and the family reorganization allowed Heinz to form the company that he had been dreaming of since he began the business.

In the early 1880s, Heinz had started to use salesmen catalogs. The simple catalog had pictures of his products and pictures of how to display them at the grocery. The catalog also stressed uniformity in packaging, which Heinz had achieved in his operation. The catalog had detailed pictures of pickle sizes and calculations of how uniform sizing would increase grocers' profits.

Heinz's salesmen became a strategic advantage over the competition. The salesmen could take orders, but in major sales districts such as Pittsburgh, the salesman came to the grocer with a well-stocked wagon of products. The daily stocking and estimating of the product mix created some inventory and handling problems for the growing Heinz Company,

but was needed to support Heinz's overall strategy of diverse product mix. In 1889, Heinz moved to getting the hotels, retail grocers, wholesale grocers, and restaurants to pre-order. The salesmen could then load the ordered products in the morning and deliver. This was a break from the traditional sales point interaction. His beautiful hand painted wagons became more central to his sales strategy, acting as a brand advertisement. Boys were hired to drive and clean the wagons and care for the horses, freeing the salesmen to sell more. This allowed the salesman to become more professional in his sales and help manage inventory better. Heinz Company could no longer operate as a "huckster," but needed to manage its huge inventory, and the sales force was the key to this strategy, especially since the inventory had shelf life limitations and required routine review at the grocery. With pre-ordering, products could be kept in cool storage at the Heinz plant until delivery.

The increased size of the company required some changes in management structure as well. The organization had grown to branch manager or agency managers, each having a number of salesmen. The strategy was to supply retailers directly, avoiding wholesalers and the related markup. The real goal of brand advertising was to get the customers to get the grocers to buy Heinz. The larger branch offices of Baltimore, Washington, and St. Louis had assistant managers as well as warehouses. Until 1888, Heinz held an annual meeting of branch managers and salesmen in Pittsburgh, but the organization was too large to manage as a single entity. Heinz moved to a more decentralized sales organization with the districts having their own annual sales meeting. An annual Pittsburgh meeting was held for the branch managers and their assistants. Heinz would, of course, attend the district meetings, so while more decentralized, the organization remained autocratic. Heinz continued to be hard on his branch managers, expecting them to work long hours and live by high moral standards. He watched his branch managers closely, firing them for laziness, such as in the case of his New York branch manager. His Philadelphia manager was fired for adultery. Many salesmen had already been removed for drinking, including an assistant manager in the Washington branch, and his replacement manager in the Philadelphia branch. Heinz wanted a single corporate image in what today one would view as a franchise. Heinz felt that management infrastructure was key to corporate image, but it was difficult to set such moral standards. He would not tolerate drinking, running around, divorce, and swearing. His own brother Peter was one of his biggest problems in this respect.

His traveling salesmen remained at the heart of the organization. The traveler coordinated with the agency and warehouse, but also implemented sales strategies directly from H. J. Heinz's Pittsburgh office. Heinz sent

memos to his travelers often and started a newsletter for them. Travelers followed specific instructions on china and linen for the grocer sampling tables. Handbooks defined display styles. Travelers acted as inspectors as well. They dusted products, cleaned shelves, destroyed bad products, and put on clean labels if necessary. Cleanliness and quality were attributes that Heinz maintained from the field to the customer's dining table and that housewives looked to as they started to buy processed foods. These attributes created a large segment of the market where Heinz stood alone. This was his competitive advantage in his earliest days, and he needed good travelers to maintain the advantage as the company expanded. His regional and corporate sales meetings stressed training.

Heinz also used his travelers to report back on the competition and market. Travelers supplied postcards and recipe cards to the grocers, servicing geographical areas loosely around the branches and agencies. Travelers also helped maintain booths at local fairs and grocer picnics. In towns where grocers were controlled or dependent on wholesalers, travelers might go door-to-door with samples to create market demand.

Heinz's Pittsburgh and regional sales became the heart of standardizing the "Heinz Way." Sales meetings focused on training, sales campaigns, plant tours, talks by key executives, and a lot of singing. Heinz built friendship, loyalty, and culture at these meetings. Heinz pioneered the idea of the annual national sales meeting. H. J. Heinz was the first to propose a standardized national organization. Corporate image, like the brand, had to be consistent. Heinz saw the salesmen as an integral part of the corporate brand. H. J. Heinz and the corporate officers were required to speak at these meetings. Seminars included such things as how to display products or set up sampling tables. Dress codes were strictly enforced as part of the brand image. Heinz fostered the idea of the traveler as a professional employee.

With production capacity limited and sales and product lines growing, Heinz turned to more automation to increase production. Heinz was manufacturing malt vinegar for table use, distilled vinegar for pickling, and the still popular cider vinegar for general use. Heinz invested in the new automated cider presses of Boomer and Boschert of Syracuse. These new cider presses not only increased productivity but also allowed a 24-hour operation. The 24-hour operation permitted him to move from a one shift to three-shift operation. It was clear that Heinz needed to speed up his plans for new factories as well if he wanted to maintain corporate growth. He purchased land on Pittsburgh's north side (Allegheny City) for this future factory. The land consisted of twenty-four lots in the Eighth Ward. It was a large piece of land costing $50,000 but having plenty of room for future needs. He got approval for a direct connection with the

Pittsburgh and Western Railroad, which he did not have at the Pittsburgh location. This would give him a strategic tie to his Indiana and Illinois farms and western markets for his products. The North Side also would allow for docks and a direct river connection to river towns such as Cincinnati, St. Louis, and New Orleans.

Another change of the late 1880s was a move towards branding by quality levels. Heinz had from the earliest days used two quality levels as a sales strategy and had pioneered many tactics in product branding. In the late 1880s, he was in a volume position to coordinate this business strategy. In many of his brands, such as ketchup, Heinz moved to a three-tier strategy of branding: a fancy label (Keystone Extra Fancy), standard label (Howard's Brand), and a lower level (Duquesne Brand). While the recipes varied, the branding strategy was a combination of raw material quality and market pricing. For example, in the 1890s, Fancy Ketchup sold for 45 cents a bottle, standard brand for 25 cents a bottle, and Duquesne Brand for 15 cents. History suggests the brand strategy initially evolved from raw material variation more than from a pricing strategy. A three-tier strategy helped with purchasing and process flexibility while increasing volume. It actually improved Heinz's ability to maintain quality standards by grading during the process. The common strategy of the time for his competitors was to specialize in a quality or grade level. Often the fight was for the high quality market. Heinz was one of the first to tap into the rise of American consumerism with value pricing and branding.

Size and volume manufacturing did create tension in his employee relations as Heinz moved to mass production. By the late 1880s, Heinz Company was a national brand and a mass producer. He had over thousand employees, many working long hours. It was far from the family business of only a few years ago. He had maintained a family type environment, but the long hours often conflicted with his family approach. Heinz started to lament that he no longer knew the names of all his employees. Pittsburgh capitalist George Westinghouse had started to give his employees at least a half-day off on Saturdays, and Heinz followed quickly. Heinz struggled to give vacations to his clerks. His clerks were given a one to two week vacation in the slow period of midsummer. His manufacturing capacity was also being strained to the limit. H. J. also wanted to move to the German system that had impressed him in 1886. Rapid growth strained his resources, and Heinz had started planning for a new factory when he returned from Europe.

A real boost in the manufacturing management came in 1888 with the promotion of his brother-in-law Sebastian Mueller to general manager of manufacturing. Mueller was given operations control of all factories and salting stations. Mueller had started with the company in 1884.

While Heinz was in Europe, Mueller had demonstrated his managerial skills. When John Heinz was bought out of the company, Mueller took over the mechanical duties of machine design, innovation and improvement. Mueller had walked a tightrope in the family struggle between H. J. and John. Sebastian was clearly in H. J.'s camp and won the trust of the rest of the family. Originally, H. J. had been lukewarm to the marriage to his sister Elizabeth because they were full cousins, but mother Heinz was firmly supportive. Mueller, however, had the best business experience in the family. Mueller more than anyone contributed to the transition of the company to a mass producer. Heinz cherished his unwavering loyalty as well. A few months prior to the promotion and wedding, Heinz had lost another trusted employee that opened a competing pickle business. Ida Kimmel had been a clerk in the factory. Kimmel opened up Watkins and Kimmel, which never achieved much success, but these employee break offs were deeply troubling to H. J. Heinz. His brand name, however, had become a large barrier to entry for these spin-offs.

Mueller had a similar operating philosophy as Heinz, and he excelled at taking Heinz's concepts and principles and applying them. He was well versed in German paternalism that Heinz had been so impressed with. It was Mueller who revolutionized the working environment for his women employees. Mueller would also fit the role of a company father. He even expanded on the health benefits to his employees. Employee health was one of the fundamental ideas of German factory paternalism, and common to both Heinz and Mueller. Mueller seemed to cherish his role as Henry's lieutenant. Fredrick Heinz found a similar trust with H. J. in supervising contracted vegetable fields.

This allowed Heinz to focus on sales and marketing, where his heart was. H. J. Heinz's travel schedule for February of 1888 reflects this passion. In that single month, H. J. visited Charleston, South Carolina; Jacksonville, Florida; Orlando; then went to New York, stopping throughout the Carolinas. Heinz used a combination of ship and train to transverse the east coast. He didn't return to Pittsburgh until March 4. Before Mueller's promotion, such sustained sales trips would have been impossible. Feeling complete trust in Mueller, Heinz applied his creativity to product development, marketing, and sales. Mueller found ways to keep up production to meet demand and manufacture Heinz's many new product ideas. Having a strong operations manager in Mueller would allow the exponential growth that was to come over the next twenty years. Mueller's role is often overlooked, but he was a major part in the success of the company. Mueller would become an operations expert in U.S. food processing and national leader in the application of scientific man-

agement, making speeches at many management conferences. Mueller would also play the role of mentor to Heinz's sons.

Heinz started his sons as part-timers in 1885. Clarence was 12 and Howard was 8. H. J. Heinz believed it was time for them to at least go to work with him. Heinz looked to his early years as the model for his sons. Clarence Noble was a sickly kid who early on showed little aptitude for business. He did struggle to live up to the high expectations of his father without much success. By 1888, Heinz had Clarence and Howard involved in some of the farming operations in Indiana. Clarence ended up injured and suffered from such injuries throughout his life. At times, Clarence showed some artistic flair for advertising, but he lacked basic business skills. Howard would fare a bit better, but H. J. was a difficult taskmaster. Howard also proved to be adaptable and flexible under the tutelage of Sebastian Mueller. Howard also early on had exhibited a strong physical construction. Howard adapted to hard work on the farms, which his father had demanded of the boys. He took to school the best of the three brothers as well. From the outside, Howard was an all–American type teenager, but H. J. could still be overly critical. Mueller, on the other hand, played the role of a helpful uncle.

7

Pittsburgh Industrialist

By the end of 1888, H. J. Heinz was a major Pittsburgh industrialist. The company was his and the profits poured in. The expansion continued westward with branches in San Francisco and Denver. Heinz was an international company by 1890 with substantial exports. In 1889, Heinz won the first medal at the Paris Exposition ever given to an American pickler. Several years later he won a similar medal at the World's Fair at Antwerp. Heinz's personal and professional life reflected this newfound prosperity. All the hard work was now paying off. The homestead in Sharpsburg was extended, and he bought gifts for his wife at Tiffany's. The Heinz exhibit at the Columbian Exposition of 1893 replicated that wealth and success. His reputation was restored as well. Local business leaders were asking Heinz to sit on their boards. He became a director of the Pittsburgh Exposition, which he would lead to distinction. The biggest event of the late 1880s and early 1890s was the building of a new factory and the establishment of an industrial utopia. The company went international with European sales branches and factories. By 1889 Heinz was more than successful; he was wealthy. Heinz was asked to join a trust of preserves manufacturers, but refused, feeling the company was large enough to compete on its own nationally. Heinz opposed the popular movement towards trusts, believing the restriction on competition would hurt all. In this respect, Heinz was one of the first to embrace progressivism in the Republican Party.

The community of Pittsburgh was blessed to have Heinz's marketing skills of the Exposition Board. Pittsburgh of 1889 was a boom city and America's premier industrial center. The population of Pittsburgh was around 320,000, Allegheny City was around 110,000, and surrounding Allegheny County had a population of 775,000. The overall population had doubled from 1870 to 1890. Allegheny County had seen an influx of

over 300,000 immigrants from 1880 to 1900. Most of these were from Austria-Hungary, Poland, Russia, the Baltic States, and Italy. The real wave of these immigrants was just beginning in 1890. These new immigrants were not only changing the nature of the workforce, but the American diet. Carnegie's steel mills had established world production and productivity records. Pittsburgh of late 1889 was the nation's leading producer of iron and steel with an annual value of $50 million and employment over 45,000. The city was third in glass and third in light general manufacturing with an annual value of $126 million and employment over 56,000. It was seventh in machine and foundry products. The city was still first in oil refining, and the Pittsburgh Oil Exchange set the price per barrel for the world. Westinghouse Air Brake was supplying the world air brakes, and Westinghouse's steam engines were used around the globe as well. Heinz initially was a promoter of Allegheny City, but would ultimately lead an effort to annex it to Pittsburgh.

Heinz saw other advantages of Allegheny City, which was the area's cultural district. Allegheny City offered parks, which the City of Pittsburgh lacked. Allegheny City was also upwind from the pollution of Pittsburgh and the Monongahela Valley, where Carnegie steel mills poured out smoke and coal dust. Allegheny also was the home of the area's wealthy and the German middle class. The working class consisted of ethnic Germans looking for upward mobility. It was considered an extremely clean section of Pittsburgh with parks and baseball fields. The cultural opportunities abounded as well. There was the famous Allegheny Observatory. A university was being planned about the same time as Heinz's plan for a factory. The area had one of Carnegie's first free libraries. Allegheny City clearly reflected the type of factory community that Heinz had observed in Germany.

Growth was everywhere in 1889, Westinghouse Air Brake had a huge growing complex in Allegheny City, Westinghouse Machine had Pittsburgh plants, and Westinghouse Electric was starting out. Carnegie had just started his famous Homestead Works. The roots of the embryonic Alcoa Aluminum were starting up. Mellon had started to establish his banking empire. The Republican-controlled city was a required stop for every candidate and president. Pittsburgh was also the railroad center of the nation. It would be Pittsburgh's railroads and rivers that made this heavy industry city the ideal home for Heinz's company.

Men like Harry Thaw, Benjamin Jones, James Laughlin, and Henry Buhl, the Pig Iron Aristocrats of Pittsburgh, lived in Allegheny City. In the 1850s, the original "Millionaire's Row" was Allegheny City's Ridge Avenue. No city in America had such wealth concentrated in one row of mansions. Allegheny City soon became the classy suburb of Pittsburgh

industrialists. Lincoln made a brief stop there prior to going to his hotel in Pittsburgh on his way to the White House. President Ulysses Grant and Rutherford Hayes also visited this aristocratic city of pig iron manufacturers. Heinz's decision to move to Allegheny City was greeted with a great welcome by city fathers, who helped improve streets and rail connections to aid Heinz. Heinz hoped to build an industrial utopia based on his German tours. Allegheny City was happy to see the Heinz move, as the new Pittsburgh Exposition Center had moved to the Pittsburgh side of the river.

Heinz was a director of the new Exposition Center, and in this case Pittsburgh had riverfront available. The beautiful new center was built on six acres known as the "Golden Triangle." The new Exposition Center would bring the world to Pittsburgh and Allegheny City. It opened on May 1889 with a series of concerts and events. Heinz and his family were involved throughout opening week. The main event was an opera, for which Heinz had a special box. Sallie's love of the opera had converted him to an opera lover. H. J. Heinz had now become one of the industrial princes of Pittsburgh. As the Exposition Center opened, Heinz was preparing the opening of his new Allegheny City factory.

Heinz's plan was to incorporate the many lessons he learned in German factories. This new plant was to be an industrial utopia of over 20 acres. His new Allegheny City factory would be a beautiful series of Romanesque brick buildings. It would be a palace of the best materials such as fully fired brick and oak framing. Heinz would personally supervise the building and would often join in tossing bricks upward to the masons. Most constructional brick at the time was not fully fired and used a low temperature glaze to reduce costs. The faces of Heinz's bricks were also glazed so they could be cleaned weekly. His brick factory shone in a city of blackened brick and limestone from the steel mill smoke and dust. Heinz believed that cleanliness was key to maintaining his image, particularly in the steel city of Pittsburgh. Floors were varnished hard maple to allow for daily cleaning.

Heinz designed a near perfect factory for his many products with all the latest technology available. The full complex would take until 1898 to complete and would be serviced by the Baltimore and Ohio Railroad and the Pittsburgh and Western Railroad. It would also have docks on the Allegheny River. The location was ideal as a national distribution center. The complex was to be centered around Heinz's existing vinegar plant. The complex was to be focused on Progress Street with plans to radiate out from there in future years. Initially the financing called for $50,000. The main brick building would be five stories high. The factory would be state-of-the-art in all forms, including electrical lighting, automatic

nailing machines, electric fans, and overhead electrical cranes. This would be the factory of the future, technologically superior to the steel mills of Andrew Carnegie down river. Heinz had labored since his trip to Germany to make this an industrial American palace. He would also add German practices such as freshly laundered uniforms and state-of-the-art restrooms. Medical care, dental care, and recreational activities would be available to all employees, and these would be reflected in the building with roof gardens, auditoriums, and a hospital.

The buildings represented the factory of the future, but appeared more like an industrial fortress. The style was the rich brick design of Georgian and Palladian architecture. Heinz personally inspected every load of brick before using. The outside Romanesque design highlighted the beauty of the brick. Heinz built it to be completely fireproof with steel beams and concrete fill between floors. The infrastructure was structural steel from Carnegie Steel. The "Time Office" where employees clocked in was modeled after Thomas Jefferson's design for the Library of Congress. This "Time Building" was one story, but was an architectural marvel built of imported Pompeian brick. Heinz supervised the laying of this special brick personally. The entrance portico was made of red Swedish granite that was cut and polished in Scotland. The interior had an Alhambra tile floor, Italian marble walls, and red mahogany woodwork. The ceiling consisted of eight specially designed strained windows with various Heinz sayings such as "Labor sweetens life; Idleness makes it a burden." Another was Heinz's favorite: "To do a common thing uncommonly well brings success." He commissioned artists to design stained glass windows and paint murals. The center window was a picture of the Sharpsburg home, considered his first factory. There was an iron-reinforced dome with inlaid gold. There were three entry points—the center for the visiting public, and the sides for the men and women. The entrance and plant would be one of the earliest to use full electric lighting and electric motors for machinery. The power plant was a cathedral of machinery with Alhambra tile floors, mahogany walls, and burnished brass decorations. The heating was by steam radiators. Westinghouse Air Brake was a neighbor plant to the Heinz plant, and during the plant building, Heinz would become Westinghouse's neighbor as well.

The new Heinz personnel office had mottos painted in the frieze of the office walls, such as "Work everyday as though you would live forever; live everyday as though you expected to die tomorrow." Heinz often used mottos as companies use vision and mission statements today, but unlike mission statements of today, his were short and punchy. Many of his mottos incorporated operating principles like "To secure the permanent satisfaction of consumers," "To make the business better before it

is made larger," and "To protect the consumer by owning the product all the way from the soil to the table." Heinz's short, to the point mottos were a powerful means to deliver the corporate philosophy to the employees. Heinz created a working environment that had never been seen in America and stood in stark contrast with Pittsburgh dark steel mills and foundries.

The plant's technology was ahead of the Carnegie steel mills that dominated Pittsburgh. The technology was perfectly blended with paternal factory practices. Lunchrooms and restrooms were spotlessly maintained. The restrooms included running water, something few employees had in their homes. There was daily availability to doctors and dentists for the workers. Heinz was one of the earliest to believe that dental care and general health were interrelated. Heinz was one of the first in the United States to use pre-employment physicals. He took his paternal approach far beyond what he had seen in Germany. Roof relaxation areas included music, plants, and refreshments. There was a type of center court for larger musical events and rallies. For many women, the Heinz factory was far superior to the homes they returned to in the evening. Heinz saw his Allegheny City factory as a new ideal in manufacturing.

The technology and application of scientific management was far ahead of later industrialists such as Henry Ford. Heinz's blend of human work with automation was revolutionary. The installed material handling systems predated the modern assembly line. Salting stations and rail connections were designed for efficiency and ease of handling. Heinz and Sebastian Mueller even had specially designed tank cars built to support overall materials flow in his new factory. His power station was the best in America at the time. Special cars were designed on the shipping end of his vinegar factory to move cider and vinegar efficiently. He set up mini-assembly lines for sealing, corking, and vegetable sizing. Conveyors and chutes were used to move material between floors. His continuous flow system and assembly techniques were twenty years ahead of the auto industry. Many early visitors to the factory were engineers from around the world. Heinz's contribution to factory design is too often overlooked, and credit must also go to Sebastian Mueller.

The new factory buildings were lighted by electricity from a state-of-the-art Westinghouse generator on site. The generator was a steam driven dynamo and was one of the biggest applications of the Westinghouse system. This was in a time when all homes and factories were lit by natural gas flames. The plant had an eclectic ventilation system, which again was one of the first in Pittsburgh. Parts of the plant had electric trolley and crane systems. In his three-story stable, he had electric brushes for his horses as well as electric feed systems. Electric buttons operated

the horse water troughs. Heinz had been experimenting with electrical devices for over three years in his old Pittsburgh stable. Electric lighting was used throughout. The stable in general was an early highlight of the complex. It was a four story "equine palace" of Romanesque design and had turrets and towers; it rivaled most churches in its beauty. All of the buildings were adorned with stained glass windows, often with slogans of H. J. Heinz and his mother. Heinz reinforced the corporate vision with murals reflecting that the "world is our field."

Heinz was also a pioneer in fireproofing, with good reason. Heinz's parents as new immigrants had witnessed the burning of Pittsburgh in 1845. This devastating two-day fire completely destroyed the city, including most of the bridges. The memory of this full leveling of the city was passed down to the next generation. Heinz, himself, had seen the result of ancillary fires from the Railroad Riots of 1877. Fire insurance had been come a major cost of doing business. Heinz's stables for so many horses were also a major investment, even more than the equipment. Heinz designed his factory to be totally fire resistant. One factory tower supplied water via fire hoses. Heinz used a cell approach also to block any fire from spreading. An electric fireproofing system closed iron doors and sounded alarms. Heinz's use of iron, concrete, and brick with preventive fire systems enabled him to carry no insurance on the building. The factory, in general, gave Heinz efficiencies and productivity advantages beyond his dreams.

The profits continued to pour in as the American economy experienced a boom at the end of the 1880s. The Republican tariffs continued to favor Heinz products over imports and generate cash, which Heinz poured back into the operation. Heinz spared no expense on his "equine palace" to house 110 horses. The Heinz horses lived far better than the steelworkers of Carnegie Steel. The stables consisted of four stories. The first floor held the wagons and horses moved by ramp to the stables on the second floor. The third floor held the feed and supplies. The fourth floor was used to air the horses, and also functioned as a floor garden. There were special footbaths for the horses as well as a horse hospital. Overhead trolleys and automated systems helped in all daily needs and material handling, which represented over 50 percent of the operating costs. Cleanliness was stressed in the whole operation; wagons were washed daily. It also allowed for the factory to be four stories high versus spreading out over expensive city real estate. The level of the design and automation would rival anything in the world prior to the building of Henry Ford's Highland Park assembly plant in 1907.

By its completion in 1898, no factory on earth could rival the Heinz's worker utopia. It was the largest factory of its kind in the world. There

were two roof gardens, one for men, one for women. Heinz provided musical entertainment for the lunch hours. All workers in the 1880s were on day-rate so the pay remained the same as they attended these lunchtime events. The women usually got a half-hour lunch, but that was expanded to an hour for major events. The men and women had separate lunchrooms. There were reading rooms and libraries. Heinz's approach stressed healthy employees. There was a gymnasium and a swimming pool. There was also a small hospital with full-time doctors. Finally, a large auditorium with massive stained glass windows was used for free lectures. Visitors entered a huge marble rotunda in the Administration Building that exceeded those of the most fashionable hotels of the time. The marble was imported. Heinz even created a special waiting area for tourists. The waiting room had easy chairs and samples.

The five-story auditorium was every bit amazing. It was believed to be the first auditorium in the country built for employees. When finished it had 2000 plus incandescent light bulbs, when many homes still used natural gas flames for lighting. It had a stereopticon slide projector for slide shows, a pipe organ, and a Steinway grand piano. It was said to have inspired fellow Pittsburgh industrialists and neighbors George Westinghouse and Andrew Carnegie to build their own. Nothing could, however, rival Heinz's design, which was topped with a stained glass dome. The words "The World our Field" was on the dome, and around the base of the dome were the eight virtues of the early Methodist church: Courage, Economy, Temperance, Perseverance, Patience, Prudence, and Tact. Heinz even hired a musical director for the 1500 seat auditorium. The auditorium was used for lunchtime talks, singles dances, and a wide variety of after work and family events. The huge five story bottling building with its garden roof was no less amazing. The administration building approached the decor of a palace. It also had special rooms for visitors. The high point of the season was the Christmas Party given by Santa Claus and Mr. Heinz.

The manning of the plant showed another side of Heinz. Heinz was every bit the father of his employees, but he could be stern with his dissenting sons and daughters. The new plant offered Heinz a chance to "to make a clean start and get a good grip on the business." The Pittsburgh operation was also in the midst of a crisis with several employees branching off to start their own business, and brother John Heinz conspiring with some employees to start an operation in Indiana. Biographer Robert Alberts framed it as a "small rebellion" and noted that "a certain amount of managerial ruthlessness is required if the enterprise is to survive." The problem seemed to be in the middle management ranks, which Heinz defined as "clerks, shippers, and heads from Pittsburgh." The rift seemed

to be caused by the moving out of such key men as John Heinz, J. Ulam, Joseph Hite, and others determined to open or join competing operations. Lack of loyalty was the one thing Heinz could not tolerate. It hurt him personally as well. The internal struggle moved H. J. to believe that a cleansing was necessary. Heinz did in fact clean house, taking the opportunity to remove under-performing employees instead of bringing them to his new factory. Heinz detailed much of the house cleaning, which clearly showed toughness. Heinz was determined only to move his best and most loyal employees to his new factory. One employee was removed for "lost of heart power," and another for being "impudent with girls." Heinz was also much harder on his male employees than women. Heinz demanded the Victorian view of women even in the workplace. Women had better working conditions, albeit with lower wages.

Heinz had struggled with an inability to delegate as well, but his desire to travel and other interests made it a necessity. His first corporate failure with the Noble brothers also haunted him. It was hard for him to fully trust his top managers, except for Sebastian Mueller and Fredrick Heinz. He expected of his family members the same energy and dedication that he gave, which he called "heart power," and he often proved to be an unrealistic taskmaster. Middle management and upper management would continue to be corporate weaknesses. While men like Andrew Carnegie inspired his management to new heights with profit sharing and stock incentives, Heinz inspired the workforce with his paternalism. To a large degree, Heinz underpaid his supervision, and the paternal benefits meant less to these supervisors, especially males. Heinz also wanted to lower employment costs with the move to the new factory. Heinz found his best and most loyal supervisors were the few women with that rank. Male supervisors often looked for higher paying opportunities in the booming Pittsburgh industries, but some returned to Heinz's paternal care after testing the waters. One prodigal son, Joseph Hite, returned and was paid $10 a month less. Heinz attributed this to the end of the "rebellion." Both Carnegie and Heinz were successful, but a merger of their approaches might have changed industrial history. Both men, however, were capitalists striving to make ever more money. Success only seemed to increase the drive to make more.

Heinz's booming company did not take from his duties with the Pittsburgh Exposition and his beloved Sunday school work. His wealth did, however, change things. Heinz was now part of Pittsburgh's elite. The sign of his new wealth became clear with his move of the family to Pittsburgh's millionaire suburb of Point Breeze on the east side of the city. He purchased the Hopkins Mansion on Penn Avenue, expanding it to fit the requirements of the Heinz family. Point Breeze and East Liberty

at the time had most of America's great capitalists, and had been founded by some of Pittsburgh's early German families.

In 1889, Heinz's East End neighborhood was the world's richest. In a short walk, one might run into Andrew Carnegie, George Westinghouse, Henry Clay Frick, or one of the Mellon family. Residents of the neighborhood controlled as much as 40 percent of America's financial assets. Mail was delivered seven times a day to keep America's greatest capitalists in touch with their factories, banks, and markets. It was the first to adopt the telephone with direct lines from the homes to Pittsburgh's biggest banks. The neighborhood had its own private station on the Pennsylvania Railroad. This wealthy burgh commanded visits from American presidents and future presidents such as William McKinley, Teddy Roosevelt, William Taft, Calvin Coolidge, and Herbert Hoover. Pittsburgh's East End was the home of U.S. senator Philander Knox. These eight blocks had enough major art pieces to rival any European museum. It was here that Westinghouse conceived of the AC power grid, and Heinz created his "57 varieties." The famous Hotel Schenley was corporate gathering place of some of the world's greatest industrials, politicians, bankers, art collectors, and philanthropists. Reporter Theodore Dreiser said of the East End: "Never in my life was the vast gap which divides the rich from the poor in America so vividly and forcefully brought home to me.... Never did the mere possession of wealth impress me so keenly.... Even the street lamps were of a better design than elsewhere." It was truly the center of opulent wealth of the Victorian era.

Besides the more famous mentioned, other millionaires abounded. There was Thomas Armstrong, the founder of Armstrong Cork, and sons. Andrew Carnegie's mother lived on the southern edge of the neighborhood. Carnegie partners and their sons, Francis Lovejoy, Henry Curry, George Lander (Carnegie's uncle), Alexander Peacock, and the Borntraeger brothers, William and Carl, lived there. Others included George Mesta, founder of Mesta Machine Company; Henry Hillard, president of Alcania; Kendall Thaw, railroad magnate; and Joseph Woodwell, hardware baron; Durbin Horne, president of Joseph Horne Department Store; Alexander Moore, newspaper baron (and ambassador to Spain); Arthur Braun, publisher and banker; and banker John Holmes.[1]

The new Heinz mansion was a four-story French Renaissance style house with thirty rooms. There could be no doubt that the pickle king was on a par with America's greatest industrialists. Carnegie produced tons, but Heinz's profit margins did not require volume on an industrial scale. The Heinz estate cost $50,000 (almost a million in today's dollars) and took up a full block. The renovations told even more of the booming business in pickles. Heinz hired the use of the first tree-moving machine to

move 32 trees to the barren lot that Heinz named "Greenlawn." Like his neighbor Henry Clay Frick, Heinz focused on the grounds as much as the house.

Heinz added a conservatory and stables, both of which he continued to expand over the years. The large estate allowed him to purchase Shetland ponies for all the kids. Heinz had numerous horses for riding and as well as for his carriages. He replaced the hardwood floors and added stained glass windows. He commissioned George Carpenter, who had worked on the Waldorf-Astoria Hotel in New York, to paint several murals throughout the house. He renovated the fourth floor to be a museum of his curios and watch collection. The space for his evolving collection of hand carved ivories and curios seemed to be part of his motivation to move to Point Breeze. Sallie continued to remain active in Sharpsburg charities and churches, and remained active in Grace Methodist. Expensive tapestries were purchased to cover the walls. The mansion included a stable and tennis court. Heinz was the envy of one of America's richest neighborhoods. He joined the East Liberty Presbyterian Church, a congregation of America's richest capitalists. Heinz seemed satisfied with his new management team at the factory, and his sales team continued the rapid increase in sales. Heinz now was even further from the factory at his Point Breeze mansion, but he seemed to trust Sebastian Mueller completely. That trust seemed reflected in Heinz's openness to enjoy the finer things of life. This improved comfort was something that Heinz had driven for. He was a man capable of large sacrifices to get his company moving, but he dreamed of a better life. In this respect, he was no different from other capitalists, but he did not do it through poor treatment of his employees.

The late 1880s saw a major expansion of the Heinz product line. Several of these products centered on relishes, mixtures of chopped vegetables or fruit in a pickling sauce. Relishes go back to the late 1700s, but they had gained popularity since the 1850s. Chow-chow was a relish that Heinz had been producing since the 1870s. In 1885, Heinz started to produce a celery relish. At the time, celery was an extremely popular vegetable believed to have many health benefits. Celery sauce had been one of Heinz's first products, so it was an easy expansion to other celery based products, such as pickled celery pieces and celery relish. Then, in 1886, Heinz started producing a pickle-based relish called "New Relish." This product was typically more American than other competing products in that it was based on sweet pickles. In 1888, Heinz started the production of a sour pickle relish known as "Piccalilli." Piccalilli was a mixture of green tomatoes, gherkin pickles, cabbage, cauliflower, onions, turmeric, mustard, vinegar, and spices, having a bright yellow color. Legend places its origin with Napoleon's chef.

Finally, at the end of the 1880s, Heinz started the production of India relish and chutney. These were closer to the true Indian dishes of Asia. Indian pickles were much different from those of America and Europe. Pickles in India could be very spicy and were often stored in oil. Pickle relishes in India contained a similar mix of American relishes with additional additives of sesame oil, lemon juice, ginger, and garlic. Chopped mangoes were also in most Indian relishes. Chutney is similar except with the addition of chili peppers and tomatoes. Chutney may be the oldest condiment, going back to the 1600s. Heinz introduced his "India Relish" in 1889 and his "Tomato Chutney" in 1890. His India relish was a secret recipe, but was close to that of true Indian relishes with additions of cinnamon and allspice. The basic Heinz ingredients were pickles, green tomatoes, cauliflower, white onions, red bullnose peppers, vinegar, celery, and mustard seed. He found great success in India relish and started a major advertising campaign. In England, he found a willing outlet in Fortnum and Mason. India relish, after pickles and vinegar, was one of his best selling condiments until the boom in ketchup during the late 1890s.

8

The Fair, More Expansion, New Products

HEINZ DID SEEM TO RELAX A BIT MORE in the early 1890s as the business profits were exceeding his dreams, and lieutenants such as Sebastian Mueller took on more operating responsibilities. Household incomes had increased dramatically from 1880 to 1892, creating a wave of consumerism and a demand for labor saving products. Heinz had positioned himself to reap the full benefits of the good economy and shift to consumer products. He was also building a network of national factories to support his sales network. Branding, quality, operating efficiencies, supply chain management, and packaging made Heinz competitive against the numerous regional and national producers. The McKinley tariffs made him competitive against international importers of larger sized barrel pickles. In 1890, all major American cities had several pickle and condiment producers, such as S. M. Dingee in Chicago and M. A. Gedney in Minneapolis, but Heinz was the leader. The Republican tariffs of the 1880s had birthed a large domestic pickle business. The pickle boom of the 1880s put more northern farmers into cucumbers, which had been considered a southern crop. It also took the extensive railroad system to bring the cucumbers fresh to manufacturing centers. Heinz's profits were pouring in faster than he could invest in the company. Through the late 1880s, imports maintained a significant portion of the pickle and ketchup market, but the McKinley Tariff Act of 1890 changed all that and propelled Heinz to the dominant position in the world: sales doubled in a single year.

While Heinz's international and domestic business continued to prosper, the country struggled with depression and worker unrest during the first half of the 1890s. Politically, there had been a "people's revolt," which brought the Democrats back into power with the promise of economic

improvement. In the 1892 presidential elections, Pittsburgh Republicans were split as many, like George Westinghouse, openly supported Grover Cleveland. Heinz remained loyal to the Republican Party candidate, but believed Cleveland a good man for the job. Grover Cleveland won the election, but progression towards the economic downturn continued. Money tightened, but this time Heinz had a strong conservative balance sheet. Heinz introduced dill pickles in 1892, utilizing the McKinley Tariff when all dill pickles were from Europe. Even though Grover Cleveland and the Democratic Congress reduced the tariffs, duties still remained protective enough for Heinz to crack the dill pickle market, the real growth market.

In the 1890s, the Heinz Company expansion continued with branch operations necessary to relieve the pressure on the main manufacturing complex in Pittsburgh. Heinz also had developed a manufacturing decentralization strategy. His earliest out-of-state operations were salting stations related to his cucumber fields at La Porte, Indiana (1880); Walkerton, Indiana (1882); Plymouth, Indiana (1890); Hicksville, New York (1892); Muscatine, Iowa (1893); Benton Harbor, Michigan (1893); Kewanna, Indiana (1894), Cutchogue, New York (1894); Holly, Michigan (1896); Saginaw, Michigan (1896); Grovertown, Indiana (1896); Holland, Michigan (1897); Monterey, Indiana (1897); and La Paz, Indiana (1897). Heinz had started these fields as part of vertically controlled operations, which assured they were committed to Heinz in supply and quality. Originally Fredrick Heinz managed field agency relations, and Heinz made it an executive level position because of its importance. Most of these field operations had experimental stations as well. Heinz's first factory outside of Pittsburgh was opened in Muscatine, Iowa, in 1892 to make sauerkraut, and in 1893, Muscatine added pickles (in 1898 it added ketchup and tomato products). Factories were added for pickle production at Holland, Monterey, and La Paz. Heinz added sauerkraut at Hicksville, Saginaw, Muscatine, and Aspinwall, Pennsylvania, in the 1890s. The Sharpsburg operation had remained in horseradish since the beginning.

On the sales end, Heinz had started additional agencies in some major cities, but during the 1890s he upgraded them to branch offices. Branch offices would have wagons, warehousing, and salesmen. At the end of the 1890s, he had branches at New York, Philadelphia, Chicago, Boston, Albany, Baltimore, St. Paul, Cincinnati, Indianapolis, Louisville, Kansas City, Chattanooga, Buffalo, St. Louis, Cleveland, Columbus, Jersey City, Denver, San Francisco, and London. In addition, Heinz had distribution agencies at Liverpool, England; Toronto, Canada; Montreal, Canada; Bluefields, Nicaragua; and Buenos Aires by the end of the decade. Heinz established main branches and distribution centers in Pittsburgh, Chicago,

and New York. By the mid-decade, annual production and raw material usage consisted of 500 million cucumbers, 600,000 barrels of apples, 100,000 bushels of beans, and 500 carloads of cabbage. Other annual supplies included 7 million bottles of various sizes, 20 million labels, and 300,000 oak barrels. Employment at the end of the 1890s included about 2000 full time (of which 275 were salesmen) and 18,000 part time during the summer and fall seasons. The election of William McKinley in 1896 saw the reapplication of the high tariffs of 1890, and Heinz's sales jumped 25 percent. Sales doubled during the first McKinley administration with a booming domestic economy. In 1900, H. J. Heinz was the largest food processor in the world.

As the recession grew in 1892, Heinz was focused on the 1893 World's Fair in Chicago (known as the Columbian Exposition). He had only a small stand at the Philadelphia Exposition of 1876, but he had been at all the major ones after that time, including Paris in 1889. He was preparing early for a major exhibit at Chicago along with his neighbor George Westinghouse. In Pittsburgh, the summer of 1892 would be one of labor turmoil in the steel mills. Carnegie's Homestead Works was starting to feel the downturn, and Carnegie saw it as an opportunity to adjust wages downward. Carnegie departed for Scotland in June, leaving Henry Clay Frick in charge of Homestead Works. The union was resisting any wage reduction, but Frick was determined to enforce his wage reductions. Homestead Works was a far different environment than Heinz's across town utopia. Mill workers often worked 12-hour days, seven days a week. Steel mill workers worked all day Saturday and Sunday, unlike Heinz workers, who worked a half day Saturday and had Sunday off. The average wage was $1.68 to $2.50 a day, but many made less than $1.40 a day.[1] The low end of the pay scale was problematic. A woman pickle packer on an incentive program at the Heinz factory could make $1.50 a day, although most women made under a $1 a day at the Heinz plant. At the time a bottle of ketchup cost 45 cents and a jar of pickles was 40 cents. Prices were rising that summer as a major heat wave hit Pittsburgh, putting the workers on edge.

Frick was determined to break the union and get his wage reduction. He moved to close the works and hired Pinkerton guards to protect it. The result was a bloody battle between the workers and guards that shook the nation. A few weeks later anarchist Alexander Berkman wounded Frick in an assassination attempt. Pittsburgh was torn with emotion, and many took to the streets. Late summer labor riots moved to the north side of Pittsburgh near the Heinz plant. Most of the north side problems were from gangs in the "tough" area that had been Carnegie's boyhood home. Heinz himself was torn. He opposed unions but felt workers should

be treated fairly. Heinz feared the rise of anarchists in unions. He was a bit more sympathetic to his neighbor Frick than the press, which initially sided with the mill workers, but found some sympathy when anarchists got involved. Heinz had been in the middle of anarchist riots in Pittsburgh and Europe.

The Heinz and Pittsburgh capitalists still remembered the anarchist International Meeting in Pittsburgh in 1883. The terrorist Johann Most brought these radical views to America in 1882. In 1883, Most called for a meeting of anarchists and radical socialists in Pittsburgh (known as the Black International). The result was the famous "Pittsburgh Manifesto," which made these points:

1. Destruction of the existing rule,
2. A cooperative organization of production,
3. Free exchange of equivalent products,
4. Organization of education on secular, scientific, and equal basis for both sexes,
5. Equal rights for all, and
6. Regulation of public affairs.[2]

Heinz had watched the socialists' parade on the Pittsburgh streets that year with disgust and anxiety. To a large degree, Heinz, Westinghouse, and Germany developed factory paternalism to counter the rise of the anarchists. The Railroad Strike of 1877 had caused the first "red scare" in America. Business and the press were convinced that communists were waging a war against capitalism, and German-Americans were often suspect. The assassination attempt of Frick by an anarchist struck fear in the Millionaire Rows of Point Breeze, Oakland, and Allegheny City. Heinz, however, would never experience a strike or labor unrest at his factories.

Heinz had just moved beside Frick in the spring of 1892, after extensive renovations. He had left for a European tour just prior to the breakout of violence at the Homestead works. This short trip took him to England, once again. This time he contracted with Thomas Irvine and Company of Liverpool to be agents for Heinz products. Thomas Irvine and Company had an extensive distribution network, and Heinz products were an immediate success. The volume was small but Heinz was establishing brand recognition on European shelves. The news of the strike reached him, and he became anxious for family and friends in Pittsburgh, remembering the Railroad Strike of 1877. He became even more convinced that capital and labor had to find mutual ground, but he had little sympathy for the union.

Heinz was part of a group of businessmen who traveled to Mexico in early 1893. The trip was sponsored by a New York publishing firm to

improve trade and investment with Mexico. In general, there was a push by the American government to expand trade with Mexico and South America. Heinz, however, saw no market in Mexico for his products. The tariff duty placed on his products shipped to Mexico was 200 to 400 percent. A bottle of ketchup, which sold for 25 cents in the United States, sold for 90 cents in Mexico. Heinz's report helped men like William McKinley look at more balanced trade policy, which would allow reciprocity between trading partners. Considering the average wage in Mexico was at least 50 percent lower, this made his ketchup and pickles a luxury of the rich. Heinz returned to Pittsburgh to put the final touches on his plan for the fall opening (a small initial one followed by a grand opening in late spring of 1894) of the Columbian Exposition at Chicago.

Heinz had been the dominant national exhibitor in regional fairs, since he first had a small exhibit in the Philadelphia World's Fair of 1876. He had even won several gold medals in the Paris Exposition of 1889. Heinz was now America's pickle king and the fair would be his chance to prove it. He had extended the company with the building complex, and the Panic of 1893 was making credit tight. Heinz, however, decided he would chance borrowing for this once in a lifetime opportunity. The Columbian Exposition was to celebrate the 400th anniversary of Columbus' discovery of America. The fair would need three times the power used for the whole city of Chicago. Almost 93,000 incandescent lights and 5000 powerful arc lights would light the "White City." Most of these bulbs were made at Westinghouse's glass plant a few blocks from the Heinz factory. The dominant symbol of the fair was to be fellow Pittsburgher George Ferris' invention the "Ferris Wheel." The fair would have over 28 million visitors. General admission was 50 cents for an adult and 25 cents for children. While Heinz did not introduce any new products, the fair would be remembered for the introduction of Cream of Wheat, Juicy Fruit Gum, Pabst Beer, Aunt Jemima Syrup, Shredded Wheat, and the hamburger. Heinz would introduce his famous pickle pin, which would become a marketing icon.

The Heinz exhibit at the fair would be one of the best remembered, along with that of Libbey Glass and Pabst Beer. The Heinz exhibit was on the second floor (requiring a climb of 44 stairs) of the Agricultural Building and had the most floor space of the food and beer manufacturers. Heinz had designed it out of polished hand-carved oak. The display included free samples and the Heinz pickle pin. He hired beautiful women from several countries to act as guides and hostesses. There was one problem. The Heinz exhibit was on the second floor, with the European firms such as Crosse and Blackwell and Lea and Perkins on the first floor. The enormous size of the fair and amount of walking made visitors reluc-

Heinz exhibit at the 1893 Columbian Exposition in Chicago (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 12).

tant to walk up the stairs of the large Agricultural Building. Heinz also had a ground floor small exhibit in the Horticultural Building, which he used to hand out coupons for a free pickle pin souvenir. Actually these were watch chain ornaments, which Heinz had first introduced in 1889 for early fairs, factory visits, and local events. Heinz noted that over one million of these pickle charms were given away. He also sent out boys to hand out coupons. Foreign food exhibitors claimed Heinz was using unfair practices, to little avail. The large crowds to Heinz's second floor exhibit required strengthening parts of the building. Still, the *New York Times* reported the building sagged around the Heinz display. The advertising success inspired others to use souvenirs as advertising.

The Columbian Exposition was a major success for H. J. Heinz Company. Heinz took the gold medal for his exhibit and received an additional eighteen awards for his products. Because of Heinz's efforts to bring visitors to the second floor of the Agricultural Building, all American exhibitors profited. His fellow American exhibitors gave Heinz a dinner and presented him an engraved silver loving cup. Heinz the marketer had

fully developed with the 1893 fair experience, and the success created a product boom that carried Heinz Company through the recession caused by the Panic of 1893.

The mid 1890s further changed the product mix and business strategy of the company. The Panic of 1893 continued to the end of the decade and household income was declining. National unemployment reached new heights by 1894, and with unemployment came social unrest. In 1894 some estimated the unemployment rate to be over 25 percent with three million out of work. The winter of 1893-1894 was particularly cold, leaving millions unable to heat their homes. The combination of unemployment and railroads gave rise to the wandering hobo movement. In Pittsburgh the orange night skies were not from the great iron furnaces, but the thousands of hobo campfires. The Pittsburgh steel mills slowed to production to levels reminiscent of the 1870s. The city was forced to provide $133,678 in relief. Pittsburgh industrialists headed by Andrew Carnegie added another $250,000 to the city relief fund. The city used the funds for work projects. The Pittsburgh Parks hired hundreds of men at $1 a day from the fund. Heinz continued his practice of feeding the poor wandering the streets. Sewage and garbage became a major problem, and with it typhoid fever. Heinz watched nervously as the nation's economic problems created an environment for socialists and anarchists. A man named Jacob Coxey of Massillon, Ohio, organized a march on Washington for more jobs, a minimum wage of $1.50, and an eight-hour day. When Coxey's army marched through Pittsburgh on its way to Washington in April of 1894, it had swelled to 300,000, and then dwindled to a mere 20,000 entering Washington.

At the time of Coxey's march, Heinz was in Europe once again. Heinz loved to travel and found tonic in his European trips, so in February of 1894, he left for a five-month tour of Europe, the Middle East, and Africa. Heinz noted he was exhausted by the fair and business campaigns and needed a rest at a German spa. Heinz also had become focused on expanding in Europe. He packed plenty of samples to be distributed, and coordinated potential sales stops with his London agency. Sallie had proved less of a traveler, and in 1894's difficult winter, she was struggling with rheumatism. Sallie decided not to make the trip. Heinz took two of his children, Clarence and Irene. Included also was Irene's friend and Sallie sister's child, Myra Boyd. It was a young crowd but one that Heinz outpaced in his enthusiasm and energy. This trip was much less the intense business trips of prior years and would be his most adventurous. They traveled on the luxury liner *Bismarck*. They spent a great deal of time in Egypt seeing the many sites. Heinz spent over a month in Egypt, where he developed a passion for Egyptology. Besides the pyramids and other

tourist sites, he contracted for a nineteen-day tour up the Nile. Egypt proved a paradise for a curio collector such as Heinz. He even purchased a mummy and shipped it home. He would return to Egypt several times and would head up Pittsburgh Egyptology Association. He found endless hours of note taking and observation in Jerusalem and Rome. Heinz was armed with his tape measure, but this trip he had a new Kodak camera. He loved to record exact measurements of famous buildings. His collecting was varied, including things like twenty pounds of lava from Mount Vesuvius, relics in the Holy Land, Italian paintings, and pieces of brick, small souvenirs, elephant tusks, and expensive Pate-Philippe watches. On the return ship, the *City of Paris*, he met and discussed much with Mark Twain.

Heinz returned to Pittsburgh in the late summer. Anxious to explore the status of his pickle empire while he was gone, he took a tour of his plants, farms, main branches, and salting stations. He noted that he visited "most of them twice, in order to get the grip I had lost." He had started to feel that the company growth was moving beyond his ability to manage it. It was only the loyalty and trustworthiness of Sebastian Mueller that allowed him to accept further loss of control through expansion. The country was also heading into an economic depression, which worried Heinz. Still, he pushed his company forward. Amazingly, Heinz Company grew during the 1892–1896 depression. Sales increased every year of the depression from $1,578,151 to $2,401,842. The reason for the success was Heinz's dominant position in high-end condiments and his timely move into low-end necessities such as canned baked beans, canned soups, and dill pickles. In addition, Heinz cut costs through automation. Building cash reserves allowed for factory expansion. The decade of the 1890s proved to be one of new product expansion and dominance in some of his older products.

He had expanded into dill pickles in 1892 aided by tariffs and innovations in size standardization and quality. By 1894, he had taken the market from the foreigners. To support the new demand he built his Hicksville, Long Island, factory to make pickles, sauerkraut, and vinegar. Hicksville was a conclave of German immigrants that had started pickle production on a small scale. The Hicksville Germans were well known in the United States and Germany. Hicksville offered a central location to the eastern immigrant German pickle market. The Hicksville Germans also had experience in growing cucumbers and producing dill pickles. He also expanded his recent Muscatine, Iowa, factory for pickle production. He finished these projects and plant expansions just as the economy took a steep downturn.

The real tragedy of 1894 would be the death of his wife Sallie. Sallie

had suffered from rheumatism for years and the bouts had become more common. Sallie was 51 years old, and she was being treated by electricity for the rheumatism (a popular treatment at the time). On November 18, 1894, Sallie came down with a cold as well as rheumatic pains. Heinz and the family assumed that it was another bout of rheumatism. The next day she was given one of her electrical treatments to no avail.

The problem was clearly more serious and Heinz arranged for a physician to be in the house around the clock. Common colds in those days could easily be complicated by the dust and smoke in the Pittsburgh air and by water and sewage problems. By November 20, things had gotten worse. H. J. noted a fever of 103 degrees in his diary, and Heinz believed it to be typhoid. Typhoid was the number one killer in the Pittsburgh area. Around the clock supervision by a physician was set up. Over the next seven days, Sallie developed pneumonia, then double pneumonia. H. J. hired another nurse and a doctor to consult. On Thanksgiving Day (November 29), it was clear the Sallie was near death. Weak but breathing comfortably, Sallie had each family member come to her bedside for final words. Clarence was in Europe when Sallie died that evening. H. J. Heinz was crushed, but his strong religious convictions carried him. Of the children Howard seemed the most impacted. H. J. poured his energies back into his work and charities. It would be a slow personal recovery that followed the economic conditions of the times.

From 1894 to 1895, Heinz slowed personally and corporately. He and the nation slipped into malaise. Part of his recovery was a shift in his personal schedule. In 1895, he announced that he was giving up day-to-day management and turning it over to Sebastian Mueller. It wasn't a smooth transition, but Mueller was a trusted friend. When in town, Heinz still loved to roam around the factory complex. Heinz also increased the role of his personal secretary to be plant liaison in his absence. The major change for H. J. Heinz was a dramatically increased role in Sunday school organizations, and travel related to these organizations. In 1895, he became a director of the Pennsylvania State Sabbath School Association and would travel every month to Philadelphia for a meeting. He became more involved in the International Sunday School Association. It was in his missionary zest for Sunday school that pulled him out of the mild depression following Sarah's death. Heinz expanded his civic duties as well. The death of Sarah had in that respect made Heinz a more balanced person. Heinz also became more interested in expanding his collections and European collecting trips. Mueller encouraged Heinz to travel to all sales branches to keep him out of the factory. Heinz also started to look to his sons as future heirs to the business. Still, Heinz remained fully the overseer of the company, setting expansion plans, making product decisions,

and holding on to all strategic decisions. Heinz did allow Mueller much autonomy in operations, while Heinz stayed with sales and marketing.

Mueller proved to be the right man for the times. Heinz Company bucked the downward sales trend of the Panic of 1893 (depression of 1893–96) by expanding the market and increasing market share. By 1895, even the middle and upper class were struggling with the downturn. Heinz adjusted by adding canned baked beans in 1895 and cream of tomato soup in 1897. Baked beans offered high protein at a very low price, and Heinz advertised to exploit that fact. Baked beans were an immediate success, which contributed to the bottom line. Baked beans became a staple of the Pittsburgh mill worker. Heinz and Mueller put in an automated canning line for his baked beans, pushing the price down from 15 cents a can to 10 cents. The beans were baked and put automatically in cans with tomato sauce. The tin can allowed the mill worker to take it to work and heat it quickly for lunch. Baked beans dramatically reduced the cost of packing a lunch and eliminated preparation time of the struggling housewife, who was often working to supplement the family income.

A few years later he used the line to produce canned macaroni in tomato sauce and canned spaghetti about the same time that the Franco-American brand introduced canned spaghetti. These products were aimed at the increasing numbers of Italian immigrants. Tomato soup found the same success and was followed with cream of pea and cream of celery. Heinz had now tapped the vast immigrant working class market. Mueller was brilliant in bringing on the production of these new products. Heinz actually increased volume throughout the recession of the 1890s. The profits continued, and in 1896 Heinz raised wages of the women workers an amazing 12 percent. Additional products of lesser success included evaporated horseradish, various olives, baked kidney beans, peanut butter, mayonnaise, and plum pudding. In 1896 the press first reported Heinz as a millionaire. Heinz also became more interested in the advertising possibilities of Atlantic City. This beach and boardwalk city would attract tens of thousands every summer from all over America.

Heinz was a little behind Campbell Preserve Company in the introduction of condensed soups, and Campbell looked to challenge Heinz overall. Campbell, with its German chemist John Dorrance, perfected the production of condensed products. Condensed soups eliminated packaging, storage, and handling cost. The cost of condensing brought a can of soup from 30 cents to ten cents. This made canned soups very attractive to immigrant factory worker families, particularly in the midst of a national recession. Campbell's introduced five condensed soups in 1895, and Heinz followed with two condensed soups a year later. Heinz actually was experimenting with condensed products as early as 1890, when

the company introduced evaporated horseradish. Campbell had tomato, vegetable, chicken, consommé, and oxtail condensed soups in 1895. Campbell, while major second tier ketchup manufacturer, made a strategic decision to focus on soups and had 21 flavors (Campbell used the word "kinds") by 1904. Heinz remained focused on diversity in his product mix. He produced the most popular flavors of soups, allowing Campbell to dominate the overall market. By 1904 Campbell was selling over 16 million cans of soup, while Heinz remained under a million. Campbell more than any other company was applying the Heinz marketing strategy. Campbell looked to diversify into new product lines, such as catsup, mustard, salad dressing, chili sauce, Tabasco ketchup, fruit preserves, and mincemeat. Campbell used one production line for both baked beans (Monday) and soups (the balance of week). Heinz had a whole building dedicated to baked bean production and soups, which could run seven days a week. Campbell became a national soup company by 1905, while Heinz was an international food processor. Campbell's weakness was it lacked national distribution until 1911, which allowed Heinz to strengthen his name strategy through the 1890s and early 1900s. Heinz combined a diverse but focused product mix with international marketing to command a large share in a number of product markets.

Still Heinz's overriding strategy remained an economy of scope coupled with cellular manufacture of similar products. The Heinz strategy of diversified products was unequalled. Heinz and Mueller worked just as hard to secure their smaller markets. Fruit preserves allowed workers to be fully utilized during the day. Heinz's biggest competition in fruit preserves was the home canner. To hold the market required maintaining a mix of exotic fruits as well as the highest quality and flavor in the basic favors such as strawberry. Mueller worked a unique processing system that consisted of double jacketed copper kettles with silver lining. The kettles used steam heating, allowing perfect temperature control. Steam heating avoided the type of burning and overcooking that was common with home canning. Heinz's strawberry preserves were a market favorite in 1896.

In 1896 Heinz moved in sales beyond the plateau of the 1892 to 1896 recession. Sales in 1893 were $1,890,911; in 1894 sales were $1,775,318; in 1895 sales were $1,934,158. In 1896 they jumped to $2,401,842. While most companies in 1896 lacked capital to invest, Heinz was flush with cash. Heinz invested in a Saginaw, Michigan, factory for the manufacture of tomato products, sauerkraut, and pickles. In 1897 Heinz opened a ketchup factory in Holland, Michigan, but poor tomato yields forced it to change to pickles and vinegar. In addition, Heinz added cucumber fields and salting stations in places like Wooster, Ohio. Vinegar production at Holland

was successful because of nearby apple orchards. In 1895 Heinz moved the London agency to a branch office with a warehouse. This small warehouse was at No. 1 Hayden Street near the wharf. He expanded the branch office in London in 1898. The new branch warehouse was a four-story building on Farringdon Road with a rail connection. The London branch had fifty employees, which consisted of twenty-two salesmen, two European "travelers," four women demonstrators, and an office and warehouse staff. In addition, farms and salting stations were added in Holland, Michigan. In 1897, sales increased to $2,719,016 with a big contribution from England. In 1897 the baked bean building was finished at the Pittsburgh complex. In 1898, British sales tripled.

Heinz also supported the successful campaign of President William McKinley in 1896. Records suggest that Heinz made small but numerous contributions to state Republican organizations across the country to support McKinley.[3] Heinz also supported huge Republican parades for McKinley in various cities. He avoided some of the headlines of fellow Pittsburghers Henry Clay Frick and Andrew Carnegie, who each gave $250,000 to the McKinley 1896 campaign against Democrat William Jennings Bryan. Heinz, like most capitalists, feared the rhetoric of Bryan against big business. McKinley also had been a backer of tariffs to protect steel, iron, pickles, ketchup and most domestic industries. Heinz found much common ground with McKinley, who was a strong supporter of American veterans. Heinz was also a generous supporter of veteran organizations in Pittsburgh. McKinley, in turn, had hoped that industrialists like Heinz and Westinghouse would be the models for the spread of paternal capitalism. These men saw paternal capitalism as the antidote to the rise of big business with its greed and corruption. Heinz also shared McKinley's vision of the international manufacturing leadership of America. On a personal level, Heinz could relate to McKinley's strong religious and family values, as well as his personal belief in temperance. For his part, McKinley looked to Heinz's globalization as a model for American business. McKinley won the election with strong support in Allegheny County, which he visited in November. The McKinley election would usher in a great economic expansion for the country and Heinz Company.

Heinz had launched his famous "Heinz 57 Varieties" in 1896, but in reality he had more than 57 varieties. By the end of the decade, still having more then 57 varieties, he defined the 57 as: Worcestershire sauce, tomato ketchup, tarragon vinegar, sweet mustard pickles, midget gherkins, stuffed olives, strawberry preserves, sour gherkins, pickled onions, sour mixed pickles, sour midget gherkins, salad dressing, ripe olives, red raspberry preserves, red pepper sauce, quince jelly, queen olives, pure olive

oil, malt vinegar, cider vinegar, sweet mixed pickles, sweet gherkins, prepared mustard, plum pudding, peanut butter, peach preserves, mincemeat, mayonnaise, manzanilla olives, India relish, green pepper sauce, grape jelly, fig pudding, evaporated horseradish, distilled white vinegar, dill pickles, plum preserves, currant jelly, cream of tomato soup, cream of pea soup, cream of celery soup, crab apple jelly, cooked macaroni, canned spaghetti, chow-chow pickles, chili sauce, cherry preserves, blackberry preserves, black raspberry preserves, beefsteak sauce, kidney beans, Boston baked beans with pork, baked beans in tomato sauce with and without pork, apple jelly, and apple butter. He also had some lower volume products and seasonal products such as cranberry sauce.

Heinz continued to expand his Greenlawn mansion in the late 1890s with a billiard room, conservatory, bowling alley, tennis court, additional greenhouses, an expanded library, and an expanded museum. Eventually, his mansion would have nine greenhouses. Heinz's sisters, Mary and Henrietta, lived there and acted as hostesses for Heinz. His sons also lived there when not in Europe. In 1897, Heinz added a St. Bernard dog known as "Homewood Don." His private museum on the fourth floor had caught the imagination of the local and national press in 1897, and was opened on a limited basis. Heinz had hired Professor Samuel Harper, a local scientist, to maintain and catalog the museum. The collections included the pre–Indian mound people of the Pittsburgh area, a collection of footwear from around the world, carved ivories, oriental rugs, a complete armor collection, art pieces, and endless curios. Heinz loved to collect, and his passion took him in many different directions. Heinz often took his salesmen through the museum as well as hundreds of social guests and local school children. Heinz clearly accelerated his collecting after the death of Sallie. His world trips became more extended, as constant movement seemed to help. Heinz proved to have very few equals in travel.

On a personal level, 1896 was another important year with Howard going to Yale. The summer prior to going to Yale, Howard impressed Sebastian Mueller with his hard work in the Ohio vegetable farms. Mueller, in turn, would become a loyal mentor to his future boss. Howard was just as comfortable at Yale. He loved football games and became a passionate fan. He wrote his father often about his inability to live on the budget set for him. He was able to convince his father to increase his budget for books. Howard got involved with local boys' clubs and got his father to help out there. Howard exhibited common sense and balance, but fully experienced his college years. He returned for summer and got a dose of humility working low-level jobs. While his degree was to be in chemistry, he picked up a lot of basic business as well. Like his father he showed an interest in advertising.

Heinz's greatest advertising effort came in 1898 when he purchased the Iron Pier in Atlantic City. Atlantic City was one of America's favorite vacation spots, especially for residents of Western Pennsylvania. The cost of the pier was $60,000 (about $1.2 million today), a considerable amount for the time. No company had ever considered such an advertising investment on this scale. Heinz had observed that crowds flowed to this East Coast tourist city at the same rate they had to world fairs. Heinz had always found high paybacks from world and regional fairs and Atlantic City offered a similar opportunity. Tens of thousands of Pittsburghers and Ohioans alone flocked every summer by train to Atlantic City. It offered the ideal spot for a permanent exhibition. The pier, which would become known as the Heinz Ocean Pier, extended 900 feet into the ocean. Heinz's renovations were ostentatious, as was his style. The pier was adorned with giant pickles and eventually large electric signs. There were cases of over a hundred awards from world and regional expositions. The pier was a tourist attraction in its own right; no one could go to Atlantic City without visiting the Heinz Pier. His *Custer's Last Rally* painting took center stage in an exhibit of over 150 paintings. The pier also functioned as a personal museum for H. J.'s many curios, including the mummy he had purchased on his trip to Egypt, a Buddhist shrine, ship models, carved ivories, and a chair of General Grant. There were endless marble busts and bronze statures. It was reminiscent of the Columbian Exposition. In addition there were daily musical events.

The advertising portion of the pier was just as ostentatious. It had a glass pavilion, which resulted in the pier often being called the "Crystal Palace by the Sea." The pavilion was a huge display area. Tourists could get their fill of samples, pick up the famous pickle pin, and get discounts on Heinz products. Women packing pickle jars demonstrated factory methods. Stereopticon slide shows highlighted the unique working conditions at the Pittsburgh plant. Demonstrations showed the use of Heinz's products in various recipes. Recipe cards were handed out, and chefs often demonstrated the use of the recipes. The tourist could relax in hundreds of sun chairs. Free newspapers, rocking chairs, and restrooms made the pier popular. Tourists were offered free postcards to send home. Samples of all "57" varieties were available to taste at every turn. Products were available for sale, but sales were low key and by order. A tourist could buy a case of pickles at wholesale to send home. The advertising was not sales oriented (although that was possible) but brand-recognition oriented. No company ever envisioned such an entertainment center. In this respect, Heinz augured corporate entertainment parks such as Hershey Park. In the summer, there were 15,000 visitors daily, and in the winter, the sun parlor had 4,000 visitors daily. This numbers were close to his visitor rate

Pickle bottling department, about 1895 (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 16).

at the 1893 Columbian Exposition. The first year of operating the pier, the Heinz Company had a 30 percent increase in sales. H. J. Heinz visited often in the summer as well.

The Heinz Pier was more than just a product advertisement; it promoted the Heinz Company culture. Heinz was every bit as proud of his industrial organization and industrial relations, which had also won gold

medals. One of Heinz's Sociological Department's duties was to provide a picture show of the Heinz factory and its working environment. Workers were often present to answer questions. Women employees were also there in their spotless dresses. The quality work of bottling pickles was demonstrated as visitors heard employees sing the praises of Heinz Company. Heinz's working principles were discussed in frequent lectures in the theater. Heinz realized that one of the limiting growth factors was the resistance of the public to processed food. For the Victorian era consumer, processed food could seem strange and even dangerous. Factory produced food seemed foreign to a world of home cooked meals. The Heinz kitchen and its cleanliness calmed consumer concerns. It was a strategy that would be duplicated by McDonalds in the 1960s.

In 1897 Heinz started the corporate newspaper known as *Pickles*. *Pickles* informed employees of customers, salesmen, suppliers, and products. It also highlighted employees for their contributions. All branches, factories, and departments had articles. Traveling salesmen added reports from exotic places. Heinz continued to create a corporate culture in his own image. Heinz demanded an allegiance to this corporate culture, and he pruned the organization to fit it. The organization that Heinz carefully built in the 1890s would drive it for another fifty years.

Sebastian Mueller started to build a strong operating organization of his own. H. J. allowed Mueller freedom because he trusted him, and Mueller made frequent reports to H. J. Heinz. With Heinz's traveling and many civic commitments, Mueller had a great deal of personal freedom to design and build his own structure. Women supervisors proved to be an important part of that operating structure. Mueller developed the position of general forewomen to aid in personnel issues. Agnes McClure Dunn initially filled that position. Dunn had been one of Heinz's earliest employees and also had Heinz's total trust. She in many ways defined her own position of general foreman in the 1890s. Dunn was really a personnel or human relations department, and advisor to Mueller. She could promote a girl who stood out in enthusiasm and commitment. She often handled employee problems, disciplining employees when necessary. She had a large office near the women's dressing room and was available to address personal problems as well. Dunn, in this respect, functioned as an employee advocate and ombudswoman. Mueller relied on Dunn to handle employee functions and parties as well. At company social events such as dances, Mueller and Dunn were chaperones. As Dunn grew older, she was picked up every morning by a company car and brought to work. In her seventies, she remained the matriarch of the Pittsburgh factory. Dunn was central to the development of the Heinz corporate culture. She passed on the traditions and "Heinz way" to the new girls. This cultural

role should not be underestimated; it was the very strength of the Heinz organization. When she died in 1924 the plant closed for a day to honor her.

One of Mueller's greatest contributions was establishing the new Baked Beans Building and Department in 1897. The Baked Beans Building and Department was a large brick fortress that really was a cellular manufacturing operation, making a number of canned products, including baked beans, soups, canned sauerkraut, and mincemeat. The Baked Beans Department was honed into Heinz's most efficient unit. Mueller moved from hand-filling to automated filling and continuous production. Mueller brought in and tested a wide variety of automated machines to sort beans, bake them, and fill cans. In the first three years of operations, the Baked Beans Department produced over 16 million cans. Mueller applied cost accounting techniques to perform industrial processing experiments. He was far ahead of most of industry in the use of cost accounting to evaluate processes and equipment. Mueller adapted automated machines for most tasks, including bean washing, sorting, and canning. He instituted quality control techniques to check and test for spoilage and shelf life. Mueller also hired a female foreman, Mrs. Eggers, to run these experiments. Mrs. Eggers kept records of her many experiments that would evolve into many new products and improvements.

Heinz remained determined to expand in Europe and particularly in England. He traveled to Europe almost every summer from his first trip in 1886. Heinz often talked about the London Office as his pet project, even in the face of slow sales. Heinz established his first annual European Sales meeting in 1899 with Vice-President of Sales R. G. Evans. Howard Heinz and Clarence Heinz were also fond of Europe. In 1899 Heinz's oldest son, Clarence, was in school in Munich and was working for the London branch office with Heinz's brother Peter, who was part owner. During 1899, the London agency sent weekly reports of Peter's drinking problem. Heinz ordered the London agency to only allow Peter in the warehouse on Saturday after 5 P.M. Peter's drinking was a problem with the employees and the city police. Worse yet, Peter had teamed up with young Clarence in complaining about the Heinz operation and their personal exiles to Europe. Clarence was also limited in time at the factory. Finally, Peter was fully removed from his association with the agency. Heinz hoped that this might improve Clarence's disposition. H. J. Heinz had already decided Clarence did not have the aptitude for business. His middle son Howard did show potential. Howard excelled in high school at Shadyside Academy, which was the school of many second-generation founders of Pittsburgh industry. Howard had gone to

Yale to study chemistry in 1896 and took a bicycle tour of Europe in his senior year. Howard at excelled at all assignments at the company and was now mentored by Mueller. In 1900 Howard and his father visited the Paris Exposition. Howard decided to enter the company.

Howard had already proved himself as a boy working part-time at the company. He was a bit of an adventurer with a real love for fast automobiles. He brought a fast, bright red Panhard-Levassor back from Paris. This auto would be one of a handful on the Pittsburgh streets, but would be best known as the "Red Devil." He drove the car daily from the Greenlawn mansion to the north side factory, often at high speeds. It was the most advanced car in America, having aluminum parts and pneumatic tires. Howard, however, had exhibited strong managerial skills throughout his youth. His Yale education gave him business ties with some of America's most powerful families. While a bit of a rebel, Howard conformed to his father's rules and practices. His first assignment was heading up the early shift in the pickling department under the tutorage of Mueller. Yale and his father had made him a staunch Republican, and one of his first executive projects was a political parade. In 1900, Howard headed up the McKinley-Roosevelt grand parade in Pittsburgh, and Howard was one of McKinley's strongest supporters. When McKinley died from an assassin's bullet in Buffalo, Howard drove to Buffalo to view the dead president.

In 1899, H. J.'s daughter Irene was married to John La Porte Given at Greenlawn. John was a Cornell graduate and a editor for the New York *Evening Sun*. H. J. was extremely happy to see Irene marry at twenty-three, and the couple would give H. J. his first grandchild, Sarah Isabelle, in 1904. While the couple lived in New York, Irene often made long visits by to Pittsburgh. Greenlawn was the family center, and H. J. loved the company of family members. Heinz's sisters Mary and Hettie were the "housekeepers" of Greenlawn. They functioned as Henry's hostesses during business parties. H. J. Heinz was one of the founders of the Schenley Riding Club, and participated in races at their track on Brunots Island. In 1899 Heinz was introduced to a new game: golf. In 1899 Pittsburgh's first golf course was built in Heinz's Homewood neighborhood. Belmar Golf course was a six-hole course, and Heinz preferred a short round of six holes most of his life. By all accounts Heinz was not a good golfer, and many complained of his slow play. He enjoyed talking more than golfing. Heinz also joined the Pittsburgh Golf Association and got Howard interested in the game as well. Heinz also became interested in automobiles as the first races were held in nearby Schenley Park. Howard Heinz became an attendee and racer at Schenley Park.

Heinz didn't forget his old friends in Sharpsburg. He started a num-

ber of charities there, such as a boarding house for homeless children. He extended the YMCA of Sharpsburg as well. Before Sarah's death she had remained active in Sharpsburg Grace Methodist Church, and Henry continued to help the church financially. Heinz visited the church and school often. While he belonged to East Liberty Presbyterian, his heart and creed were always with Grace Methodist. It was not unusual for H. J. to make a Sunday visit there.

9

H. J. Heinz's Golden Years

AT THE TURN OF THE CENTURY, food processing was big business, accounting for 20 percent of the nation's manufacturing. One historian described the turn of the century diet: "It was a world of crusty bread, stewed meats, potatoes, onions, and cabbage accompanied by large quantities of pickles and other stimulating condiments."[1] This was the ideal diet for the Heinz Company to prosper with. Heinz Company entered the new century as the nation's largest food processor and a truly international company. It was the major pickle, ketchup, and baked bean producer. Heinz was number one in America in pickle production and probably the world's largest pickle producer. Heinz was launching new outlets and sales agencies in South Africa, Philippines, and South America. Heinz had 18,000 acres of its own seed and many more contracted growing fields in production. The Pittsburgh home complex in Allegheny City consisted of seventeen buildings with stables, taking up over ten acres. In Pittsburgh, there were stables for 150 teams of Percherons. The complex produced its own power, barrels, cans, labels, and boxes. Glass bottles were made a few miles up river at Sharpsburg. In all, Heinz had over 200 products. The first building project of the new century was the west wing of the stables, which truly made it an "equine palace." The "palace" had electric ventilation and elevators. Other innovations included a horse hospital, a glass enclosed Turkish bath, and a jail for horses that kicked. Heinz started the century with two gold medals at the Paris World Fair, one for quality of product and one for employee programs.

Heinz's usage of raw materials by the turn of the century was just as impressive. Annually Heinz was using the product of 18,000 acres (7,000 were for cucumbers). Average crop yields were about 100 bushels per acre, and Heinz was paying about forty cents a bushel at the turn of the century. The company used 10,000,000 glass bottles, 5,000,000 tin cans,

350,000 oak barrels, and 400,000 wooden boxes every year. As for raw materials, Heinz used 200 railroad cars of salt, 11,000 barrels of sugar, 100,000 bushels of beans, 600,000 barrels of beans, 500 railroad cars of cabbage, and 13,000 hogs (for baked beans). It was considered the largest pickle manufacturer in the world. Heinz Company had over 2,500 full time employees with an additional 20,000 during the harvest and over 300 salesmen. Heinz proudly advertised it could produce 15 tons of mincemeat a day and when in season put up 30,000 quarts of strawberries a day. Heinz had one of the first fully automated assembly lines. Heinz Company was also known for innovation with hundreds of patents for machinery, bottles, and process techniques. At the start of the century, Heinz produced in his own plant 10,000 glass bottles, 300,000 boxes, and 350,000 barrels a year.

The early 1900s were the golden years as the Heinz brand became world known, leading the nation in pickle production, and by decade end, Heinz would lead in baked beans, ketchup, soup, and mustard production. From 1896 to 1907, sales went from $2,300,000 to $6,864,000. Factors for this exponential growth included new products aimed at the great wave of immigrant laborers and a mushrooming market for packaged food. At the turn of the century, 40 percent of Americans lived in cities and spent 50 percent of their income on food.[2] Chain grocery stores were opening at a rate of nearly one per two weeks during the period. New national chains appeared such as Kroger (1880), A&P (1859), Grand Union (1870s), and Jewel Tea (1890s). A&P had 100 stores in 1900 and 300 by 1907. Heinz had positioned his company for this consumer boom and direct grocery sales. Decades of brand advertising were now paying huge dividends, and Heinz, as number one in pickles, baked beans, and ketchup sales in 1907, was a key supplier to these emerging chains. Heinz's powerful brand strategy had also effectively blocked these giant chains from competing against him with their own labels. The bigger problem was that sales were far beyond his manufacturing capacity, requiring a new phase of manufacturing expansion. While still a small percent of total, European sales were booming as well. H. J. Heinz was one of America's multi-millionaires and as famous as Carnegie and Rockefeller.

Pittsburgh had changed much by 1900 as well. It was the eighth largest U.S. city, and by the end of the decade it would be the nation's fifth largest, thanks to the annexation of Allegheny City. Pittsburgh was the world leader in the manufacture of steel, iron products, aluminum, glass, electrical equipment, railroad equipment, and pickles. Pittsburgh was the nation's second largest banking center and third in ketchup production. Carnegie's Edgar Thomson Works was the world's largest factory, and in 1901 United States Steel was the largest corporation in the

world. The city's return to coal had once again darkened its daytime skies. Pittsburgh had some of the nation's biggest slums along with the nation's highest number of millionaires. Heinz's Homewood neighborhood was the richest in the world. Pittsburgh led the nation in cases of typhoid fever but had some of the nation's best hospitals. It had one of the nation's best professional baseball teams in the Pittsburgh Pirates, and more reconstructed dinosaur bones than anywhere in the world. A city of bridges, Pittsburgh also had one of the best electrical streetcar systems. It was the nation's largest inland port. Presidents and vice-presidents were common visitors to the city, and politically it was a fortress for the Republican Party. A Republican machine controlled city politics, but Heinz would lead a progressive wing in city reforms. The food processing industry made up a third of the value of all finished commodities in 1900. The fastest growing company in Pittsburgh was not Carnegie Steel or United States Steel but H. J. Heinz Company.

By the end of the 1890s, Heinz was worried about the inability of his organization to expand any further. He was even considering putting a sales cap on growth. He didn't feel the company could manage such growth. It would take years for Heinz to realize that he was the real problem. Like most great founders, Heinz Company had expanded beyond his personal control. It is a point where many companies are sold, disappear, and fail. Heinz instead relied on the leadership of Sebastian Mueller and Fredrick Heinz. He found a brilliant manager in C. E. Helen to head his manufacturing and sales expansion in Europe. With the entrance of his son Howard into the company, H. J. had four managers he absolutely trusted. Furthermore, Heinz had established a deeply ingrained culture that reflected his management and beliefs. Through constant testing and pruning, Heinz had also developed a standardized group of branch managers and salesmen. The transition, however, would be a personally challenging for the founder. Heinz freed himself to chase new interests and build core values in the organization. He never remarried but was involved in many social and philanthropic interests.

Heinz had another exceptional helper in E. D. McCafferty, his personal secretary and legal aid. McCafferty became Heinz's first biographer and served as a company officer into the 1930s. McCafferty was critical in his informal role of office manager and company liaison. McCafferty coordinated efforts between Heinz and his key managers such as Mueller. Often managers would get approval for major decisions from McCafferty while awaiting H. J. Heinz to telegram or return from Europe. Just as important, McCafferty became the biggest promoter of the corporate culture. In later years, McCafferty was a major speaker at the annual sales convention on the "Heinz way." Like many personal secretaries of the time,

Recreation room ca. 1903 (Imaging Department © President and Fellows of Harvard College. Harvard Art Museum, Fogg Art Museum, on deposit from the Carpenter Center for the Visual Arts, Social Museum Collection, 3.2002.487).

McCafferty helped promote the legends and myths. Throughout the early 1900s, McCafferty earned the respect of the other managers, making the transition of control from Heinz to others such as his son Howard very smooth.

Once Heinz decided to expand in the early 1900s, labor recruiting became critical. Pittsburgh was the nation's boomtown and even women workers were in high demand. Pittsburgh did have a large pool of immigrant wives and daughters of mill workers, but to tap this resource required special programs. Immigrant women were brought in on jobs such as onion peeling, washing bottles, cleaning strawberries, skinning tomatoes, and cleaning potatoes. Heinz set up programs to teach them English as well as practical homemaking skills. Heinz Company and Westinghouse Company became important portals of immigrants into American society. Many started in the heavy seasonal times and were closely watched for possible longer-term employment. Agnes Dunn, the general foreman, helped these immigrant girls move into American society as well. Lunchtime and evening lectures were planned to help them learn American culture. Dunn also cared for the physical issues of her girls, sending them frequently to

Demonstration room, ca. 1903 (Imaging Department © President and Fellows of Harvard College. Harvard Art Museum, Fogg Art Museum, on deposit from the Carpenter Center for the Visual Arts, Social Museum Collection, 3.2002.367).

the company hospital for help and check-ups. Girls who showed office potential were encouraged to attend Duff's College. The company might even help pay for it, but more likely the company assured an office position upon competition of the business program. Agnes Dunn was Sebastian Mueller's right hand woman, and if she saw potential, Mueller could make things happen.

From 1900 to 1920, the good incentive jobs at the Pittsburgh plant transitioned from Germans to Irish to Slavs and Polish to Italians. As the girls learned English and were tested in various part-time positions, the foreman made suggestions to Dunn. The girl could then advance to a permanent position of higher pay, but still it consisted of physical work. A strict program of cross training was required. Typical assignments might be adding a piece of pork on the baked bean line or stuffing olives. The girls would be mentored and consulted at this point. Based on enthusiasm, a girl might be moved to the dining hall, office, or demonstrations. If the girl stayed in the factory, she would be considered for the incentive pay

based pickling department. The pickling department paid well but required a number of skills. These pickle jars were built to have artistic beauty. Sebastian Mueller and Agnes Dunn would make these decisions personally to assure the best workers in the incentive programs.

In 1900, Howard Heinz graduated from Yale with a degree in chemistry. As a boy, Howard had shown the most promise to lead the family business. Howard as a teenager proved to be a hard worker even when assigned the most mundane jobs. In 1896 at his first on-his-own job, a young Howard put in long hours at the Wooster, Ohio, salting station, but also found time to write his father about potential operating improvements. He had earned the respect of Heinz managers as well, particularly Sebastian Mueller. Clarence, the oldest brother, had shown artistic flair and was briefly tried as advertising director in 1902. Clarence had struggled with various sicknesses from his youth and lacked the stamina and mental toughness of Howard. Henry's favoritism of Howard had become clear by the late 1890s, and had caused some bitterness in the family. Clarence felt slighted by his father's favoritism toward Howard. Clarence would remain close to H. J.'s brother Peter throughout their lives.

Howard developed and honed his social and business skills at Yale but would always profess and remain loyal to the simple management principles of his father. Yale did give him an additional advantage in the development of solid administrative skills. Howard's love of boys' clubs and work with the poor also endeared him to the founder. Howard's balance was indeed impressive. Howard would be one of a rare breed of second generation executives that seemed perfect to lead a family company. After graduation, Howard took a trip to Europe and returned in the fall to start at the company.

The first business of 1900 for H. J. Heinz was the re-election of William McKinley. Heinz was the grand marshal of what would be Pittsburgh's largest Republican parade. Howard Heinz built a wooden steam locomotive with wheels to pull a train through the streets of Pittsburgh. Howard added horse drawn floats and handed out 40,000 packages that included pickle charms and postcards. The McKinley-Roosevelt ticket carried the area with a majority approaching that given to Abe Lincoln in the Pittsburgh area.

Howard Heinz started immediately in philanthropic efforts of his own. In 1901, Howard started Covode House for boys near the Heinz factory. The name Covode was from the family of Sharpsburg banker Jacob Covode, who was one of a handful who stood with Heinz in the downfall of his first company. A three-story tenement would house the operation, and a professional Dr. L. B. Wright, was brought in from New York. The Covode House functioned as a YMCA with activities both mental and

Women's dining room, ca. 1903 (Imaging Department © President and Fellows of Harvard College. Harvard Art Museum, Fogg Art Museum, on deposit from the Carpenter Center for the Visual Arts, Social Museum Collection, 3.2002.371).

physical to shape young men. In 1903, the house was opened to young girls as well. Eventually in 1914, H. J. Heinz built a new facility that became the Sarah Heinz House. This, however, had always been Howard's project, and it was one he excelled at. Projects like the Covode House and Republican campaign demonstrated Howard's administrative skills early on.

At the turn of the century, Heinz had factories in Pittsburgh; Saginaw, Michigan; Holland, Michigan; Muscatine, Iowa; Hicksville, New York; La Porte, Indiana; and Medina, Ohio. In addition, he had 17 salting stations. By 1905 Heinz added factories in Grand Rapids, Michigan; Medina, New York; and a ketchup factory in Norfolk, Virginia. Permanent employment was over 2,000 with over 300 traveling salesmen. Heinz had twenty branch offices in cities such as New York, Philadelphia, Chicago, Boston, Albany, Baltimore, St. Paul, Cincinnati, Indianapolis, Kansas City, Chattanooga, Nashville, Buffalo, St. Louis, Cleveland, Columbus, Jersey City, Denver, San Francisco, and London. The company had about 300 railroad freight cars. Heinz had agencies in Africa, Mexico, Manila, and South America. By 1905 Heinz had warehouses in Liverpool, Bristol,

New Castle, and Glasgow. That year he started an olive oil factory in Spain. In 1909, Heinz opened an integrated manufacturing plant in Canada. By the end of the decade, Heinz had agencies in the Philippines, China, Japan, South Africa, and Hawaii. London would move from an agency to branch and then a manufacturing center by 1910.

The Spanish-American War brought Americans to the Philippines and China. In addition America annexed Hawaii in 1898. The McKinley Administration tried to interest American investments in the South Pacific to support economic growth. Heinz was clearly a supporter of William McKinley's economic manifest destiny. Heinz sent one of his traveling salesmen to lay the foundation for his expansion in China, the Far East, Africa, and Australia. Alexander MacWillie traveled to some of the world's most exotic places between 1902 and 1904. His travels were logged in the employee publication *Pickles*. Heinz was being overwhelmed by the hours needed to manage his booming company, and lived vicariously through the travels of MacWillie. In 1902, Heinz himself would visit Asia to study business possibilities. MacWillie had limited success in Asia, but found solid markets in Australia, New Zealand, and South Africa. MacWillie studied prices, eating habits, and the competition. In areas where the British lived, he found a market for baked beans, India relish and tomato soup. MacWillie also found pickle pins and postcards to be very popular. In Australia MacWillie employed 22-year-old Margaret McLeod to demonstrate the products with an amazing success. Heinz found competition with other products such as New York's Curtice Brothers and their Blue Label ketchup. Green Label Ketchup of New Jersey and Crosse and Blackwell of England also competed for a wide range of products.[3] In South Africa, MacWillie found Blue Label and Green Label ketchups in control of the market. Heinz saw potential in South Africa and established a sales representative in South Africa in 1904. Stanley Monteith was given a direct order from Heinz to visit every grocer in South Africa.

Heinz made an informal trip to the Orient in 1902 that inspired him in several areas. He had been part of the progressive wing of the Republican Party, which supported the expansion of American business into Asia. MacWillie felt the development of a market in China and Japan would be far in the future. The American administration saw China as the key to the Orient. Heinz saw things very differently: Japan was the key to the Orient in both business and the acceptance of Sunday school. Heinz's products tended to be for Western tastes, and the Asian tastes would require development time. It was probably not business, but the possibility of expanding Sunday school missions, that aroused a passion in him for Japan and China. Heinz took on the missionary goal of Asia and financially supported the efforts of the World Sunday School Association to

establish a director there. Heinz personally financed that director for three years. While his business efforts slowed in Japan, Sunday schools started to prosper. The success started Heinz planning a grand tour of the Orient to spread Sunday school, which he would take in 1913.

The turn of the century also brought a change in American tastes. Ketchup had become the "king of sauces" in the 1890s. The rise of ketchup to a volume product was the result of many factors. Tomato based products had become popular and tomato production had increased. Domestic ketchup had found strong tariff supports in the 1890s. American consumers started to favor thicker and sweeter ketchup. Recipes started to add pumpkin, apple pulp, and starch to thicken it. The thickeners actually helped to reduce price. Heinz used apple pulp because it added sweetness and thickness. The thicker 35 percent plus pulp ketchups replaced the earlier thin ketchups of 5 percent pulp. Heinz top of the line Keystone brand had 25 percent apple pulp and its lower Duquesne line used 50 percent apple pulp.[4] Heinz also paid the highest price for the quality tomatoes which demanded $10 a ton. Heinz's processing was the freshest by design. Volume, productivity improvements, lower packaging costs, and recipes lowered the price of a bottle of ketchup in the 1890s from a range of $1.25 to $1.50 to a range of 25 cents to 10 cents in 1904. Ketchup now could be seen on all American tables. Heinz still had twice the sugar and vinegar of his competitors. Heinz ketchup sold at the 25-cent top end of the market. Heinz's ketchup margin was only around 15 percent compared to 35 percent plus of his competitors. Volume was then an important element in marketing his ketchup. Heinz entered the new century with pickles, baked beans, and ketchup as the volume leaders. The national market in 1900 was about 3 million bottles of ketchup with over 300 manufacturers. Heinz was the largest producer in 1900. Ketchup sales meant high profits for tomato farmers, who could make $200 to $400 an acre.

In 1900 Heinz made a decision to attack the ketchup market. The quality of the competition was extremely poor, but he also needed to bring down the overall price. Mueller worked on the processing costs and Heinz worked on advertising to get the volume up. Both men worked on taste surveys to find the most popular taste. In 1903 Heinz issued a "general letter" to his sales force on selling points: "Thirty-four years experience has taught Heinz many things about ketchup making. A study of gardening, cookery, and blending of spices had resulted in a ketchup that pleases the most fastidious—no green, no overripe fruit—quick handling—bottling hot from the kettles the same day the tomatoes come from the gardens—no second-hand bottles—kitchens scrupulously clean, and open to the inspection of the public."[5]

Daily park rides for employees, ca. 1903 (Imaging Department © President and Fellows of Harvard College. Harvard Art Museum, Fogg Art Museum, on deposit from the Carpenter Center for the Visual Arts, Social Museum Collection, 3.2002.369).

The battle of the early 1900s was one of purity instead of company expansion. In the end, purity would lead to a massive sales boom and expansion. Heinz took his battle for food purity to a crusade level. The poor manufacturing practices in food processing had started to be publicized in 1870s, and in the 1880s the new women's magazines took up the banner. The 1890s saw the issue of food purity become state law, albeit with little enforcement. By the early 1900s, the battle moved to Congress. European countries were also threatening to restrict American imports because of lack of purity, which went to the heart of Heinz's business strategy. Heinz had been involved from very beginning in the pure food movement. Many criticized Heinz's support of food purity laws as self-serving. Certainly, there was an element of self-serving in the 1800s, but in the end the laws would take away one of Heinz's most powerful marketing advantages as other companies met the new standards.

The food industry lacked scientific guidance going into the 20th century. Copper sulphate, a known poison, was commonly used in pickles and other preserved vegetables to produce a bright green color. Benzoate of soda was a common preservative that could be poisonous in larger doses.

Heinz himself had used things like benzoate and saccharine until they were found to be problematic. In the early 1900s, Heinz moved to a no benzoate ketchup, which increased his costs over his competition. More common in the food industry was substitution such as wood pulp in horseradish, vegetable oil or cottonseed oil in olive oil, cane syrup in maple syrup, and ground stems and roots in many sauces. Heinz had always opposed filler, but saw it as an opportunity to take market share. The industry lacked chemists and biologists to even evaluate fillers and additions. For Heinz the first decade of the new century was a corporate and personal struggle for national purity laws.

The decade was a two-phase battle consisting of the quest for a national food purity law followed by an extended battle against the use of preservatives such as benzoates. The issue of food purity heated up in 1879 when European countries started to ban food imports because of their "disease potential." The House of Representatives did take up the issue of food purity in 1880, but the opposition was formidable. The public also was not fully informed on the issue, and the bill ended in defeat in the Senate. The quest for food purity had started in the very magazines that Heinz supported with his advertising, such as *McClure's, Ladies Home Journal* and *Collier's Weekly*. The stories of sweeping the pieces and trimmings off the floor to put in the product were eye opening. These exposés started in the 1880s, but housewives had been suspicious of commercial foods since their beginnings in the 1860s. Heinz had started his company highlighting the practice of others adding sawdust to horseradish. The public pressure had produced widespread sanitary sterilization of canning operations by the late 1880s.

In 1900 Heinz realized that for market growth to continue, the food industry had to overcome consumer resistance. The National Canning Association had earlier on joined the campaign for purity, realizing the need to overcome resistance to canned foods. Still, these processes were not perfect, and some packages such as barrels were not sterilized. Exploding ketchup barrels from bacteria-produced gas were not uncommon. Another issue was ethical in that consumers were not paying for fillers.

The controversy heated up in 1894 when a congressional committee found extensive abuses in purity levels in the food industry. At the same time, state legislatures were investigating similar abuses. Until 1898, the movement lacked leadership. Then in 1898, Harvey Wiley, the Department of Agriculture's chief chemist, took the flag. Wiley also added science as a weapon in the battle. Wiley combined his scientific knowledge with his gifted writing ability to recruit an army to the cause. Alice Lakey, head of the Consumer's League, joined in the battle. Wiley also brought state

chemists and agriculture departments into the fight. In 1899, the Senate held its first hearing on pure food legislation. Wiley, however, lacked industry and political support. In particular, the controlling Republican Party opposed such a movement on a states' rights basis and individual freedoms.

By 1901 the political wind was changing. Big business and trusts had come upon public scrutiny. Republican trustbuster Teddy Roosevelt rose to the presidency after the assassination of President William McKinley. Roosevelt was initially hesitant to take on the food industry, preferring the steel and oil trusts. He had little interest in the food purity in 1901. For his part, H. J. Heinz had refused to join trusts and was a spoken opponent of trusts. Heinz's opposition had earned him the respect of Teddy Roosevelt. In 1902, H. J. Heinz formally joined the purity fight he had been involved in for years. More importantly, Heinz brought two able lieutenants to the fight—Howard Heinz and Sebastian Mueller. Howard had well heeled political connections from Yale, and Mueller was a food manufacturing expert. Mueller had become a national expert and was often called to Washington for consultation with lawmakers. H. J. Heinz had close ties with McKinley, but President Roosevelt was less of a political contact. Howard Heinz, however, had those needed blue blood ties to Roosevelt from his Yale connections. Furthermore, H. J. Heinz was a large contributor to the Republican Party, which could grease the path. H. J. also had an inside edge in friend, neighbor, senator, and Secretary of the Treasury Philander Knox. Heinz Company gave Wiley the industry support which had been lacking. In this respect, H. J. Heinz changed the balance for Wiley's crusade.

Wiley built support by addressing women's groups and taking headlines in magazines. Wiley, like Heinz, understood advertising and the use of the press. To that end he designed a "Poison Squad" of twelve healthy men to eat and test products available on the market. He then separated them in a boarding house, and tested some additives more directly. The results of problems and sickness were then publicized. The results were often dramatized in magazines such as *Ladies Home Journal*. Wiley even used the "Poison Squad" to try to establish "safe" limits for additives such as benzoate, borax, sulphates, and salicylic acid. Publicity slowly built support from the public, but Wiley still lacked wide industry support. Howard, as a chemist, took on the quest at the Heinz Company. He hired chemists and established a laboratory organization, which Mueller had started. Mueller had applied science early on and did not share H. J. Heinz's concern about college educated chemists. Howard Heinz and Sebastian Mueller quickly sided with Wiley's scientific arguments. H. J. Heinz found common ground with Wiley's flamboyant style.

Girls' sewing class, ca. 1903 (Imaging Department © President and Fellows of Harvard College. Harvard Art Museum, Fogg Art Museum, on deposit from the Carpenter Center for the Visual Arts, Social Museum Collection, 3.2002.370).

Wiley had gained another supporter in Robert Allen of Kentucky. Allen was the secretary of the National Association of State Dairy and Food Departments. Sebastian Mueller had strong ties to this organization as well. The National Grocer's Association had joined the alliance with this dairy association based on their need for honest labeling and weights. Wiley counted beer king Frederick Pabst as a supporter as well. Pabst, like Heinz, believed in the German model of food purity laws. The opposition also formed alliances. Ketchup producers other than Heinz formed a "ketchup lobby" to oppose food purity laws. Williams Company, the second largest U.S. ketchup producer, headed up the opposition. Williams was opposed to the potential elimination of preservatives, which it deemed necessary for ketchup production. The fear of the elimination of preservatives brought Campbell Preserve Company into the opposition as well. Without Heinz, industry opposition would have crushed Wiley's effort for purity laws. For Heinz the battle was becoming an advertising bonanza for the company. Heinz's advertising campaign used the word "pure" throughout. Heinz even guaranteed purity, offering rewards if impurities could be found. He commonly used the following line in ads:

"So common has adulteration become that there is but one safe way for the average housewife to buy vinegar, and that is, *by name*." Heinz sales boomed during the struggle for purity laws. The national food purity campaign played perfectly into the corporate mission of Heinz Company. Every muck-racking article drove hundreds if not thousands to the Heinz brand.

Heinz had another competitor in the rise of home canning. Home canning was becoming popular by the late 1890s as the price of glass containers put it within a family budget. As the Owens automatic glass bottle machine started to advance in the early 1900s, glass containers once again saw a price drop. Heinz, however, would be one of the first to use the Owens automatic bottle machine to bring price down significantly. In fact, while Heinz had the largest share, about 20 percent of the ketchup market, his biggest competitors were homes, making up almost 18 percent of the market. Home canning was driven by the 1868 invention of the "Mason" jar. The Mason jar had a sealable lid and metal ring. Its use in home canning was limited by the cost of hand-blown jars, which was coming down with automated glass jar and bottle making machines. A glassblower (supported by four to six man crew) could do about 350 jars a day, but the Owens machine made 3,500 jars per machine worker per day. The price of Mason jars plummeted, and home canning was increasing exponentially by 1904. The Ball Brothers in Muncie, Indiana, were making Mason jars available to all. Home canning had significantly hurt sales of Heinz's traditional line of jellies and fruit preserves. The public concern for manufactured food purity only strengthened the home canning industry. Like many great industrialists of the time, Heinz had a natural sense of the direction of the marketplace. Questions of purity hurt all food processors both home and abroad, but again Heinz took the offensive and moved to the forefront in advancing food purity.

At the famous St. Louis World's Fair of 1904, the Wiley and Allen forces set up a food purity exhibit outside manufacturers' row, against the cries of the food exhibitors. Wiley used science to show the problems of adulterated food in America. He showed the chemicals and dyes found in products like ketchups. Wiley was able to get the cooperation of state agencies through the Association of State Food and Dairy Departments. Wiley's focus was to get at least honest labeling of chemicals and dyes in these products. The exhibit was extremely popular and brought out the National Consumers' League and General Federation of Women's Clubs. Wiley's focus on labeling rather than banning chemicals was an attempt to appeal to Republican politicians. Labeling laws had been passed by several states. Labeling was also the supported goal of the Grocers' Association, but the public wanted standards and chemical bans. Heinz

Company took an even stronger stand: that chemical preservatives were unnecessary.

President Roosevelt was not ready to jump into the fray and the public was still not fully engaged in the struggle, but that changed with the publication of Upton Sinclair's *The Jungle* in 1905. Sinclair's exposé of the meat industry and the unsanitary conditions sent a shock wave across the country. Heinz understood that his future growth was dependent on the public feeling comfortable with processed foods. As a businessman Heinz realized that the small savings from preservative use could not replace the lost sales from a concerned public. Europeans were also pushing to limit American processed food, and Heinz had a large stake in exports. By 1905, public outcry had reached the ears of the politicians. Wiley and Allen organized a select committee of six to call on President Roosevelt in 1905. Sebastian Mueller and Howard Heinz represented the Heinz Company. Another important organization joined the alliance: the American Medical Association. The committee would call several times on Roosevelt, but the president remained unconvinced. H. J. Heinz, like a general, remained in Pittsburgh developing strategy. Roosevelt questioned Mueller and Howard on why the large food processor stood alone, pushing legislation that would seemingly hurt them. Howard explained the movement to home canning because quality fears was much more costly.

According to legend, Roosevelt's mind was changed over a glass of whiskey. The story goes that Wiley took his portable chemistry set to a meeting with President Roosevelt. Wiley was able to use dyes and flavoring to manufacture Roosevelt's favorite ten-year bourbon with freshly made grain alcohol. The legend suggests that Roosevelt's response was, "If a man can't get a good drink of whiskey in the evening when he comes home from work, there ought to be a law to see that he does." Regardless of what actually happened, Roosevelt was feeling the pressure and the congressional Republicans were ready to address at least the meat industry. Roosevelt was at the political break point. He also didn't care much for the showy Wiley (probably their egos clashed). In addition, Roosevelt had countries such as France banning all American food products. Finally, the public outcry had forced Congress's hand. The Pure Food and Drug Act became law in June of 1906. But the Pure Food and Drug Act mainly addressed meat inspection and the shipping of adulterated food. The battle against preservatives was just beginning.

During the 1901 to 1906 battle for the Pure Food and Drug Act, Heinz Company experienced rapid growth. The Heinz brand name and reputation was only strengthened by the battle. Heinz became linked with purity and high quality. The press praised Heinz, and sales boomed. Profits doubled during the period, and Heinz started to look to his legacy as Mueller

and Howard started to take over more operating duties. Howard had proven himself in the struggle for purity laws, and Mueller proved his operating excellence in developing preservative-free ketchup. H. J. Heinz was becoming comfortable a strategic general, focusing on European expansion, corporate culture, and brand marketing.

In January of 1904, Heinz began to consider moving the Sharpsburg Heinz family home and first factory to Pittsburgh's north side as a company shrine. Heinz made international headlines as he moved the old home six miles down river to his factory complex. Pittsburgh's Kress-Hanlon Company was hired to perform this feat of engineering. The process took weeks and encountered high floodwaters on the Allegheny River. Steam engines were required to pump down the water to get the barge under Pittsburgh's bridges. On land the movers were lucky to make fifty feet per day. Heinz turned every day into brand advertising, getting headlines the world over. Once the house was in place, Heinz turned it into a museum. The house would be moved again in the 1950s to Greenfield Village, where it remains today. For Heinz the house was to be the center of training for corporate culture for his employees. Heinz demonstrated that he could instill his beliefs into the company's heart while slowly disengaging.

The year 1905 marked significant change. Heinz adjusted the corporate infrastructure to reflect the new size of the company. The six existing partners of 1905 incorporated, creating the H. J. Heinz Company. Henry J. Heinz became president; Howard Heinz was assistant to the president; Fredrick Heinz took charge of farms; Sebastian Mueller was in charge of all operations and manufacturing; W. H. Robinson had financial operations; and R. G. Evans had sales. With Sebastian Mueller taking over operations at all plants, Charles Heinz (the son of Fredrick) took over as plant manager of the Pittsburgh plant. This was a strong management team that freed Heinz to pursue other interests. H. J. Heinz was being pulled in many directions, but he remained focused on embedding his basic beliefs in corporate operations. Mueller remained a trusted operations manager, and often was behind some of the innovative management ideas attributed to H. J. Heinz. Mueller, however, was a skilled lieutenant who, once given a general direction, could be quite creative. Mueller and Howard also developed the same trust that had freed the founder of daily management, which allowed Howard to function more as an assistant chief executive to his father. Howard's title in 1905 was vice-president and advertising manager. Mueller more than anyone else was responsible for the corporation evolution, and ultimately, the transition of management from H. J. Heinz to Howard Heinz. Mueller also seemed to have helped bring Howard along as an executive. Fredrick Heinz

Postcard showing Heinz Pier at Atlantic City, New Jersey, 1900 (courtesy Benson Ford Research Center, The Henry Ford, 53.41, Box 62).

was another dependable lieutenant. Clarence was clearly left out of the partnership, but he did function with the board on projects.

Also in 1905, the cornerstone was laid at the Administration Building at the Heinz complex. The Administration Building would be the international headquarters for the Heinz Company. The building was lavish in H. J.'s preferred style. It was a five-story solid brick building with marble interiors. The rotunda, including its fish pool and fountain, would be used as a starting point to welcome visitors. Stained glass windows dominated the structure with Heinz's favorite sayings enshrined. The building also included colorful wall murals by Edward Trumbull, who did murals for the Chrysler Building, Grand Central Station, and Chicago's Museum of Science and Technology. The time capsule included signed pictures of all the employees, a Bible, photographs of the complex, and pickle charms. On the technical side, the building included a system to clean the dirty Pittsburgh air and then filter it through a cooling and heating system. The system was actually a necessity, since metallic mill dust and graphitic flake filled the air. The sidewalks in front of the factory had to be swept every day to remove a thick layer of dust, as did porches throughout the city.

Another important year for both Howard and H. J. Heinz on a personal level was 1906. Clifford, Heinz's youngest son, started at Lafayette College in Pennsylvania. Clifford showed promise, but was to live in the

Heinz residence in East Liberty, which was destroyed by fire in the 1960s (courtesy Bensen Ford Research Center, The Henry Ford, 53.41, Box 60).

shadow of his older brother Howard. Howard at Yale ran in some of America's best social circles. He was one of America's most eligible bachelors and a bit of a playboy. In 1900, Howard met a beautiful graduate of the elite Ogontz School for Young Ladies in Philadelphia at a skating party of a mutual friend. The skating party was at Pittsburgh's Duquesne Gardens. Elizabeth "Betty" Granger Rust was the daughter of Charles Rust, a Saginaw, Michigan, lumber baron. She seemed a perfect fit for the Heinz family with her reputation as an outstanding horsewoman. The wedding on October 3, 1906, was one of the nation's noted social events. The best man was Henry Sloane Coffin, a Yale friend of Howard and the heir to the Sloane Furniture Company of New York. It took place in Saginaw, but H. J. shut down the plant in Pittsburgh for a party for all his employees. The employee reception and dinner were held in the company auditorium. Part of H. J.'s $100,000 wedding gift was used to build a home in the rich Pittsburgh suburb of Sewickley. After a brief honeymoon in Virginia, the couple took a two-month trip to Europe.

H. J. Heinz's involvement in the local, state, national and international Sunday school associations increased, as did his local political involvement. In 1905 Heinz became a leader in the political battle to annex Allegheny City (today's North Side) to the city of Pittsburgh. It was a bitter political fight. While Allegheny City consisted of seven square miles, it had a formidable population of 150,000. It was the third largest city

The Pittsburgh North Side complex in 1902 (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 12).

in Pennsylvania and had many wealthy and politically connected residents. Allegheny City had developed into a cultural center with Western University of Pennsylvania, the Allegheny Observatory, and a new Carnegie Library. It was home to the Pittsburgh Pirates baseball team and hosted the 1903 World Series between Pittsburgh and Boston. A movement called Greater Pittsburgh began in 1902, and the Pennsylvania legislature passed laws for the city of Pittsburgh to start the annexation of surrounding areas. The movement had the powerful support of Andrew Carnegie, Henry Phipps, the Mellon family, George Westinghouse, and H. J. Heinz. The group favored the development of the Oakland area as a culture center. Carnegie had already built a museum and library, and was starting work on a college—Carnegie Technical Institute. The entire group had real estate investments in the area. Heinz, of course, was now living in Pittsburgh's East End. Heinz envisioned himself a true Pittsburgher.

H. J. Heinz had become active in the commercial development of Pittsburgh's East End and Oakland area with the group. Entrepreneur Franklin Nicola believed in the future of Oakland as a cultural center for the Pittsburgh area and formed Bellefield Company to develop it. Nicola was able to enlist Heinz as an investor, as well as Andrew Carnegie, George Westinghouse, and Andrew Mellon. The first project was the first class Hotel Schenley. H. J. Heinz would move his annual company meeting there. Built in 1898, the Hotel Schenley would have guests such as Howard Taft and Teddy Roosevelt. Known as the "Waldorf of Pittsburgh,"

it was the host to the "Millionaire's Dinner" that hailed the formation of United States Steel in 1901. Carnegie built his new museum across the street, and a few blocks further, Carnegie Institute of Technology (Carnegie Mellon University). In 1909 the University of Pittsburgh moved to Oakland, followed by Forbes Field and the Pittsburgh Pirates. Today the Hotel Schenley is the part of the University of Pittsburgh (William Pitt Union). H. J. Heinz would, upon his death, leave an endowment to the University of Pittsburgh (part of which became Heinz Chapel).

Allegheny City had many factories, but the Heinz complex was dominant after Westinghouse moved his air brake plant to Wilmerding. Allegheny City was fiercely independent and strong leadership was needed to bring the two cities together. H. J. Heinz headed the committee that would merge the two cities. Heinz had promised to keep his massive complex in Allegheny City. The state and Pittsburgh pushed for merger. Pittsburgh had three times as many votes as Allegheny City, so the merger passed. Allegheny City took the fight to the Supreme Court only to lose. In 1907 the cities united to make Pittsburgh the sixth largest city in the United States with a population of 521,000. Heinz made tough speeches in both cities to push the merger forward. Heinz more than anyone was responsible for the merger of these two cities. Heinz also envisioned further expansion, since in 1907 greater Pittsburgh claimed 1.5 million, the nation's largest metropolitan area. Annexation would be a victory for Heinz, but it again left him with less time to manage the company. Heinz, as promised, put his investments in North Side, but the annexation started a decline for the area, as the Western Pennsylvania University moved also to Oakland (now the University of Pittsburgh) in 1908. In 1909, the Pittsburgh Pirates moved to their new home in Oakland. Another drain on Heinz's time was his role as second vice-president of Pittsburgh's sesquicentennial celebration. Heinz was also a member of the all-important executive and finance committee. The committee formed in 1906 for the 1908 celebration. Heinz would make many new friends through the committee, including the then-president of Carnegie Steel, Alva Dinkey. H. J. Heinz used these new connections to further his vision of a greater Pittsburgh. These connections would also bring him into an expanded political and civic role.

Heinz struggled to restrict himself to strategic matters at Heinz Company rather than daily management. Heinz, the great managerial tactician, did, however, become a great corporate strategist. He can be considered an American role model for the position of chief executive officer. Where Carnegie sold out, and Westinghouse remained an operating president, Heinz developed a new role for a company owner. He had struggled to let others drive the organization, but he did achieve that freedom over

Baked bean building, 1899 (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 12).

time. His new strategic role combined company and community duties. It still allowed him to set the overall direction for the company.

Heinz opened new factories and branches at an unprecedented pace in the 1900s. He also had learned well from his past. The country experienced a brief panic known as the "Rich Man's Panic" in 1905. Heinz started to borrow large sums of money not because he needed it, but as a hedge in a potential credit panic. The Panic of 1907 cost Heinz's neighbor George Westinghouse his Westinghouse Electric Company because he lacked cash to cover bond calls. Heinz, however, progressed through the panic with strong cash reserves. Besides expanding his factory capacity, Heinz moved aggressively to expand his international sales. By 1903 thirty salesmen were working in Europe. Heinz also had agencies in Africa, Australia, and the Far East. In 1903 Heinz started work on an olive oil manufacturing plant in Spain. The European success could no longer be supported by Pittsburgh factories, and in 1905, Heinz embarked on a manufacturing strategy for his European markets.

As part of this strategy, Heinz moved his best branch manager, C.E. Helen, from Boston to the London branch. The London operation had gone from sales of $15,659 in 1897 to sales of $163,359 in 1905. Helen was made out of the same mold as H. J. Heinz and proved to be a brilliant selection. He was an aggressive salesman and manager. By 1906 under Helen, the London branch reached sales of $245,197. This sales boom was led by the introduction of baked beans and cream of tomato soup. Heinz and Helen added distribution centers in Glasgow and Liverpool. Helen reorganized his army of salesmen to go directly to grocers with samples. Helen paid the delivery expenses to the grocer. He also used price leaders such as the "six-pence-half-penny" bottle of ketchup that became a favorite to cost conscious British housewives. At big grocers, he set up demonstrations and samplings, and he invented new uses such as beans and toast. He downplayed the American connection to the point that many Brits believed Heinz to be a European company. Heinz realized that he needed manufacturing in Europe to support the amazing growth.

Heinz purchased the pickle and condiment company of Batty and Company in 1905. It was a great risk for Heinz, whose own board opposed the purchase, since the capital markets were experiencing the Panic of 1905. H. J. Heinz took the Batty project as a personal one. C.E. Helen was, in many ways, a clone of the founder. Heinz realized he had a strong manager who could make a difference. It also gave him an opportunity to allow Howard to take on more in his established domestic operation, while Helen could spearhead the European expansion. Batty was a smaller manufacturer but had brand recognition going back to 1824 throughout Europe. Heinz maintained the Batty label for more than a decade, integrating the Heinz label with Batty on English shelves. He also used the Batty label to export from England and United States to continental Europe. The acquisition of Batty helped Heinz better understand taste preferences in Europe so he could adjust his recipes if needed. Heinz was particularly interested in expansion in Germany. Heinz and Helen implemented automated manufacturing and process control techniques at the Batty factory in Peckham. It was an old factory with high overhead, but Heinz slowly brought it to profitability. Heinz brought in financial officers and hired a strong local operation manager to support Helen. One key man was Helen's operating manager, Angus Stott, a German hired by H. J. in 1910. Stott became the "Mueller of England," allowing Helen to concentrate on sales and marketing. By 1913, European sales broke the one million mark, driven in part by the popularity of baked beans. C.E. Helen's baked bean advertising campaign changed the eating habits of a nation that had never known baked beans prior to Heinz introducing them. Like in America, H. J. had built a strong decentralized operation

Can lid making machines, 1908 (courtesy Senator John Heinz History Center).

and looked to bring ketchup, soup, and baked beans to the European market.

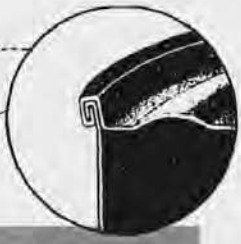
The 1905–1906 period exhibited outstanding economic growth for the nation and company. Ketchup sales were over 5 million bottles with sales near $3 million ($55 million today), and ketchup sales were starting to take off in the London branch. Pressure built on the ketchup man-

Automated filling in the baked bean department, 1911 (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 12).

ufacturing at Pittsburgh. Furthermore, the move to preservative free ketchup was creating problems because of losses in transporting near-ripe tomatoes to the Pittsburgh plant. H. J. launched a study to move his tomato ketchup plants to the tomato fields. Heinz, in 1904, added ketchup plants in Salem, New Jersey; Grand Rapids, Michigan; and Hilton, New York. This local operation eliminated the transportation loss of tomato and allowed better control in the production of preservative free ketchup. These highly automated factories made ketchup from tomatoes in a matter of hours, which was critical to long shelf life of the ketchup. The Salem plant on the coast allowed for shipments of tomatoes by boat from all along the east coast. The booming economy strained the distribution system. Heinz built brick warehouses in St. Paul, Nashville, and Cincinnati. Smaller additions were made throughout the United States. The year 1906 was also a time of major expansion in South Africa. The South African campaign used the typical approach of brand recognition with signs and extensive advertising.

The Inside especially prepared to protect contents.

A sectional view of the Heinz Improved Tin with a magnified illustration of the Solderless Seam.



HEINZ
Improved Tins

The Tin and the Top

Many fruits and vegetables can be preserved in tins much better than in any other form of container. But the old fashioned can had its objections. There was the solder, for instance, and sometimes the taste of tin. Now all these faults have been overcome in the Heinz Improved Tin, made especially by Heinz to bring to you many products of the Heinz kitchens, with all their purity and goodness perfectly preserved.

First of all, the Heinz Improved Tin is made of extra heavy tin, the inside being specially prepared so that the tin will not affect the contents nor the contents affect the tin.

Secondly, it is sealed without solder, thus overcoming another objection to the old-fashioned can. It is far superior to any other method of retaining the natural flavor of food and fruit, because the contents can be absolutely sterilized after closing.

The use of the Heinz Improved Tin for many of the Heinz products is simply a continuation of the rule that has made the fame of Heinz 57 Varieties universal—to place upon your table the best the world provides.

One of the Heinz Products in Heinz Improved Tin.

Of the 57 varieties we put up the following in tins: Preserved Fruit, Apple Butter, Cranberry Sauce, Mince Meat, Tomato Soup, Baked Beans. A handsome booklet telling the whole story of the 57, FREE.

HEINZ
57
are put up without preservatives or coloring matter.

H. J. HEINZ COMPANY
New York Pittsburgh Chicago London

Things which are advertised are always the best.

Above and opposite: Sales advertising for solderless cans (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 13).

Mascotive factory in 1899 (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 15).

In 1900 Heinz had a large building and automated lines dedicated to baked beans, and this would be a major corporate strength throughout the first decade of the century. The baked bean building initially was built in 1897, but was expanded every year. Heinz upgraded every year as sales continued to double almost every year. The growing popularity of beans in England in the mid–1900s required further automation and expansion. By 1907, the building was fully integrated with can making, labeling, and packing. It included an automated tin can line producing cans that were automatically filled from above. Heinz's baked bean operation may have been America's first true assembly line. It was a palace of automation and materials handling with chutes, conveyors, and cranes. Sebastian Mueller deserves a great deal of the credit for this advanced factory system. This was true mass production, and its arrival changed the nature of labor. The assembly line of Heinz did eliminate jobs, but this reduction was more than covered by the sales volume increase achieved by lower priced, mass-produced canned products. Increased sales led to increased jobs, albeit at lower wages. Less dexterity was needed for these new assembly line jobs and the pay reflected that. Still, assembly work was stressful. The pace on the baked bean line was rapid and was described in the 1907 *Pittsburgh Survey*: "This chain is not set to her pace, but she must adjust herself to the pace of the machine, at a speed which is for tired arms hard to sustain. She cannot turn her head or change her position, or she will miss a can, and fail to slip in a slice

of pork." Prior to automation, a labeler made between $1 to $1.80 a day based on incentive (rate was about 3 cents a dozen). A machine "labeler" really stacked labeled cans or transferred cans to the labeling machine. A machine labeler was paid 60 cents a day in 1907, which was below the women's all-industry average for the time. The age of the women workers was also reduced, most being between sixteen and twenty years old. The local German-American girl was replaced by daughters of immigrant Poles, Hungarians, and Slavs.

This automation drove prices down across product lines. Ten cents could now buy a bottle of ketchup or can of baked beans. Volume further increased operating efficiencies and reduced purchasing costs. Heinz differed from the competition, which specialized in one item or a line of products, such as Campbell's Soups and Blue Label Ketchup. Mueller achieved this by grouping similar products. For example, the baked bean building made soups, and spaghetti. Today the term would be "group technology" or "cellular manufacturing." The strategy allowed for product diversity while maintaining high volume. Some departments such as canning were centralized to automatically feed different product lines. Of course, this type of group manufacture was supported by the brand marketing to maximize volume. Heinz, with its product diversity, was also the low cost producer because of its volume. With beans, soups, and spaghetti, the baked bean department was fully utilized at full capacity.

10

The Panic of 1907

Investments in people and resources started to pay dividends in the latter half of the first decade of the 20th century for H. J. Heinz Company just as a major recession loomed. The Panic of 1907 had been building for two years, but came to head in early March of 1907. March 12 started a chain of events that rapidly plummeted the country into a depression. H. J. Heinz's neighbor, Henry Frick, had just received an urgent letter to come to New York for an emergency meeting of the J. P. Morgan banking firm. Letters of concern continued to flow all day long (mail was delivered seven times a day in Heinz's influential Pittsburgh suburb) as Frick prepared to take the train to New York. J. P. Morgan, America's premier banker, had just left for an art-collecting trip to Europe. In the days prior to the Federal Reserve, the House of Morgan controlled America's financial well-being. A few days earlier, J. P. Morgan had been in Washington to assure President Teddy Roosevelt of the strength of the American economy. Henry Frick had been a friend of Roosevelt, having had a visit by Roosevelt to Frick's Pittsburgh estate, even though many believed Roosevelt to be the root cause of all the urgent calls to Frick on this day. Another attendee of this emergency meeting in New York was Jacob Schiff, major banker to the Union Pacific Railroad. Schiff had predicted financial problems a few months earlier: "such a panic ... as will make all previous panics look like child's play."[1]

The stock market was falling rapidly that week, and the Dow Jones average would lose 25 percent by month's end. The situation had reached crisis stage with little hope of stabilization. While the New York exchanges struggled, regional markets such as Pittsburgh closed for lack of liquidity. Pittsburgh's stock exchange was closed for three months. Fortunately, Heinz had been taking out loans and storing cash since 1905. Heinz well remembered the Panic of 1873, which cost him his first company. Interest

rates were spiraling out of control as stock prices plummeted. It was becoming clear that this panic was more serious than the "Rich Man's Panic" of 1903. Heinz's neighbor, Thomas Mellon, found his bank near closing to stop runs on deposits. This event was also much different from the great Panic of 1873 that had bankrupted Heinz's first company. This time the currency problem had international roots. Currency problems in Europe had already started a wave of gold hoarding. Even world markets such as Japan had a currency shortage. After years of growth, Heinz's 1907 sales would be lower than in the previous year. At the time, only a few Americans, including H. J. Heinz, realized what was taking place in the world's financial centers. This day, however, the word was slowly getting out. The New York bankers were starting to worry.

Only a week before, another neighbor, George Westinghouse, had returned from New York, where he had discussed a major corporate bond offering planned for the summer because he could not borrow cash from the banks. Westinghouse was also preparing his stockholder speech for March 31, 1907, and planned to announce a dividend of over two million dollars. Westinghouse was having a most profitable year, but the panic caused loans to be called in. That was the exact scenario that Heinz had experienced in 1873. To most of the nation, there was no hint of any banking problem on the horizon. These crises tended to start in small New York circles, moving in months to the average working man in the industrial centers. On this March day, the first shock waves went out, and the sulfuric smell of prosperity would soon end in the Pittsburgh air. For Westinghouse, the liquidity crisis of 1907 would cost him Westinghouse Electric Company; he lacked the cash to cover loan calls. Heinz, however, had prepared and he carried his great company through the crisis, while many of his neighbors lost their companies. Heinz was undaunted, moving to expand his operation in Europe. Heinz told his salesmen at the annual sales convention in January of 1908: "The country is now passing through a crisis, which, whatever its effects in other quarters, need not be considered as auguring ill for our own business in the coming year. This has been a panic of prosperity suffering for lack of currency to transact its business, rather than the depression of hard times, and I look forward to a recovery in the near future that will more than justify our hopes for bigger and better business in the forthcoming year than we have ever enjoyed before."[2] While only slightly better than 1907, Heinz correctly predicted the biggest sales in 1908.

Heinz was one of a handful of companies that had the cash to expand in this downturn, and Heinz Company would continue to expand at least the product line. The downturn hit Heinz harder in London, slowing sales and hurting his quest to reach profitability at his new branch. Still, in

Early (ca. 1901–1904) A&P and Heinz banner (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 8).

Europe and America, Heinz was perfectly positioned for the downturn with products like baked beans and tomato soup. The steelworkers of Pittsburgh saw their wages reduced by as much as 30 percent while strikes progressed. Baked beans offered a great source of low cost high protein. Baked bean sales in Europe also increased with the downturn. Heinz also introduced oven-baked red kidney beans to his lower cost line and high protein peanut butter to the market. Heinz adjusted his marketing in 1907 to target the mill worker in England and America. In England, where mill workers went home for dinner (lunch), Heinz advertised beans as a quick meal that could be heated directly in the can. The Panic of 1907 lasted until the beginning of 1910, and 1909 represented the first big yearly drop in sales (in 1908 sales were $6,821,768 versus $5,898,787 in 1909).

Heinz had a formidable company in 1907. He had 12 branch factories, 28 branch warehouses, and 67 salting stations across the nation. Heinz had 4,000 employees with additional 40,000 in harvest season. The Pittsburgh plant had 30,000 visitors in 1907. Having a strong financial foundation, Heinz continued his work on food purity in 1907. The Pure

Food Act of 1906 had not fully addressed the use of additives in foods. It required the formation of the Committee on Standards of Food Purity, but its authority was limited. The issue continued to be the use of the preservative soda of benzoate and of coal tar dyes. The combination could allow manufacturers to use refuse and floor scraps as part of a product such as ketchup. Technically, the 1906 act only required the label to reflect the use of such additives. The state found numerous violations of amounts on labels as well as marginal practices in canned foods. Ketchup manufacturers commonly used rotten tomatoes and then heavily dosed the product with sodium benzoate. Benzoate at the proper levels was probably not a problem other than allowing the use of problematic food. It did at some levels adversely affect taste.

H. J. Heinz had used preservatives in his ketchup from his earliest days, using his mother's recipe. Originally, Heinz used natural willow bark that contained salicylic acid, which was a natural preservative. Homemakers as well as Heinz had also used boric acid powder as a preservative, which was sold in packets for home use. Benzoate soda or sodium benzoate was a bit different. Benzoate had originally been processed from the benzoin tree, but German organic chemists had found a way to make both benzoate and salicylic acid artificially from coal tars. By 1905 the American food processing industry was addicted to sodium benzoate, which helped hold down costs and spoilage. By the turn of the century, chemists were issuing reports on the health hazards of foods with sodium benzoate added. Heinz had always been health conscious, and these reports moved him to first eliminate salicylic acid from ketchup. Still Heinz continued to use small amounts of sodium benzoate till 1904. Harvey Wiley's experiments with sodium benzoate revealed potential problems. Embodied in a tough political fight over the Food Purity Act, Heinz chose to start eliminating its use. Sebastian Mueller had warned Heinz that the processing advances required would be revolutionary and costly. Mueller also feared the Heinz's money back guarantee and spoilage payback to grocers could make a preservative-free ketchup economically impractical.

Nonetheless, Mueller started the conversion to preservative free ketchup in 1906. Heinz and Mueller started with a review of homemade ketchup recipes known to have long shelf lives. Experiments led to the use of more natural preservatives such as salt, sugar, and vinegar. Mueller's use of scientific management led him to a number of breakthroughs. Mueller also found the pectin/pectic acid balance to be critical. The proper balance of pectin and pectic acid required a perfect tomato, not too ripe and not too green. Also, any type of factory waste had to be eliminated. Apple pulp could also help with the pectin balance. Pulp content turned out to be important to shelf life. The common thin ketchups of less than

10 percent pulp had much shorter shelf lives. The correct balance also thickened the ketchup. This thickening changed the nature of consumers' views on the attributes of good ketchup. The manufacturing requirement and inspection standard for "perfect" tomatoes did increase Heinz's cost. It also required the use of refrigerated rail cars where possible, and high inspection rejects of incoming tomatoes. Mueller's experiments led to a strategy of decentralizing ketchup production to the tomato fields. Heinz also eliminated barrels and went to large lacquered tin cans for bulk packaging, which added cost to the final product. Heinz was able to fully produce preservative-free ketchup and pushed to realize a market advantage. Ketchup prices had to be increased in 1907, which required Heinz to launch a ketchup advertising campaign to justify the higher price. The advertising would lead Heinz into a direct battle again with other manufacturers. Many criticized Wiley for working with Heinz to increase Heinz's profits.

Mueller launched standards for all incoming tomato stations using women inspectors. The inspectors would eliminate rotten tomatoes or used knives to cut out bad spots. Tomatoes were washed twice after inspection to remove any chance of contamination. Better temperature control was added to the scalding cylinders. Mueller added centrifugal machines to remove the skins, cores, and fiber from the scalded tomatoes. This tomato puree was checked at this point. The pureed juice moved by silver tubes (to prevent bacteria growth) to double-jacketed steam kettles designed at the Heinz plant. The puree was cooked down to a thick sauce for ketchup or tomato soup. There were quality control checks at all points. Mueller set up automation to eliminate handling, which might introduce bacteria into the product. The full line, handling systems, and floors were fully washed every day. No such continuous production line had ever existed in the United States.

Another technological advance from the quest for preservative-free ketchup was the application of the screw-top bottle. One of the fears of preservative-free ketchup was reduced shelf life. Initially, thin-bodied ketchups used a very small hole, which restricted air entry. As the bottle opening widened with thicker ketchups, Heinz evolved from wax-covered corks to wax covered cork plus metal foil. Wire cork tops were used as well by 1900. Heinz started the move to screw top bottles in 1906 to help the shelf life of the new preservative-free ketchup. Heinz was one of the first to apply it to ketchup; Edmund McIlhenny had used it for Tabasco sauce in 1882. Heinz had started to use screw tops on a limited basis as early as 1892. The screw top was air tight and superior to any capping system, but Heinz was slow to adopt. The screw top lid and jar were actually the result of John Mason's patent in 1858. As early as 1876, French's

Pickle bottling in 1897 (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 16).

mustard used a zinc screw top jar for table use, but production costs were high throughout most of the 19th century. The zinc lid could corrode over long storage. Mueller was able to automate the screw top capping by 1907, giving Heinz another advantage. The octagon bottle with its screw top made it an icon on the grocer's shelf. Heinz also used a second neck label proclaiming "benzoate free." Mueller's success was used by H. J. Heinz to launch a national advertising campaign. Mueller's processing improvements had given H. J. Heinz what he needed to take the battle to a national level.

In 1907 to prepare for the battle, Heinz appointed a troika of managers to lead the fight. The team consisted of Heinz's lobbyist, Loren Dow, First Vice-President Howard Heinz, and Second Vice-President Sebastian Mueller. Heinz Company maintained that preservative-free ketchup and food was possible if the best raw materials, standards, and cleanliness requirements were applied to the process, and Mueller had the proof. For the other manufacturers as well as Heinz, the difference was cost. At the heart of the dispute was that benzoate covered poor raw materials and

Baked bean building and automation in 1898 (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 12).

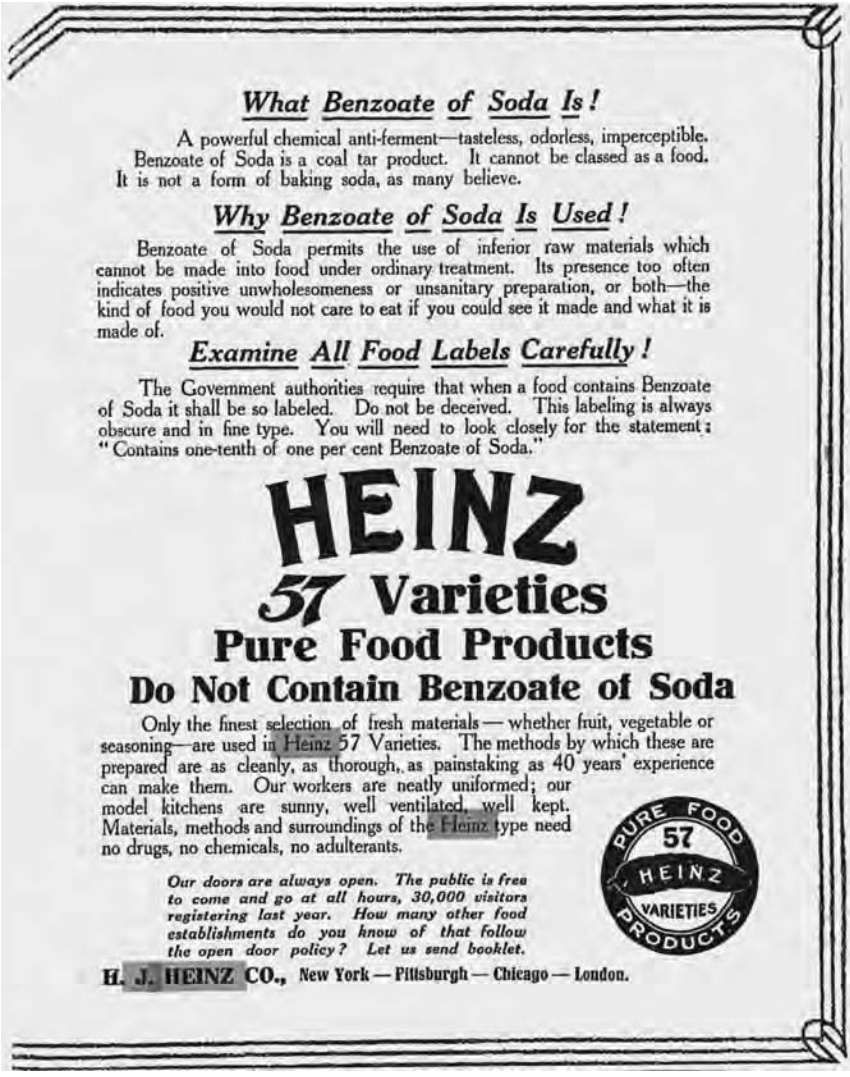
practices. Heinz tried to argue that benzoate was dangerous as well, but that was less clear. Mueller's talks at food processing associations started to win a few converts, and the Heinz "preservative-free" advertisements were creating a boom in demand. Heinz would succeed in making it one of his greatest advertising successes. He pushed hard for more honesty in labeling, realizing most of his competition used an array of dyes, preservatives, and fillers. This was a battle made for Heinz Company, and H. J. Heinz turned it into a sales boom.

Harvey Wiley in 1907 used his expanded authority under the Pure Food and Drug Act to further wage war on benzoates. He hired several more chemists and launched a series of "ketchup experiments" to demonstrate the problem of benzoates as well as a means to manufacture benzoate-free ketchup. Wiley would earn the nickname of "Old Borax" with his "Poison Squad." Wiley turned to a more proactive and preventive research approach after 1906. The research team consisted of Purdue chemists Arvil and Katherine Bitting. Since Heinz was already producing preservative-free ketchup, the Bittings chose Charles Loudon Company to experiment with in 1907. Loudon Packing Company had opened

a ketchup factory in Terre Haute in 1904. Charles Loudon had been a supporter of benzoate, but his new ketchup (Loudon called it catsup) plant was state-of-the-art, using glass lined pipes and pots to prevent contamination and spoilage. Loudon was a significant manufacturer with over 1.5 million bottles being sold each year. In particular, Loudon's "Climax Catsup" and "Loudon's Catsup" had name recognition because he had the Pullman railroad diner account since 1889. The goal was to win over another supporter.

These experiments became known as the "Bitting Ketchup Experiments," after Arvil and Katherine Bitting. The Bittings performed a number of process improvement experiments at the Loudon plant. The improvements were similar to the preservative-free ketchup production of Heinz. First inspection was put on to eliminate overripe incoming tomatoes. Women with paring knives lined a conveyor to hand inspect and cut out any bad spots or scrap poor tomatoes. The tomatoes were then cleaned with water and steam to remove the skins. Pulp and further processing was done in enamel-lined pipes and vats. Vinegar, sugar, and salt were increased in the recipe, and weighing assured the correct amounts. Eventually, the density of the pulp was also increased. Loudon also switched to lacquered tin cans, as tin salts became a national concern. Heinz even suspended the use of tin cans for a time. Tests on Pullman diner cars and the general public were highly successful, and Loudon joined Heinz in making preservative-free ketchup. Another major competitor, Snider, joined the benzoate-free manufacturers with a new process as well. Snider countered Heinz with its own advertisements. The public voted overwhelmingly with their purchases for preservative-free ketchup. Another part of the story is that the natural preservatives such as sugar, vinegar, salt, and even apple pulp enhanced the favor.

Heinz's most expensive newspaper campaign was from 1907 to 1910, and it focused on food purity. H. J. Heinz was obsessed with banning of benzoate of soda. The battle went back and forth between medical and governmental organizations. Heinz used front page, half page, and endless newspaper advertising to push for the elimination of benzoate of soda. When the American Medical Association condemned benzoate in 1909, Heinz launched a nationwide newspaper and magazine blitz. A government referee board ruled the use of benzoate as not detrimental, and the Curtice Brothers, which used it in its Blue Label Ketchup, launched its largest ad campaign. Heinz, Curtice Brothers, and pro-benzoate Williams Brothers fought the legal battles all the way to the Supreme Court. Ultimately, benzoate would be allowed, but Heinz had won the public relations war. In a time of Upton Sinclair, trust busting, and robber barons, Heinz became the champion of the people.



What Benzoate of Soda Is!

A powerful chemical anti-ferment—tasteless, odorless, imperceptible. Benzoate of Soda is a coal tar product. It cannot be classed as a food. It is not a form of baking soda, as many believe.

Why Benzoate of Soda Is Used!

Benzoate of Soda permits the use of inferior raw materials which cannot be made into food under ordinary treatment. Its presence too often indicates positive unwholesomeness or unsanitary preparation, or both—the kind of food you would not care to eat if you could see it made and what it is made of.

Examine All Food Labels Carefully!

The Government authorities require that when a food contains Benzoate of Soda it shall be so labeled. Do not be deceived. This labeling is always obscure and in fine type. You will need to look closely for the statement: "Contains one-tenth of one per cent Benzoate of Soda."

HEINZ

57 Varieties

Pure Food Products

Do Not Contain Benzoate of Soda

Only the finest selection of fresh materials — whether fruit, vegetable or seasoning—are used in Heinz 57 Varieties. The methods by which these are prepared are as cleanly, as thorough, as painstaking as 40 years' experience can make them. Our workers are neatly uniformed; our model kitchens are sunny, well ventilated, well kept. Materials, methods and surroundings of the Heinz type need no drugs, no chemicals, no adulterants.

PURE FOOD 57 HEINZ VARIETIES PRODUCTS

Our doors are always open. The public is free to come and go at all hours, 30,000 visitors registering last year. How many other food establishments do you know of that follow the open door policy? Let us send booklet.

H. J. HEINZ CO., New York — Pittsburgh — Chicago — London.

A 1908 magazine ad (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 62).

In retrospect, benzoate is not the problem that it was thought to be, and benzoate is commonly used in foods today. It is limited today only because it imparts an aftertaste. Wiley did succeed in getting borax, salicylic acid, and formaldehyde to be found unacceptable. The benzoate wars went on into 1911, with Heinz pouring huge amounts into anti–benzoate advertising. Heinz and Wiley had legal and committee setbacks at

every turn. Heinz only strengthened his resolve, moving to two-page educational ads in magazines like *Collier's* and *Saturday Evening Post*. Curtice Brothers' Blue Label Ketchup had lost sales by 1911. In 1904, Heinz share was around 20 percent followed by T. A. Snider at 13 percent, Curtice Brothers' Blue Label at 10 percent, and Williams Brothers around 10 percent.[3] Heinz's market share neared 50 percent against the much cheaper benzoate ketchups by 1911. Heinz had really proven the power of advertising and the consumers' desire for purity and quality. The preservative free thick ketchup also fit the shift in the American diet to hamburgers, French fries, and hot dogs. Thin ketchups passed into history. Heinz in general found greater consumer confidence in all of its products.

Heinz launched one of his most extensive print advertising campaigns in 1907. It was primarily focused at women's magazines, but it also used newspapers in major markets such as New York, London, Chicago, and Pittsburgh. Both H. J. and Howard were committed to advertising, with Howard leaning more towards print. The 1907 advertising was very broad in scope, but focused on product innovation. A lot of advertising dollars went to promoting Heinz's new canning process that eliminated solder. Heinz was canning baked beans, spaghetti, fruits, soup, apple butter, and mincemeat in 1907. Cans offered operating efficiencies and reduced costs, and Heinz wanted to overcome any consumer resistance. Heinz also promoted "salad days" using the combination of bottled olive oil and malt vinegar. For salads a new mustard dressing was also introduced. Heinz also invested heavily in promoting his Mandalay Sauce in 1907. The Mandalay Sauce was also packaged in a special glass stopper bottle for table use. The ads also offered a free booklet for the consumer. Howard played off his father's success with educational print ads on purity.

One setback in 1907 was the death of his general sales manager, R. G. Evans, one of the pillars in the Heinz organization. Evans, along with C. E. Helen, was one of the few that Heinz listened to about sales. Evans was a loyal manager and a key to H. J. Heinz's ability to travel. Evans, like Mueller in operations, could be counted on to handle the details while H. J. Heinz was abroad. R.G. Evans was one of the few non–family executives that reached a high level of trust with the founder. He managed and trained the sales force in the "Heinz way." Evans was the only executive to whom Heinz entrusted the management of his travelers. Like Mueller, Evans had developed a strong mentor relationship with young Howard Heinz. Howard Heinz noted on Evans' death: "I received the greatest shock I have had since the loss of my mother in 1899. The personal loss is more than I can describe, for he was sort of a second father to me."[4] Howard Heinz personally worked with the salesmen from

1907 to 1909 to emphasize pure food. H. J. Heinz made Howard vice-president and sales manager to replace R. G. Evans. Within a year Nevin G. Woodside was promoted to general sales manager to take on the full duties of Evans.

The last part of the century's first decade saw Heinz become extremely active in the civic affairs of Pittsburgh, continuing the progressive takeover of city hall. This love of Pittsburgh and civic pride had been part of Heinz since his family first came to the South Side of the city. Unlike other Pittsburgh industrialists, such as Andrew Carnegie, George Westinghouse, Henry Phipps, and Henry Clay Frick, Heinz remained in Pittsburgh after he became successful. Heinz had deep family roots in the area, and he favored those roots for the center of his company. Even today, the Heinz family is extremely loyal to this rust belt city. H. J. Heinz and son Howard fought for decades to make their Pittsburgh a great city.

Heinz had served on the Pittsburgh Exposition committee for years and helped to bring much commerce and growth. The committee had also built the home of the highly successful Pittsburgh Pirates baseball team. When the Pittsburgh Pirates hosted the 1909 World Series, President William Taft was among the fans at Exposition Park. America's great baseball player Honus Wagner could

Left: **A 1910 ketchup advertisement (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 62).**

be seen with a Pirates baseball game. Heinz in 1907 helped facilitate the merger of two powerful civic organizations—the Chamber of Commerce and the old Merchants' and Manufacturers' Association. Heinz, whose wife, Sarah, converted him to a theatergoer, helped establish Pittsburgh's first symphony and opera theater. The opera and performing arts remains a major interest of the Heinz family to this day. By 1910 Pittsburgh had become a world-class city with great universities. The Carnegie Museum housed the world's greatest collection of dinosaurs. Pittsburgh's bridges and office buildings were some of biggest and tallest in the world. Heinz had a deep love of the area and believed in the future of Pittsburgh.

Unfortunately, there was a darker side to Pittsburgh, but H. J. Heinz would help lead the first city renaissance. The city was first in the nation in water and air pollution. In 1906, Pittsburgh had 5,730 cases of typhoid fever caused by impure water and filth. In 1906 there were 2969 cases of typhoid, and in 1907, typhoid cases topped 6,000 with 622 deaths. The Monongahela River was a breeding ground for typhoid with hot mill water discharges raising the river temperature to over 100 degrees at times. Pittsburgh's typhoid death rate of 130 per 100,000 cases was the highest in the nation.[5] Days could approach night in darkness due to the smoke and smog. Annual soot fall put Pittsburgh in first place in the world with 1,031 tons per square mile. London had an average of 248 tons per square mile and Glasgow had an average of 820 tons per square mile.[6] A third of Pittsburgh deaths were among children under five due to these conditions. Heinz's closest neighbors, George Westinghouse and Henry Clay Frick, were forced to leave the city because of health problems of their wives. If smoke and water pollution were not enough, Pittsburgh's spring flooding was legendary. The Great Flood of 1907 had crippled the city for weeks; losses mounted to an unbelievable $30 million. Sharpsburg was under water, like most river towns. Heinz would lead the reform in Pittsburgh through his membership in three civic groups—the Civic Club, Chamber of Commerce, and the Civic Commission. He had started on the chamber in 1903 and rose to vice-president. He also was assigned and later became president of the Pittsburgh Flood Commission. Heinz, with his fellow capitalist and traveler John Bindley, led a new group to make changes.

H. J. Heinz took on the impure water that had been a constant source of typhoid fever for over a hundred years in Pittsburgh and won. It was a personal battle because his wife died from the complications of typhoid. The fight for sewage, flood, and smoke control was a long and difficult battle for Heinz and his fellow reformers. H. J. lacked the support of many allies in other areas, even his own local Republican Party opposed.

Heinz had been a staunch and major supporter of the Republican Party at the national level, but years of one party control had corrupted the local government. Two men, Christopher Magee and William Flinn, ran the city, but in 1906, reform Democrat Mayor George Guthrie took office. Heinz worked behind the scenes, but then surfaced as vice-president of the Pittsburgh Civic Commission and a member of the Committee on City Planning. The fight for sewage control and water purification came first. Heinz's friend and engineer Fredrick Law Olmsted, Jr., was assigned to evaluate the problems.

The Olmsted report of the problems would be a blueprint for years to come. Heinz enlisted Pittsburgh's capitalists and formed an alliance with Democrat Mayor George Guthrie. Heinz proved a great civic leader. He and the other city capitalists got filtration plants built. By 1908 all Pittsburgh water was filtered, and by 1914 North Side was added to the system. The results were amazing, as typhoid cases were cut in half. Filtration was a major improvement but spring flooding still overwhelmed the system. Heinz's Flood Commission was visionary but would not be fully implemented until 1940. In 1940, the suggested system of reservoirs was fully implemented.

Heinz's work on smoke abatement drew mixed results as well. Smoke had been a symbol of Pittsburgh's economic might. The smoke problem was a result of coal burning and the topology of deep valleys. Coal had been the source of Pittsburgh's success; its use powered its great mills employing over 70,000. Coal mining was also the second biggest industry in the greater Pittsburgh area, so smoke abatement would be a tough fight for the Heinz coalition of progressive Republicans.

Heinz had been a pioneer in the use of natural gas in the 1880s, which led to a few years of clear skies. Nine-tenths of Pittsburgh's industry and homes were on natural gas, but the abundance and low cost of coal pushed Pittsburgh back to mostly coal by the late 1890s. Heinz believed that engineering solutions were available to make coal-fired steam engines run with less smoke. Downdraft furnaces and mechanical stokers had helped reduce smoke in St. Louis and Chicago, but Pittsburgh was the factory of the world. Pittsburgh in 1907 was fueled on coal with its steel mills, factories, and steam locomotives. The committee on smoke abatement did pass a city ordinance for a chief smoke inspector and department. Restrictions were set on all new coal fired furnaces, but the existing furnaces were excluded. Heinz tried to set a personal example by converting to natural gas fired boilers at Heinz Company. Heinz, however, learned that gas fired furnaces could not meet the demands of a large factory, and he had to convert back to coal power. Heinz and the reformers were slowed again as the old political machine

A 1906 concert at the factory (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 12).

came back into power after 1910, but he and Howard Heinz would fight on for decades.

Heinz also led a small group of businessmen with Mayor George Guthrie to have a social analysis of conditions in Pittsburgh. With Benjamin Thaw and others, Heinz helped pay for a survey by a New York nonprofit. The "Pittsburgh Survey" was a unique experiment in social analysis and remains today a rare source of data about early industrial America. The idea was not popular with most heavy industry capitalists, who were well aware of the poor working conditions. Those conditions would be a stark contrast to their mansions. Heinz hoped that such a study would help with his efforts to get pollution control.

Pittsburgh was the fifth largest city in the United States and the center of American industry in 1907. The survey would cover a six county area that accounted for most of America's steel and iron production. The steel industry had brought massive numbers of immigrants to the area of over 1.6 million. Of that population, over 60 percent were foreign-born

or children of foreign-born. It was also a city of contrasts with more millionaires than any other American city and a huge cultural district. Paul Kellogg, director of the survey, said: "Pittsburgh is not merely a scapegoat city. It is capital of a district representative of the untrammeled industrial development, but a district which, for richer, for poorer, in sickness and in health, for vigor, waste and optimism, is rampantly American."[7]

Heinz was almost alone among Pittsburgh's millionaires in demanding the survey, but Heinz was also almost alone in his wealthy neighborhood; most had built mansions in other cities far from Pittsburgh's social problems. Pittsburgh had just been highlighted by the *New York Times* as the home of millionaires, and many feared negative publicity. In 1907, Heinz stood in the top ten of these millionaires with $20 million in net worth. His neighbor Henry Clay Frick was number two on the list with $75 million in net worth. Steel owner B. F. Jones had $100 million, the President of United States Steel William Corey had $10 million, and the President of Bethlehem Steel Charles Schwab had $20 million. These men were under great scrutiny with the 1907 recession, and a survey of the workers would not be good news. These capitalists tried to put pressure on the reform politicians not to move forward with the survey. The survey would eventually cost many of the reformers their political jobs, but in 1907, an army of social scientists and experts descended on the city. These experts interviewed and studied the budgets of Pittsburgh families. They crawled through sewers, tenant housing, and hospitals. They interviewed the slum dwellers. Companies reluctantly gave details of their wage structure and benefits. County records were gathered on industrial accidents. The data collection of the survey was truly amazingly even when judged by today's standards. The final report in 1911 would consist of six large volumes and remains today the best statistical analysis of the period.

H. J. Heinz worked hard to calm the fears of the area's industrialists, but even Heinz had some fear as this army of data collectors showed up at Heinz Company. The names of companies were withheld, but it took little to figure out who was who. H. J. Heinz also withstood the attacks of old machine of the Republican Party, which reclaimed the city after the survey was published. Government and the tax system were part of the survey. The survey results were hard-hitting even with the best of Pittsburgh's employers, such as Heinz and Westinghouse. The summary noted: "The progressiveness and invention had gone into Pittsburgh the industrial center, and not Pittsburgh the community. One had only to compare the efficiency of the blast furnace in performing its function with the efficiency of many of the houses in performing theirs."

The details were even more horrific as the survey pooled data. Pittsburgh averaged 1000 deaths per year due to typhoid fever and industrial accidents, and almost double that suffered from lost limbs in industrial accidents. Wages were low for both men and women. Immigrant steelworkers lived in crowded row houses with no running water and common court toilets. Sewage control was not much better than in medieval Europe. Heinz Company did, as expected, live up to its gold medals for employee treatment, but took some low marks on overall wages. *The Pittsburgh Survey* came out in 1909 and follow up reports continued through 1914. H. J. Heinz and his son Howard worked hard through the various civic committees to address the problems.

The survey did wake the conscience of many industrialists. Two steel executives that Heinz had worked with on civic committees were particularly touched. These were William Dickson, then first vice-president of United States Steel, and Alva Dinkey, the plant manager of the vast Homestead Steel Work, which came under heavy criticism. Dickson was clearly moved by the survey, professing that it changed his life, and a likening it to Abe Lincoln seeing the abuse of slaves as a youth and resolving to destroy slavery. Dickson moved to improve hours and working conditions throughout United States Steel Corporation, and continued the quest throughout the steel industry for 30 years. Dickson would become a passionate labor reformer for the rest of his life and an admirer of H. J. Heinz. The survey touched another steel executive, Charles Schwab, who implemented reforms at Bethlehem Steel. Even the retired Andrew Carnegie was moved reading it and established a fund for workers' pensions and insurance for his old employees. The survey changed not only Pittsburgh, but also the nation.

Meanwhile, under Sebastian Mueller, Heinz Company continued to prefect preservative-free ketchup with significant reductions in cost. Ketchup became a true assembly line product with bottle making machines, automatic filling stations, automated labeling, and automated capping. Heinz approved Mueller's plan to move ketchup production to the fields instead of being centralized in Pittsburgh. This allowed ketchup to be made within hours of harvesting the tomatoes. Reduced tomato handling saved tons of tomatoes from damage and spoilage. Heinz had ketchup-manufacturing plants in Salem, New Jersey; Grand Rapids and Holland, Michigan; and Muscatine, Iowa. Heinz and Mueller continued to improve the incoming tomatoes, working on seed production. They increased the pulp content and were able to take apple pulp out of the recipe. Through product development and process enhancement, Heinz held on to over 50 percent of the ketchup market.

Even with the business crisis and civic challenges of 1907, Heinz found

The automated preserve department in 1912 (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 12).

time to make a European trip while Howard Heinz filled in for his father on many of Pittsburgh's civic committees. H. J. Heinz was looking to make a third legacy after founding a major company and winning civic reform in Pittsburgh. Heinz was rapidly becoming the icon of the world Sunday school movement. The main motivation for the trip was an international convention of Sunday school advocates. In 1907, H. J. Heinz was president and a director of the Pennsylvania State Sabbath School Association, an executive director of the International Sunday School Association, and on the executive committee of the World Sunday School Association. In May 1907, 1,500 World Sunday School Association delegates came to a convention in Rome's old Coliseum. The membership in America had reached 14 million in 1907 and about 7 million in the rest of the world. The convention looked to expanding its message to Japan and China. The expansion to Asia was the vision of H. J. Heinz. Heinz persuaded the executive committee to start planning a grand world tour of key members to take place in 1913. This 1907 trip concluded with his usual trips to the health spas of Germany and a visit to pet project—the

London branch. Heinz's own board had cautioned him to go slow in developing the London branch, but H. J. pushed ahead.

By 1909, business conditions were improving for the country and the Heinz Company. Heinz expanded aggressively in the Canadian market, opening a manufacturing plant in Leamington, Ontario. In the 1890s, Heinz had been contracting fields for cucumbers, tomatoes, and beans. Leamington had been a salting station for pickles since 1900, but its location in the Canadian breadbasket made it ideal for a Heinz manufacturing plant. The area had also helped supply Heinz's earlier entry into the baked bean market with its rich navy bean crop. The Leamington plant started in 1909 with the production of pickles, vinegar, and beans. In 1910, Heinz started ketchup production and in 1912 cooked spaghetti and tomato soup. It was one of Heinz's first fully integrated plants able to go from vine to bottle in a matter of hours.

In 1909, Heinz also started full production in peanut butter and introduced the campaign at the Chicago World's Fair. Beechnut had just started national distribution of peanut butter, but within two years, Heinz would be the largest manufacturer of peanut butter. Heinz's quality of peanut butter was exceptional, with the bitter hearts being removed and using a blend of Spanish and Virginia peanuts. His product was purely organic with only salt added. Peanut butter offered an alternative source of rich protein in tough economic times. The success of peanut butter demonstrated the brand power of the Heinz name. From 1909 to 1920, Heinz Company was at the height of its brand power. Heinz also invested in expanding his line of soups, which were popular with the working class. Soups and baked beans were products that were preserved in tin cans and had long shelf lives. Heinz had some of his strongest competition in Campbell's Soups. Still, Heinz had the best national distribution system. Campbell's Soups made big gains in the soup market through the first two decades by a full focus on soups. They emulated Heinz's brand advertising and applied product variety. Heinz moved into other sauces such as Mandalay Sauce, a blend of fruit, vegetable, and spices. Promoted as having an oriental origin, Mandalay boomed in sales.

The first decade of the new century tested some personal beliefs of H. J. Heinz. Heinz had always been active in the temperance movement, and prior to the 1890s, he had aggressively resisted having his products in saloons. But the market and nature of saloons had changed. Hotels often had saloons, and even grocers became attached to saloons. Big distributors who purchased Heinz products also supplied saloons. The temperance movement, which Heinz had supported from the 1870s, became more focused on saloons; and by 1900, the Anti-saloon League had emerged as a political force. Heinz never varied on his stance and continued to

finance temperance groups behind the scenes, but he did distance himself from the Anti-saloon League. Still, competitors used rumors to link Heinz with the Anti-saloon League, which created boycotts among grocers and saloon owners. Heinz was always walking the line between his strong support of temperance and his business relationships with those who also sold liquor.

On a personal level the first decade of the century was a time of transition from Heinz's daily management of the company to other interests. He continued to travel extensively both domestically and internationally. He developed a true passion for golf. While never having the passion for cars that his son did, he enjoyed the drive to the New Jersey coast. He purchased a number of automobiles and joined the Automobile Association, which was a club at the time. He loved also to babysit his grandchildren at Greenlawn. Irene Given had given him Sarah in 1904 and John L. in 1907. In 1908 Howard and Elizabeth gave him Henry John Heinz II. He loved having the kids stay for extended periods as well as their mothers. He was a tough disciplinarian with his grandkids, as he had been with his brothers and sisters. For his part, Howard tried hard to steer H. J. to his role of grandfather, as Howard expanded his authority in the management of the company. H. J. Heinz did slowly back off, but he was always capable of penning a stern directive or reprimand of his son or other family managers. H. J. Heinz loved to second guess decisions, and while this was frustrating, Howard learned to deal with his father. Clarence struggled as a member of the board of directors, but it was

An employee suggestion box, 1904 (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 7).

London office travelers, 1911 (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 7).

becoming clear that he didn't really have a future in the company. Clarence's continued friendship with H.J.'s wayward brother Peter did not please H. J. Heinz. Clifford, his youngest son, seemed content to remain in a secondary role on the board of directors. Clifford became an expert equestrian and often traveled to horse shows and competitions. Clifford liked the social life of his position and was followed by the press. Many of his love affairs made the social pages of national newspapers. On November 7, 1907, he "ran away" to marry a nurse. H. J. found out about the marriage through the *New York Times*.[8] H. J. seemed much more forgiving of Clifford than his oldest, Clarence. His son-in-law, John La Porte Given, would try his hand at Heinz company management only to be broken by the family. Management was always tightly held by H. J., Howard, and Mueller.

Heinz clung tightly to several areas. First was the sales operation. Heinz received weekly sales-by-product reports. Heinz personally attended national and regional sales meetings. The London branch would remain

a type of personal project until his death in 1919. He maintained an annual inspection of all his factories and most of his branch offices. He, of course, might get involved in anything at anytime, but his numerous trips, collecting, grandkids, and Sunday school work slowed him. H. J. alone developed annual financial results, a tradition that Howard continued after H. J.'s death. Most of the recipes were only known to the troika of H. J., Howard, and Sebastian Mueller. Heinz still loved to purchase corporate horses from time to time. He loved to spend time talking to workers as well. Heinz, always the attentive listener, might blast off a letter to Howard or Mueller to correct some employee wrong. He did start to spin off his civic duties to Howard and Sebastian. Heinz more than any other executive created the position of chief executive officer. This position for Heinz was highly strategic and included civic and community relations.

11

Industrial and Christian Sage

In 1910 H. J. Heinz Company was America's largest international company. The manufacturing component was enormous, with 40 million tin cans and 20 million bottles being made annually. The main Pittsburgh plant took up 160 lots with its eighteen brick buildings. The Pittsburgh plant was a major railroad center itself, handling 15,000 railroad cars a year with the capability to handle 52 cars at a time. The Pennsylvania Railroad and the Baltimore and Ohio Railroad directly linked it. The plant had fourteen miles of connecting railroad tracks. Heinz owned hundreds of pickle tank cars, vinegar tank cars, and a full line of refrigerator cars. Its river docks were the busiest in Pittsburgh, and an international port. Visitors to the plant reached well over 40,000 a year. Heinz had fourteen branch factories in the United States, Canada, and Europe as well as over sixty salting stations. Raw materials came from the world over: currants and raisins from Greece; olives from Spain; cauliflower from Holland; beans from Canada; mustard and olives from California; apples from Michigan; and salted cucumbers from 10 different states. Allspice, ginger, pepper, and cloves came from the world over. The vinegar demands of the Pittsburgh complex required the supply from five branch vinegar operations. Refined sugar came in at 20,000 barrels annually. There were 41 branch warehouses as well.

In his last decade H. J. Heinz was corporate sage, empire builder, the builder of a lasting legacy, world traveler, Sunday school promoter, grandfather, and curio collector. He remained the CEO and strategic director of the company. H. J. Heinz's attention turned more and more to his European operations, allowing his son Howard to run the North American operations. H. J. Heinz remained active in the sales function throughout the company; it would remain close to his heart to his death in 1919. H. J., however, still guided the long-range investments, which called for

more integrated plants. Heinz felt that local manufacture was the key to lower costs and higher quality. Fremont, Ohio, would be the flagship in ketchup production, and Holland, Michigan, would be the flagship for pickles. Finally, Heinz would start the planning for a world-class manufacturing plant in England. H. J. Heinz looked to travel more and started to turn his civic duties over to Howard, Mueller, and his financial officer, W. H. Robinson. He relaxed more, played golf, and joined Oakmont County Club. He was said to rarely finish eighteen holes, always moving on to some other project or engagement. He was also a member of Duquesne and Pittsburgh Country Clubs. He never relinquished his positions on the national and international Sunday school associations.

Some might say that H. J. Heinz mellowed out, but that was certainly not the feeling of son Howard, who received managing guides from him, or his branch sales offices, which might get a price change notice. H. J. going direct to the branch offices without notifying Howard was extremely frustrating. Howard responded with an equal amount of patience. To some degree, family and executives had learned to manage H. J. Heinz. Mueller had found ways to keep him tied up in farm visits and visits to the sales office. It had become a tradition that on the return from a Europe trip, he was given a country-wide tour of American operations. Howard and Mueller had a great working alliance that allowed them to low key or even hide things from H. J. The problem was that Heinz's creative genius did not age, and ideas flowed as in his youth. He stayed close to the books as well. He did seem to ease up on his temperance stance, not from a personal belief, but as an area of preaching to employees and customers. He appears to even have eased up on salesmen, who in the early days were required to take a temperance pledge.

Starting in 1910, H. J. Heinz seemingly launched a second career with his missionary work. He built a major house for poor children named after his wife, Sarah Heinz. He served on several executive committees of local, state, national, and international Sunday school associations. From 1910 to 1915, he took annual world tours, two of which lasted six months. He poured thousands of dollars (millions today) to personally support these tours. He set aside two weeks every year to visit the health spa at Bad Kissingen, Germany. He talked about and acted on completing his many collections. When he wasn't in Europe or Asia, he was traveling to his factories and farms across the United States. Slowly, painfully, and dragging his feet, H. J. turned more responsibility for the company over to Howard.

The second decade of the century found Heinz's business booming in ketchup, pickles, soups, and baked beans. While traveling more, Heinz kept the strategic decisions to himself. It was clear that the complex at

Pittsburgh could not support all the production needed, especially ketchup production because of the losses in transporting ripe tomatoes to Pittsburgh from Ohio fields. The fully integrated Leamington plant was a success, and field to bottle yields were extremely high. H. J. Heinz started a personal search for similar places that could go from vine to bottled product in hours. Ohio was the heart of tomato production at the time, and relatively close to Pittsburgh. Bowling Green, Ohio, offered Heinz free natural gas to build a plant there. Bowling Green was established in 1914 as a field to bottle operation for ketchup. The Bowling Green operation was where Heinz started tomato seed experiments. Bowling Green also had a labor surplus of women after the failure of the local glass and natural gas industry; but during tomato picking season, Heinz had to bring in "migrant" workers from West Virginia. This industry may have also attracted some of the first Mexican migrant farmers to the area. Heinz built housing and fed the workers during these weeks. Heinz also started a ketchup operation in nearby Fremont, Ohio, which would turn out to be the ketchup flagship in years to come.

The Bowling Green, Ohio, and Muscatine, Iowa salting stations started to use true migrant farmers to pick crops. Heinz had built housing at both operations by 1911, and Mexican workers were coming in on a seasonal basis. Both locations had extensive railroad connections, allowing for what would be called "rivers of steel." The influx of seasonal Mexican workers seems to have started slowly, but increased to a major component of the seasonal work force by 1920. There is no evidence that Heinz promoted this directly, but he clearly encouraged it with housing and meals as part of the job. The Midwest vegetable farms did not have the local cheap labor available to harvest huge fields of tomatoes and cucumbers, so migrant workers were necessary. Harvesting was the major cost in the production of pickles, ketchup, and baked beans. The Republican administrations of the time supported the use of immigrant temporary labor. The wages were low, but Heinz's paternal approach applied. Many Mexican workers stayed on, finding work in the main Heinz plants year-round.

Heinz had become the most recognized brand in pickles, ketchup, peanut butter, relish, soups, and baked beans throughout America and Britain. He had well over 57 products (probably closer to a hundred) in 1911. The advertising burst of 1907–1911 had made Heinz the world's largest food processor. He had proven his ability to introduce many American products in other countries with great success using his brand strategy. Heinz also had success in bringing some oriental sauces into the American market. He even tried to bring British products such as plum and date pudding to the United States. The United States often proved resistant to such products, but Heinz was a powerful brand name.

Heinz had not lost his flair for product development during the decade. He introduced products such as cream of pea soup, plum pudding, salad cream, 57 Sauce, cream of celery soup, canned ripe (black) olives, date pudding, canned spaghetti with cheese, and sweet mustard pickles. He introduced a grapefruit marmalade using imported Cuban fruits. He offered jellies and preserves in cans, bottles, and crocks. From 1912 to 1914, the sales of canned spaghetti boomed, and almost equaled baked bean sales briefly in the United States. This coincided with a huge influx of Italian immigrants. In 1912, Heinz opened an olive oil manufacturing plant in Corning, California. Corning had been growing Spanish olives since the 1890s, and its railroad connections made it ideal for Heinz's growing segment of canned olives, stuffed olives, and olive oil. The Corning plant would supply mainly the ripe black olives, while the Spanish operation shipped green olives to Pittsburgh to be stuffed and bottled. With two olive oil plants (Spain and Corning) in operation, Heinz looked to product development to expand the uses of olive oil. He pushed the use of olive oil and malt vinegar on lettuce as a family treat with dinner. Heinz invested a good deal of advertising in "medical" olive oil. Pressing olives using rotary horse-driven crushing wheels made the most olive oil, but the horses were a source of dirt and bacteria. Heinz used sterile mechanical presses to make olive oil and promoted it as "pharmaceutical grade," selling bottles to druggists. He published a booklet on the medical uses of olive oil. The booklet promoted its use in place of cod liver oil as a laxative. Other suggested uses included relief from muscular pain, blood improvement, skin moisturizer, and a cure for pain.

Mayonnaise and salad cream offered new uses for olive oil. In 1913, Heinz launched mayonnaise as one of his varieties. Mayonnaise is an emulsion of egg yolks, olive oil, and sometimes lemon juice or vinegar. Sometimes small amounts of mustard are added. Mayonnaise actually is named after the Spanish port of Mahon. It found popularity in Europe during the early 1800s. Mayonnaise was probably French in origin, but it was two German immigrants, Nina and Richard Hellmann, who made it a staple in America. They starting using it on sandwiches in their New York delicatessen in 1905, and its popularity boomed. In 1912, Hellmann went into the production of bottled mayonnaise for East Coast distribution. Heinz moved into the market in 1914, but Hellmann and Best Foods controlled it. Heinz's salad cream introduced in 1890 had little success. Heinz, however, was the first to bring it to the British. Heinz worked with C.E. Helen to produce a lighter version using vinegar, which became known as Heinz Salad Cream. Helen marketed it as a low cost alternative to mayonnaise with amazing success. Heinz Salad Cream joined baked beans and cream of tomato soup as British traditions.

In 1911, Heinz planned a six-month world tour starting in January. He usually traveled with his valet, William Whatley, since the death of his wife, but he joined with friends or family members on longer trips. On this trip, Mr. and Mrs. John Bindley joined him. Bindley was a Pittsburgh capitalist who had grown close to Heinz on the various civic committees. At the time, John Bindley was president of Pittsburgh Steel. This trip would focus on Heinz's various collections, including a trip to Egypt as president of the Pittsburgh branch of the Egyptian Exploration Fund. Heinz's European trips were always a combination of family, business, and curio collecting. This trip was heavily focused on collecting, as Heinz, now 66 years old was talking about filling out his collections. Heinz's curio collections were overall somewhat tacky and personal compared to the great art collections of neighbors such as Frick and the Mellons. Heinz loved little souvenirs. He collected things like canes from all over the world. In certain collections such as carved ivory, he was considered a world expert. He had even added a room to Greenlawn to house his ivory collection, which he called the "Temple of Ivories." Heinz and his houseman and curator Otto Gruber (Heinz called him "Otto the Silent") would spend hours rearranging the collection. Heinz and Otto both loved the collection and the two became close friends with Otto living vicariously through H. J.'s collecting trips. Other than his watches and ivory collections, themes were difficult. In 1909, the Carnegie Museum had featured his watch and timepiece collection. Heinz turned the collection over to the care of the museum, and it remains today one of the Carnegie Museum's most cherished collections.

Heinz also loved to go to various German spas for curative rests. This longer trip allowed Heinz to spend two weeks at Bad Kissingen, Germany, which had become a regular visit for Heinz. Kissengen was a beautiful town in Bavaria nestled in the Franconia Valley. The valley was also known for its horse farms, which Heinz also loved to visit. The mineral springs were famous as a cure for illness. The hotels were some of the finest in Europe. Concerts were given throughout the day; Germans believed music was extremely healthy (a practice that Heinz emulated in Pittsburgh with lunchtime band concerts). It was a resort of Europe's wealthy since the 1600s. In the early 1900s, its popularity grew with wealthy German-Americans such as Heinz and beer king August Busch. Health "specialists" opened centers that catered to the health concerns of the rich. Bad Kissingen had a long list of patrons including Queen Elizabeth of Austria, Tsar Alexander II, Otto Von Bismarck, George Bernard Shaw, and Leo Tolstoy. Heinz also set a time for portraits, clearly looking to his legacy.

Heinz's favorite stop in Bad Kissingen was the exclusive and costly sanatorium of Doctor von Dapper-Saafels. Most of the sanatoriums of the

area were based on a unique spring and special claims of the health benefits. Various spring waters were bottled, such as Rakoczy, Pandur, and Max; Dapper-Saafels had the most popular Rakoczy water. Rakoczy's curative properties were hailed throughout the world. Dapper-Saafels attracted visitors from Japan, China, and Africa as well as Europe and America. Almost annually from 1901, Heinz spent two weeks a year at the Bad Kissingen sanatorium of Dapper-Saafels. It was a rigid regimen of creamy meals, mud packing, baths, brandy rubdowns, music, Rakoczy and Max water, and steam baths. Visitors were urged to gain weight during the stay. Heinz noted in his diary that "am expected to consume twice as much butter than bread," and "I manage to eat one-third of a pound of butter per day." Heinz had complete faith in the treatment.

A key business stop on this 1911 trip was at the London branch factory, which had been Heinz's pet project since 1905. Heinz's company had been a model of international business, slowly integrating product and management of the original Batty Company. H. J. Heinz had hand picked the managers: C. E. Helen, the charismatic manager of the branch; Angus Stott, second in charge and manager of manufacturing; and G. T. Chadney, financial watchdog. The London branch had exceeded all sales projections and had built lasting market dominance in baked beans, salad cream, and ketchup, which remain to this day. During the 1911 visit, Heinz announced that he would turn full operational control of the branch over to Helen. Through loyalty and hard work, Helen had won the founder's confidence. H. J. also felt Howard Heinz was ready to take over the corporate control of Europe. It was also an example of H. J. Heinz preparing for an orderly transition after his death. Heinz was the rare executive of the period in this type of future thinking.

Heinz not only traveled internationally, but also continued to travel when he returned to the U.S. With the heart of a traveling salesman, he found ways to combine business with pleasure. In 1912 he took a cross-country train trip to visit his many plants and fields. One business part of the trip was to look at olive fields in California for another olive oil plant location. Corning, California, would be chosen for this plant. He combined the trip with some campaigning for Teddy Roosevelt. Heinz had built a friend in Roosevelt during the fight for food purity. He believed in Roosevelt's trust busting and shared his belief in American industry and its need for some government overseeing.

Howard Heinz and Sebastian Mueller encouraged these trips, so that they could expand their quality control department. It was in 1912 that Howard brought in a young bacteriologist, Herbert Riley. Their operating management alliance also increased as cousin Fredrick Heinz's son Charles was promoted to manage the Pittsburgh plant.

In 1913 Heinz launched his most extensive world tour yet—a six-month tour of 6,000 miles to include Europe, Russia, China, and Japan that would cost him $30,000 (about $550,000 today). Heinz could pick up the expenses of many of the delegates as well as the cost of bibles and supplies. He had been planning this trip for years and it was to be first-class. The main focus of the tour was to explore the expansion of Christian education in the Orient. His had the Orient Commission chair for the World Sunday School Association and had proposed the trip to the association in 1905 and 1907. The tour was in every way grand with a combination of teachers, businessmen, and Sunday school superintendents. Heinz took two family members, Henry W. Heinz (son of brother John) and son Clarence Heinz, who was now 39 years old. It was probably an effort to interest son Clarence in Sunday schools as a project, and maybe rebuild a damaged relationship. Clarence had all but retired from active service with the company. He was no longer capable mentally or physically of meeting the challenges of a managing son in Heinz Company. H. J. had come to accept this fact and started to try to interest Clarence in other things. This probably was out of a bit of guilt, since his demands had broken Clarence, or at least most insiders felt so. Many even considered Clarence an invalid, although he would often travel with his father from 1913 on. The youngest son, Clifford (now 29), had been asked to go on the trip, but preferred to stay and work at the Pittsburgh plant. Howard was happy to see his father take on a new project outside the company and hoped for an improvement in his father's relationship with Clarence.

In February of 1913, the Heinz Pittsburgh group, including his valet, left by train for San Francisco. The itinerary of this trip was more focused on his Sunday school missions and less on business. The trip had been planned for years by the World Sunday School Association, and the full group numbered over 30. Plans for the crossing of the Pacific on the *Tenyo Maru* included lessons in Chinese and Japanese language and culture. Often Heinz planned his trips to every detail, and much in the character of Jules Verne's Phileas Fogg in *Around the World in Eighty Days*. Heinz also never missed an opportunity to send Howard a telegram on some point of managing the business. Howard and Mueller did take the opportunity of H. J.'s long trips to hire more chemists and apply more chemistry in the operation. Both Howard and H. J. realized that change had to take place. H. J. Heinz wrote Howard about it: "You may think that at my age I am rusty. My friend John Wanamaker, when his son leaves for six months, runs both establishments as well as in his fifties. He is only seventy-seven years young this coming June. Some of you will be in my class in years some day and then you will think of these things."[1]

Howard could be aggressive, but he knew when obedience was required. He also knew that his father was more and more distracted by these world trips.

One of the Pittsburgh contingent was Heinz's friend, lawyer, neighbor, fellow association member, and fellow Pittsburgh Chamber of Commerce member James Wesley Kinnear. James Kinnear was a key part of Heinz's tour group, being both an executive and a Sunday school superintendent (Lincoln Avenue Methodist Church). Kinnear had worked on the Chamber of Commerce as a city reformer with Heinz and on the 150th Pittsburgh Anniversary Committee. Heinz wanted to bring the best business talent to bear on this new goal, and in the last ten years Heinz had grown very close to Kinnear. They also explored business opportunities and government ties in China and Japan. H. J. and Clifford were constantly toting boxes of products into hotels and on to trains. Heinz would always be a salesman, no matter where he traveled.

They landed first in Japan on March 18, 1913. The group visited major cities such as Hiroshima, Nagasaki, and Tokyo. Japan's Christian minority consisted of a mere 65,000, but Heinz, the industrialist, commanded the attention of city mayors and chambers of commerce. They also dined with the prime minister. The group spent almost a full month in Japan, as Heinz had believed it to be the most fertile for expansion. The group next moved on to Korea, which was under the rule of Japan at the time. In Korea, the group was surprised by a rally of 60,000 in Seoul. China was next; the Chinese were building trade relationships with the United States. Heinz had agencies in both Japan and China, but it was in China that he saw his products on display in markets. This was quite satisfying for Heinz, who had been trying for ten years to establish a business in China. Heinz had used extensive tasting displays to break this much different market. He found China much less open to his Sunday school missions. Heinz and his party also did a great deal of sight seeing. At one point he sent home a brick from the Great Wall of China. As the group moved into Russia, they entered a country torn by political struggle. There were secret police everywhere, and there were no welcoming parties. Finally, Heinz went to Zurich in June for the International Convention of the World Sunday School Association. Here he was elected chairman of the executive committee. Heinz's proposal to hold their next convention in Japan was passed.

Heinz returned to Pittsburgh in August overwhelmed by his new association duties, to the delight of his sons. H. J. hired a full time secretary and added an office at Greenlawn to handle the association's business. H. J. also got involved, at the request of Howard, in an extension of the Covode House, which Howard had started for children. H. J. Heinz

proposed a Sarah Heinz House similar to a YMCA. It was truly a memorial to his wife Sarah, who had worked hard for the Children's Aid Society throughout her life. The house would have a swimming pool, library, gymnasium, clubrooms, and workshops. The house was organized around a number of various clubs for girls and boys. Heinz modeled it after the successful Kingsley House, which had opened in 1895. The Kingsley House had been the brainchild of H. J. Heinz's neighbor Dr. George Hodges, who was pastor of east Liberty's Episcopal Calvary. Neighbors Mellon and Frick had also backed the Kingsley House. The Sarah Heinz House was similar, but more focused on Christian virtues. Clubs centered on activities such as swimming, reading, evening fellowship, music, and sports. Christian principles and temperance were general membership requirements. There was a fee of 10 cents to $1.80, but often the clubs helped pay for children who could not afford the fee. Heinz hired a director and a physical director, but the clubs set their own activities and schedules with older children helping out. The location near the plant had become the real problem.

The industrialization of Pittsburgh's North Side brought with it many of the evils of capitalism. The old German neighborhood became run down, and immigrant families packed into old houses. Some major factories such as Westinghouse Air Brake had moved out of North Side, and the Western Pennsylvania University (University of Pittsburgh) had moved out to Oakland. This had been the result of the annexation campaign of Heinz, which made Heinz feel a bit guilty. The old Millionaires' Row was also declining as the wealthy moved to Pittsburgh's East Liberty and the new German area of Oakland. Steel jobs moved up the Monongahela Valley, leaving unemployment in the North Side. Houses became overcrowded and run down. The strong streetcar system also allowed the middle class to move farther north to escape the dirt, smoke, and crime of the city. The houses were also being used for prostitution and saloons. Gangs were common in the streets. The neighborhood environment would be a major problem for both the house and the Heinz plant that was attracting 40,000 visitors a year. Heinz was a lover of Pittsburgh, and he was determined to improve the city rather than leave it.

Heinz went to get advice from real estate agents, and they advised him that the situation was irreversible. Heinz, however, believed the location needed to be improved. He worked with friend and lawyer James Kinnear to form Progress Realty Company. Both had experience in such real estate improvement efforts as the upscale Oakland and East Liberty suburbs. This real estate effort would be a model for future civic-minded industrialists. Progress Reality started to purchase hundreds of houses. A block was cleared for the building of the Sarah Heinz House, but other

houses were renovated and rented out. The effort turned out to be highly successful as well as profitable. Heinz had upgraded the area surrounding the factory.

The housing project and the building of the Sarah Heinz House through 1913 into 1914 consumed H. J. Heinz's attention. He continued his schedule of monthly Sunday school meetings in Philadelphia and traveled for the executive committee meeting of the World Sunday School Association. Heinz tried to tie in branch and sales area visits, but more and more these charitable projects took the majority of his time. The period allowed Howard to function as the company leader. Clifford had also found a niche as a board member working for Howard. H. J. spent what remained of his time on sales and the growth of his European operations, which Howard was also being brought in on. Unlike H. J. Heinz, who had to evolve into the CEO position, Howard seemed born to be a CEO. Of course, Howard had been groomed by H. J. to do just that. New products continued to flow from H. J.'s creative mind. Canned spaghetti with cheese was one of these. Heinz followed Franco-American and Van Camp, but Heinz had better distribution, and canned spaghetti was a huge success. Canned spaghetti was perfect for the booming Italian immigration of the period. The market grew so quickly that Heinz started planning a separate spaghetti building to support production. Another product expansion of 1913 and early 1914 was cream of celery in their soup line. Heinz introduced a steak sauce known as 57 Sauce, which also found great success. Still, at the heart of the business were pickles, ketchup, and baked beans.

In the summer of 1914, H. J. Heinz took another European tour starting with his annual two-week stop in Bad Kissingen. He initially started the trip with his valet and William Hartshorn, publisher of the women's magazine *Priscilla* and current president of the International Sunday School Association. This trip centered more on relaxation instead of Sunday school or business, but Heinz, of course, stopped at his London branch. The London branch in 1914 was in an extended boom. Sales had almost tripled in four years under the management of C. E. Helen. Baked beans had become wildly popular thanks to the marketing campaigns of Helen. He had actually created a national love affair with canned baked beans. Helen was having the same success with ketchup, and the main issue to be discussed was expansion of branches, warehouses, and the possibility of a new manufacturing facility in England. Business was cut short as Heinz was anxious to get to Bad Kissingen. Shortly after his arrival with William Hartshorn, Heinz found himself caught in an international crisis.

In June when Heinz had arrived in Europe, papers carried the news of the assassination of the Austrian archduke by a Serbian nationalist. This

seemed a small thing to the Americans. However, it led to the declaration of war by Austria on Serbia on July 28, 1914. Within a few days Germany, France, Belgium, and Russia joined in. Heinz and Hartshorn were caught in the middle of World War I. Hartshorn took notes of the events in the hope of publishing an article in his magazine upon his turn. For two weeks Heinz was trapped in Germany at the spa. He was amazed, as Germans seemed to rush to war. Banks refused payment on his notes, but the foreigners at the spa pooled their money. He finally got a message out to Howard of his status. He included instructions about the brickwork of a new warehouse. For a man of almost seventy, Heinz seemed undaunted. With the help of the American consul, he got out of Germany to Holland.

When Heinz got back to Pittsburgh, the pickle market was booming. European countries started to buy pickles for the troops. Pickles were rationed throughout Europe during the war period of 1914–1918. Pickles had been a favorite troop ration from the days of Napoleon. Heinz shipped as much as he could from America, but as the war continued, the shipping lines were closed down. Heinz's European operations not only boomed from pickles, but also sales for tinned baked beans and plum pudding, which were staples for British troops during the four years of war. As meat was reserved for the troops, baked beans became a key protein alternative for the patriotic public. C. E. Helen showed to be part logistics wizard as he kept the London branch moving during the war with limited capacity of the Batty plant. With all the problems, sales of the London branch almost tripled from $563,124 in 1913 to $1,388,799 in 1918. The period from 1917 to 1918 showed no growth, as supply was shut off, but the $1,338,000 level was maintained. Some of the lack of growth in 1918 and 1919 was a European weariness with tin can products during the war.

After H. J. Heinz had returned home, his son Howard planned a major surprise party for his seventieth birthday on October 11, 1914. The great event was held at the Hotel Schenley. The party included many of the managers of the company, Pittsburgh dignities, and friends such as John Wanamaker. It was, however, H. J. Heinz's own words that were best remembered: "Our birthdays after 50 come and pass too rapidly. Andrew Carnegie once said that the forties were the years of meditation. I would add to this, that the fifties and the later years are the years of philosophy. If we do not by this time philosophize, we are not getting out of life what we might. There are three things men should do in this life, and they are about all there is to life. The first is to plan for the comfort of our loved ones, the second is to so live that we may enjoy the respect, the esteem and the confidence of our fellow men. Last, but not least, is to do just one greater thing—live for the hereafter."[2]

12

Final Years

The war in Europe curtailed Heinz's international traveling, although he continued to travel extensively in America. After 1914, Heinz started to improve Greenlawn and its collections. Greenlawn had become a family compound. The staff consisted of seventeen people, most of whom were living at Greenlawn with their families. The cook, four maids, and housekeepers lived in the house, while the butler, gardeners, and two chauffeurs lived in apartments on the grounds. The main staff of seventeen was augmented by an army of assistant gardeners, stable workers, and groundskeepers that went home at night. He had a full-time secretary, George Penniman, for his World Sunday School work. He also had a full-time curator, Otto Grubner, for his home museum, which now was open for daily tours. He redesigned his museum to be completely fireproof. The museum started to offer lectures for local school children. Heinz expanded the conservatory to ten greenhouses. The greenhouses supported some of his personal plant experiments, as well as plants from around the world. Inspired by the nearby Phipps Conservatory, which had opened to the public in 1899, he opened his conservatory to the public. His fall chrysanthemum show became a favorite with the people of Pittsburgh. In 1915 he put much of the grounds into war victory gardens. The garage had a number of cars, including a 1912 Pierce Arrow, a 1914 National, a 1914 Cadillac, 1914 Buick truck, and a 1918 Packard. He had special trees all over the grounds, some from places like the Vatican Gardens. Heinz also maintained a stable of fine horses at Greenlawn.

The restricted travel forced Heinz to get more involved with his grandchildren. He loved to take them on short trips or play with them at Greenlawn. He might even take them for a quick round of golf. Howard and his wife Betsy were frequently at Greenlawn, and Irene and John Given made frequent trips from New York. Heinz often played the role of dis-

ciplinarian for his grandchildren. Many believed that he clearly favored Howard's son, Henry John Heinz II, and was grooming him to take over the company some day. He became more involved with the ten conservatories and thousands of flowers and plants. He worked on the arrangement of his many collections, including the watches and clocks he had given to the nearby Carnegie Museum. Unfortunately for Howard, H. J. was close to the Pittsburgh operation and would often stop by for a visit. No longer handling day-to-day duties, he was free to chat with employees and then tell Howard what should be done to correct a problem. H. J. Heinz's travel and Sunday school involvement forced him to let Howard manage, and Howard had won over the board as well. There was no doubt that Howard was calling the shots. There was some natural tension between father and son, but both understood their roles. Howard, for his part, only wanted to continue profitability, not change the culture or his father's legacy.

Heinz's work with the Pittsburgh Exposition led to his being named a delegate to the 1915 Panama-Pacific Exposition in San Francisco. The San Francisco exposition was a world's fair which celebrated the opening of the Panama Canal. The Panama Canal was a major step towards globalization. Many believe that the Panama-Pacific endeavors ended the Victorian era and augured the modern world of today. In that respect, it was the end of that world where Heinz had made his mark. The Panama-Pacific Exposition would represent a stark contrast to Heinz's first world's fair in 1876 at Philadelphia. Heinz, now seventy, had known a much different world. The San Francisco fair introduced Carter air conditioning and Kraft's processed cheese. The world now had things that were only introduced at the 1876 Philadelphia event, such as the telephone, typewriter, and electrical power. Things such as the automobile, skyscrapers, elevators, electric streetcars, electric dynamos, and wireless radio had not existed in 1876. The Heinz exhibit, which had been a small booth at Philadelphia in 1876, was one of the largest at the Panama-Pacific Exposition.

H. J. Heinz would go with his manager and son Clifford Heinz to the exposition in March 1915. They went appropriately on the *S. S. Great Northern* via the Panama Canal, which had opened in August of 1914. Heinz had passed through the canal a few months earlier while on a South American trip for the World Sunday School Association. They arrived at the exposition in April of 1915. They spent nearly a full month at the exposition. Heinz had never lost his love of these great exhibitions, and H. J. was in great demand for dinner talks. Two Pittsburgh companies took up a large portion of the fair real estate—Heinz Company and United States Steel. Ford had an assembly line demonstration and there was a large model of the Panama Canal. Heinz and the Pennsylvania delegation

would have dinner with one of the exposition's directors who was a great engineer and a future president of the United States, Herbert Hoover. Many of the companies exhibited their version of scientific and social management, for which Heinz Company had been a pioneer in during the 1890s. Heinz was pleased to see that both the YMCA and YWCA had large buildings at the fair. As usual, he took time to visit local and state Sunday school operations. Heinz also visited the three model schools at the Exposition—a commercial business college (such as was pioneered by Duff's in Pittsburgh), the Palmer School of Penmanship (another skill Heinz thought highly of), and Maria Montessori's preschool. There was also an exhibit on social settlement homes, which Heinz had been on the forefront of. The exposition also had a World Bible Congress and Social Christianity Congress. In many ways, this exposition represented many of the ideas of paternal capitalism that Heinz had promoted. He did take time to visit the Corning olive oil operation of the Heinz Company, but he was clearly learning to let Howard run the day-to-day operations and was interfering less. For his part, Howard had proven himself to H. J. Heinz.

The trip back by Union Pacific was detailed by Robert Alberts and illustrates Heinz's unbelievable energy.[1] He went to Omaha to meet with the branch office there. Then he moved on by train to visit his brother Peter and son Clarence in Lake Geneva, Wisconsin. From Wisconsin he went back to Pittsburgh and spent a single day there before going to Philadelphia for a Sunday School Association meeting. After a day in Philadelphia, he went to visit his daughter, Irene Given, and grandchildren Sarah Isabelle (11 years old) and John L., Jr. (7 years old). He stayed a few days, visiting the World Sunday School headquarters. He went back to Pittsburgh for two days before leaving for Chicago to go to an International Sunday School Association meeting. One part of traveling that Heinz missed because of the war in Europe was his time at the German spas. He found Hot Springs, Virginia, to at least offer some of the health benefits; he also increased his trips to Atlantic City to relax. He also traveled to the Battle Creek Sanatorium in Michigan for health breaks.

The years from 1916 to 1919 were as close as he got to retirement. Heinz also had a sense of his place in history and of his legacy. Part of these last years was spent sorting out years of collecting. He worked with his full-time curator, Otto Gruber, and the curator of the Carnegie Institutes, Doctor William Holland. His watches, ivories, and canes were good enough to be considered museum quality. His watch collection included early sundials, 17th century clocks, a rare pocket sundial, a watch made in 1707 for the Emperor of China, and Horatio Nelson's personal watch. His timepiece collection had an organized theme tracing the history of

timekeeping. This timepiece collection remains a popular exhibit of the Carnegie Museum. These collections have been at the Carnegie Institute since 1909. The majority of the full collection was a diverse group of souvenirs. Heinz's house museum was opened more often and Heinz might appear with a few stories. Heinz found not only great enjoyment in collecting, but peace in the endless hours of organizing and cataloging. Most important was the enjoyment that H. J. Heinz derived from handling his many pieces. He spent many evenings with Gruber cataloging and reminiscing. H. J. enjoyed traveling around Pittsburgh, chauffeured in his 1912 Pierce Arrow. He had better cars, but he stuck with his Pierce Arrow, which suffered from endless mechanical problems.

In 1916 Howard had established himself and showed the workaholic attributes of his father. His wife Elizabeth spent much time at Greenlawn with H. J. and the kids. Heinz loved to do things with his grandsons, "Jack" Heinz II and the younger Rust. They rode ponies and horses at Greenlawn. H. J. Heinz in many ways was molding Jack to take over the company. Elizabeth often voiced her concern to Howard that H. J. was spoiling Jack and building his ego to problematic levels. Howard was every bit his father, driving the company and monitoring his charities. Howard, like his father, enjoyed travel and leased a home in Pasadena, California. H. J. continued to visit the farms and branches, but Howard was clearly in charge by 1916. Howard was a modern executive who knew how to delegate and use a strong organization. Like his father, Howard could count on the operational management of Sebastian Mueller. Howard proved better than his father in leading a large decentralized company. Howard also traveled in high society and political circles. Howard became close friends with the Mellon family and built a Florida winter home near the Mellons. This social alliance would be important to the future of the arts in Pittsburgh.

In February, H. J. Heinz left for Florida to meet Howard and his wife. He stayed through March, fishing and golfing. He was a house guest of the Mellon family for a week. In early April, he started to return to Pittsburgh for the second wedding of his son Clifford, who was to marry Sara Moliere Young of the Pittsburgh area. On the way to Pittsburgh, he stopped in Washington, D.C., to see Congress debate and declare war on Germany on April 6, 1917. He returned to Pittsburgh to organize the Heinz Company for the war effort. The war became a personal project for Heinz, his family, and company.

When war came to America in 1917, Howard was to play a critical role. In August, Howard Heinz was named United States food administrator for Pennsylvania and a member of the War Industries Board. Howard had built a strong reputation as an accomplished executive and

had impressed Republican insiders such as Herbert Hoover. His administrative abilities had been made clear in the food purity debates. Howard would once again be teamed up with future President Herbert Hoover. In 1917 he was approaching 40 with an unusual mix of political and industry experience. Howard would spend most of his time in Philadelphia, as the more decentralized company was able to manage itself.

War with Germany restricted shipping and communications with the London branch office. Heinz, however, had a strong and loyal leader in C. E. Helen. Helen and Heinz had already planned the building of a futuristic manufacturing plant in England that had to be put on hold with the war. The war in Europe had been raging since 1915, and by 1917, 90 percent of production at the Batty plant was for the military. By 1917, as America entered the war, the London branch became short on beans and ketchup, which were shipped from America, but maintained pickle production.

In America, the Heinz plants became just as tied to war production. H. J. and Howard took on visible leadership, including war bond drives. Heinz and the Heinz employees were one of the nation's highest war stamp purchasers, and Pittsburgh was third in the nation per capita in the purchase of war stamps. H. J. Heinz personally attended these rallies. What had to be painful for the Heinz family was the war backlash against American-Germans. Even their factories were suspected of sabotage. German socialist immigrants did play a role in anti-war demonstrations, which made many suspicious of anyone with a German heritage. Still, Heinz remained one of Pittsburgh's most trusted citizens, and his war efforts did a lot to turn public opinion favorably toward the American-Germans.

As the war slowed in 1918, Howard was able to get back to Pittsburgh to review the operation more frequently. H. J. had officially retired but still would meet with the board. The war contracts were good business for Heinz Company, and the company's sales increased over a million dollars. The London branch with all its shortages increased sales from $760,490 in 1915 to $1,388,741 in 1918. At the end of 1918, Herbert Hoover asked Howard to become director-general of American Relief Administration for Southeast Europe and Asia Minor. It was a nine-month assignment with headquarters in Istanbul. H. J. Heinz appears to have missed his son a great deal, having learned to trust him to make the board decisions. H. J. continued his travel to Sunday school organizations, and was distant from the company's operating details. From all reports, H. J. was extremely healthy, but his writing had become illegible. His Sunday school secretary, George Penniman, functioned as his personal secretary as William McCafferty was more involved in company

operations. There were extensive letters between H. J. and his son, as H. J. continued an active schedule of church work and personal travel.

H. J. Heinz's 1918 tax return is reflective of his financial prowess. His total income was $433,054 or about 7.5 million in today's dollars. The income came from a rather small $16,500 salary augmented by $325,795 in dividends, $60,012 in interest, and $29,332 from rent on 273 houses. He paid $201,024 in taxes and his charitable contributions were $35,715. Of course, this does not reflect the chartable contributions of the company as the personal expenses, or his personal secretaries to help him as an officer in many Sunday school associations. Heinz also gave much time to many charitable projects.

His death came suddenly after a brief illness. He was even planning a return to Europe a few days before. It is said that he went to the office on Friday, May 9, 1919, and returned home with a cold. By Sunday, May 11, he was confined to bed, unable to go to church. Sunday evening a number of doctors diagnosed him with double pneumonia, and a telegram was sent to Howard in Europe as to the seriousness of the illness. On Wednesday, May 14, H. J. Heinz died. The funeral was held at East Liberty Presbyterian Church, and the burial was at Homewood Cemetery. His legacy lives on to this day. He had defined the new business discipline of marketing, pioneered automated and continuous production, developed the science of quality control, and had formed one of America's truly international companies. His humanitarian legacy is just as powerful. He stood with a handful of capitalists who showed business could have a heart.

At his death Heinz Company had over $17 million in sales throughout the world. The company had over 9,000 full time employees; more than half were in Pittsburgh. Another 40,000 employees were hired during the harvest. Worldwide there were over 1,000 sales representatives, including over 400 travelers. He had 60 branch offices, 45 distribution centers, and 71 salting stations for pickle production.[2] There were over 700 Heinz railroad cars in operation. Heinz was sold in most of the world's countries. The company led the world in pickle, ketchup, and baked beans production. Heinz was the world's best known brand name. The city of Pittsburgh, which Heinz had done so much for, was the fifth largest in the nation. The world knew it not only for steel but also for pickles.

His civic and social memberships included vice president of the Western Pennsylvania Exposition Society and a director of Pittsburgh Chamber of Commerce. He was a director of Union National Bank, West Penn Hospital, and the Western Insurance Company. He had memberships in the Duquesne Club, Pittsburgh Club, and Oakmont Country Club.

13

A Marketing Genius

Heinz stands out as a gifted marketer. He used advertising to great advantage and pioneered many modern approaches. Similarly Heinz pioneered ideas on the role of packaging and was one of the first to patent a bottle design and shape. While he knew the art of salesmanship, he was one of the first to comprehend the idea of a market. He adjusted his package, price, and product to various markets. He truly understood his markets and did not treat them as abstract groupings. Heinz's concept of a market led him to the methodology of branding. Heinz became a national brand name that the customer recognized. He combined trademarks and slogans with perceived product attributes. Heinz saw quality, purity, and convenience as core competencies for his products. Quality extended to the grocer's shelf where bad or suspect product was removed. Salesmen did more than sell; they studied the market and fed information back to the factory. This approach added customization to manufactured products. He believed in vertical integration; he pioneered the idea of supply chain control before Carnegie and Ford. Quality was emphasized throughout the supply chain. All of these advances led to an integrated approach to marketing. The process was designed to the market, not the other way around. Heinz did not revolutionize the crafts system, but he industrialized it, and that was different from the approach of others in the Industrial Revolution.

The difference between Heinz and other quality producers was that Heinz made quality pay. He fully integrated quality production and marketing. He sold quality and consistency for a premium. When he improved canning, he sold the canning process in his advertising. His advertising emphasized his quality and consistency advantage. Salesmen showed grocers how uniform pickle sizes and counts would improve their profits. Business history is littered with high quality producers that go bankrupt.

He commanded a higher price, but he would guarantee his product. He removed bad products from the grocer's shelves at no cost to the grocer. When the market would not support a quality price premium, he graded his product lines. In many cases his quality grading was more a marketing strategy than a process strategy. That is, his bottom level quality was probably beyond any of the top quality grades of his competition. Heinz did not downgrade poor product, he scrapped it.

He understood that customers buy based on value rather than quality or price alone, value being price adjusted for quality. Some customers are willing to sacrifice some quality to get a better price. His price grading strategy allowed Heinz to maintain a large market share with a high average price. His former Boston branch manager and future London branch manager C.E. Helen helped Heinz understand that price sensitivity cut both ways. That is, the highest price in a market is often interpreted as meaning it has the highest quality. When Heinz increased the price of baked beans in Boston, the sales actually rose dramatically. Helen would always hold that brand marketing actually required a high price strategy.

Heinz's concept of market started as a young boy with his horseradish business. The market was not for horseradish, but for high quality grated horseradish. One of the first grocer customers of Heinz noted: "I like to buy from Henry. I always pay a little more than I pay anyone else but what he sells me is not only more satisfactory on the average, but I never lose on anything he sells me." He was selling quality and convenience as much as horseradish. The clear glass package supported the marketing of quality, as did the clear vinegar. He distinguished his product over the competition through its quality. When he started selling evaporated horseradish, he offered a $1000 reward if anyone could find anything other than horseradish. As a boy, he backed his product with a money back guarantee. Heinz used the same marketing concept to move into the highly profitable but highly competitive pickle market. Even in his commodity type products such as vinegar and sauerkraut, he used quality and convenient packaging to conquer his segment of the market. He was the first to package vinegar in convenient bottles rather than barrels. Once he established his quality, he used brand advertising to maintain and grow markets. He was not the first even in pickles to brand products, but he would become the best at it. He was not the first to put pickles in bottles, but he was the first to mass-produce bottled pickles.

Heinz launched a money back campaign at the very start of the company with grocers. His salesmen assured products were checked and labels clean on the grocer's shelves. He believed the consumer should never get a bad product from Heinz Company. At the turn of the century, he took

his money back guarantee to consumers. He was happy to refund their money for any reason. This, of course, was a logical extension of his belief in high quality. Vegetable growers soon found that quality was demanded to supply Heinz. His supply chain reflected his own company values, and to a degree so did his customer base. Heinz would not sell his products to bars or saloons, and even had employees remove products found in saloons. His vision was embodied in his products, plants, employees, suppliers, and customers. He was consistent in applying those principles and all benefited from their application.

Heinz's earliest strategy, besides signs, was the use of "travelers." Travelers were roaming salesmen who went directly to the grocers in small towns. These grocers had never before seen representatives from the food processors. Travelers dusted bottles and cans and replaced dirty labels. The travelers set up high teas or sampling that got free or grocer advertisements in the local newspaper. In 1900 the newspaper reporter of the small town of Uhrichsville, Ohio, noted having attended "high tea at Cumming's Grocery" and using "dainty Havilland China." Travelers carried fine china and silverware with them for these demonstrations. Heinz used coupons as early as 1890 and "trade cards," which were popular to collect. Heinz published recipe books to be distributed at the grocery store. Travelers also maintained "silent salesmen" such as glass miniature barrels of vinegar to be sampled and cracker taste tables. Heinz's spaghetti introduction campaign had expert Italian chefs traveling around to small grocers. Heinz branded products first in the small towns of America, and the Heinz tasting party or tea was often treated as a major town event. Brand loyalty to Heinz products in small town America was often stronger than in Pittsburgh.

Heinz's advertising campaigns set modern principles. In the 1890s, Heinz was offering samples by mail. He prepared company pamphlets on the products. Early pamphlets included the "Heinz Way," which stressed purity and consistency before federal standards were in place. The papers of the early 1900s were full of food purity issues, and Heinz used that to his advantage. His advertising highlighted his factory, products, and employees. The factory was called the home of the "Girl in the White Cap" in the early 1900s. He promoted plant tours and coordinated with the Pittsburgh Exposition to offer tours to out of town conventioneers. He also adjusted his product line for major holidays, adding cranberry sauce and euchred figs for Thanksgiving and Christmas in 1900. Euchred figs, which is old English for preserved, became one of the 57 varieties.

He was one of the largest magazine advertisers by 1895. He supported a number of new magazines, such as *Ladies Home Journal, McClure's, Cosmopolitan, Munsey's,* and *Harpers Bazaar* in the 1880s. These mag-

azines focused on the middle class target audience of Heinz. Many of the advertisements were educational, linking purity to the Heinz name. Heinz's had more success than most because he coupled trademarks, consistent labeling, and logos such as "57 Varieties." Heinz's print shop also produced very educational ads offering possible product uses, recipes, and storage requirements. His print shop was the first advertising department in the industry if not in the country.

The story of the "57 Varieties" is now cloaked in legend. The story goes that while in New York in 1897, riding a train, Heinz saw a sign advertising 21 styles of shoes. The idea of varieties of his products came to him. Heinz wrote that he "jumped off the train ... began work of laying out my advertising plans ... and within a week the sign of the green pickle with the '57 Varieties' was appearing in newspapers, on billboards and on sign posts and anywhere else I could find a place to stick it."[1] Heinz had turned a simple number into an advertisement, which could be placed everywhere. Heinz was one of the first to advertise on streetcars. Cards were painted on the side of streetcars as well as on the inside. The 1897 contract with a Pittsburgh streetcar company called for 2 cents per card per day; Heinz had the additional cost of his art department. He painted signs on any building he could. Heinz's propensity to placing advertising everywhere often could land him in trouble.

Heinz's "57 Varieties" was far beyond a sales slogan; it was a corporate vision. The variety of products allowed Heinz to compete with wholesalers. Early on Heinz moved into the main bulk needs of grocers such as vinegar, pickles, and sauces. Brand advertising put sales pressure from the consumer onto the grocers to stock Heinz products. Variety allowed Heinz to be a manufacturer and wholesaler, which was a pioneering approach. This variety allowed for high utilization of his factories, distribution network, and warehouses. The grocer could get a large variety of products just as he had from the distributor, plus inventory management and even sales help. Grocers also got product advertising and marketing for free. Pulling the grocer into the supply chain allowed Heinz to control prices and his profit margins as well.

Heinz used billboards as early as 1882 to advertise in Pittsburgh, but he limited the advertising so as not to upset the population. There was a great deal of resistance to billboards because it detracted from the beauty of buildings. Heinz had a propensity to go overboard with his advertising. In 1900 he had a thirty-eight foot high by sixty foot long billboard on the Rhine River. At the time Heinz had very little business in Germany, but it was the first part of a name brand strategy. At his old home in Sharpsburg, overlooking the Allegheny River, he put up large concrete letters saying "Heinz 57" on the hillside. The concrete letters outraged

the citizens, but created a lot of publicity. Heinz loved to get locations that had a high volume of passers-by. He put a ten foot tall concrete "57" on a hill in San Francisco bay. Often Heinz would back down on his plans and donate the land to the city. Eventually, the concrete was removed but many believed he got more publicity over the controversy. Heinz ran into a similar problem in London in 1905. He plastered London with twelve-by-twenty-four tinplate signs, and found the same resistance from the locals. Often he rented fields beside railroad tracks to place the simple concrete "57."

Besides signs on his wagons, he even had wagons shaped as ketchup bottles, tomatoes and pickle jars. He had a horse drawn float for parades on which women employees demonstrated the bottling of pickles. He placed large pickles on top of railroad cars and even shaped a refrigerated car like a pickle. His railroad track advertising was even more flamboyant with large hanging tomatoes with "57" or "Heinz" on them. As volume grew in the 1900s, he painted railroad cars that carried his vegetables to Pittsburgh and products around the country. He painted signs along America's busiest railroads. In Pittsburgh it was hard to pass a day without running into many Heinz advertisements. By 1907, the same could be said for the nation. In 1898, his Heinz Pier at Atlantic City was a major attraction with free pickle pins and postcards to send home. Heinz's signs and samples were available at county fairs, community picnics, church picnics, and regional exhibitions. He loved to collect and advertise awards.

A lot of Heinz's success in advertising can be attributed to his New York branch. As early as 1892, Heinz was using souvenirs such as calendars, pickle charms, and pickle postcards at his store displays. In 1892 his advertising budget for New York alone exceeded $10,000 ($185,000 today). A souvenir collector himself, Heinz found thousands of customers who loved souvenirs and curios. In 1893 a simple souvenir had made the Heinz exhibit the most popular at the Columbian Exposition at Chicago. His most famous advertising included the first electric sign in Manhattan at the corner of Fifth Avenue and 23rd Street in 1900 (present location of Flatiron Building). The sign was six stories high and lit with 1200 incandescent bulbs. It flashed on a slow cycle. After a short period of complete darkness, a second advertisement appeared. This arrangement allowed flashing two different messages in a matter of minutes. The electric bill was $90 a night. The "Heinz 57 Varieties—Exhibited Heinz Pier Atlantic City" slogan was displayed. The sign was changed several times. A year later he added an advertisement for the Buffalo World's Fair exhibit. Below the sign was a display room with employees packing pickles in bottles. In the display room a customer could sample products and pick up a souvenir.

The electric sign was taken down in July of 1901. By 1907 Heinz was employing flood lighting for his railroad track billboards, another advertising first. For the 1915 World's Fair, he built a thirty foot high sign flashing "57" on San Francisco Bay.

Another attraction in the New York exhibit room was a 12-foot by 20-foot painting known as *Custer's Last Rally* by the well-known artist John Mulvany. Heinz had purchased the painting in 1898 for $25,000, and its popularity proved well worth the investment. Walt Whitman hailed the painting as a treasure in 1882 in one of his works: "I could look on such a work at brief intervals all my life without tiring." Heinz used the painting as a traveling attraction at regional and local fairs. His use of two women employees packing pickles was a favorite advertisement. He also added photographic slide shows of the Pittsburgh factory. As early as the 1880s, he had floats built with pickle packers for parades. These types of unique advertisements contributed to his dominance as a national brand. And Heinz was the largest advertiser in his industry, if not in the country, by 1901. It would have been difficult to avoid a Heinz sign in any American city or on any railroad trip of more than 25 miles.

The advertising classic of the Heinz Company was his pier at Atlantic City. Heinz made this a tourist attraction on the level of Hershey Park today. Heinz combined everything he had learned from his many world's fair experiences. Heinz had taken his family, as did many western Pennsylvanians, to Atlantic City in the summers. It was one of America's greatest tourist attractions of the time. It was a must visit stop with samples, art, sculptures, curios, souvenirs, motion pictures, lectures, and paintings. He brought his painting of *Custer's Last Rally* to exhibit at the pier. The popularity and draw of the painting encouraged Heinz to hire Mulvany to make a life-size replica for his London office in 1900. There were demonstrations on cooking, endless slide shows, and sampling of all products. It was overdone but extremely popular, and an extravagant promotion that paid huge dividends. During the season over 15,000 came to the pier daily. While one could buy Heinz products, it was a commitment to brand advertising, and one of his most successful.

By 1900, Heinz had a large print shop and staff of artists. Writers were also added, making the first corporate advertising department. This was one of the few departments where his son Clarence Noble found some success. An artistic strain seemed to surface in every generation of the Heinz family, and Clarence was the gifted one in his. H. J. Heinz's creativity surfaced in the application of art in advertising. None of his competitors was as dedicated to print advertising, and few understood Heinz's brand strategy. The print shop also painted wagons, made streetcar signs, and train car signs. Many times the print shop developed beautiful pieces

of art for Heinz products. The print shop also created new labels and endless literature, posters, signs, and pamphlets. Heinz pushed court cases to protect labels and his trademarks. In the Supreme Court, he won copyright protection of labels.[2] The print shop handled the literature mailing. From the 1890s on Heinz magazine advertisements encouraged the reader to mail a postcard for literature and even free samples. These were creative and novel approaches, far ahead of the competition. Heinz developed the story line advertisement to support specific campaigns. The story line advertisement offered a discussion of product benefits or the history of the product. Heinz often launched coordinated and targeted advertising for a product or product line. This included literature on "Kitchen Tips," "The Spice of Life," and "The Joy of Living."

The use of recipes had always been a fundamental part of the Heinz's approach. Recipe books were offered in magazine ads and back labels. The use of recipes had been very successful with products like baked beans. Heinz also launched a salad recipe book in 1912, which used Heinz products including vinegar, olive oil, relishes, and sauces. The salad book featured chef recipes from the great hotels such as St. Regis, New York; The Palace Hotel, New York; Alexandria, Los Angeles; St. Charles, New Orleans; and New Willard, D. C. To support the salad campaign, Heinz used fancy table bottles of oil and vinegar. Heinz did more than anyone to make salads a common feature of the American table. Heinz also used chefs to introduce his spaghetti. During the 1910s, chefs gave tasting parties in major cities.

Heinz pioneered the use of small window cards (actually above the window on the inside) on the streetcar system in the late 1890s. Streetcar advertising was the model for today's use of bus signs, which Heinz also pioneered. Until Heinz's success, few businessmen saw the advantage of such brand advertising. Heinz found an apostle in his British manager, C.E. Helen, who in Britain had two seventeen foot arms coming out of a field holding a Heinz pickle. No company at this time invested such money in advertising as did Heinz. It can be roughly estimated that Heinz's advertising budget approached 20 percent of sales.

One of the lesser strategies of brand advertising was going direct to kids. Heinz proved to be far ahead of cereal companies in this long-range approach. In an era before television, Heinz created a series of coloring books for kindergarteners. These coloring books introduced in 1900 focused on the story of H. J. Heinz and his products. Pictures included the house where it all started, the Atlantic City pier, the 57-pickle pin, and the various Heinz labels. Heinz distributed these to schools and Sunday schools, and produced a series of coloring books over the first decade of the century. They also included his signature quote: "To do a common

thing uncommonly well brings success." Heinz realized brand advertising was for the long run.

Another part of the Heinz marketing success was the building of a corporate culture around his products. His products were always advertised as "pure," "homelike," "clean preparation," "healthy," "quality," and "wholesome." The advertising was an extension of his corporate culture, as was his plant tours. Heinz demanded a moral and family approach throughout his organization. The wholesome culture extended to the personal lives of his managers. Heinz would fire and discipline employees and managers for drinking or adultery. Cleanliness was demanded throughout the organization from the horse stables to the employee fingernails. Others such as Westinghouse and Pullman had created a corporate culture, but none had so integrated culture and product. Even today, one can find only a handful of companies, such as Disney, with a corporate culture. It was reinforced through training and the use of mentors for new employees. For most of his life, H. J. Heinz personally trained travelers in the "Heinz way." Hair caps and clean uniforms for women reinforced the corporate culture. Early in the company history, Heinz established an employee newspaper, *Pickles,* to develop and maintain culture. His food donations to children's camps, Sunday schools, picnics, and schools were also consistent with his family corporate image. The benevolent Heinz was not opposed to using discipline to assure rigidity of basic cultural premises. In many ways, the Heinz way augured the corporate culture of team oriented Japanese companies.

Heinz early on made packaging an integral part of his marketing system. Heinz studied the beautiful bottles of companies such as Crosse and Blackwell and designed a fancy horseradish table jar during his partnership with the Noble brothers. He started the practice of patenting a bottle for each product type, such as mustard. In 1870 he started a bottle numbering system, which appeared on the bottom of the glass bottle. The system numbered consecutively from "Heinz No. 1" in 1870 to the year 1945. Heinz would have molds made for the glasshouse, which was the practice, and the glasshouse houses stored the molds. Copying molds with small variations was also common by his competitors. Heinz was just as innovative with ceramic crocks, using shiny brown crock to promote his baked beans from 1893 to 1904. His ceramic crocks for apple butter and preserves were just as collectable. He was one of the first to use the famous Weir ceramic jar, which utilized a cast iron clamp pivoting on a strong wire bale. The Weir jar also had a rubber gasket to improve the seal. In 1892, Heinz purchased over 500,000 of these Weir crocks.

Heinz made his name synonymous with ketchup, and by 1904, H. J.

Heinz Company was producing 4 million bottles of ketchup. In 1892, Heinz patented his distinctive octagon bottle, which reflected Greek Doric columns. When competitors didn't stop copying his patented glass molds, he built his own glass house. Heinz had always believed in the importance of the package from his earliest days of horseradish. Initially, he used the common aqua green jars for his youthful horseradish business. Clear jars were being used for mustard jars at the time, but clear glass bottles came at a price premium. Heinz was able to obtain these clear jars to stress the purity of his homemade horseradish, but the cost was high until he had his own glass house. His small wooden barrels were just as distinctive with copper straps and nails. His labels were printed from etchings at a premium as well.

The package was the foundation of the Heinz strategy. Heinz had learned from his earliest days the importance of a beautiful package in commanding a higher price for products. By his package, brand name, and label, Heinz differentiated these commodities into food products. His labels were pure artwork. Even with 30 gallon barrels, Heinz strived to do the common uncommonly well. In 1889 Heinz invented a special iron and glass barrel cover for grocers to use. The cover prevented dirt and dust from entering while allowing the customer to see in. Heinz built his own barrels to assure quality. He trained his salesmen in setting up displays. A glass table barrel was used to dispense vinegar samples. Handbooks of different display set-ups were printed. Portable display cases were given to salesmen to use. Salesmen carried special cases with tacks, nails, a small hammer, postcards, recipe cards, and pictures of how to organize a display. The training and equipment of Heinz's ground troops gave him the advantage at the point of sell. This, coupled with brand recognition, gave Heinz market dominance and price leadership.

Baked beans were the first of the Heinz products to target the lower class and the poorer mill workers of Pittsburgh. Using automation, assembly line canning, and continuous flow manufacturing, he brought the price down. Using hand filling in 1896, the best the department could do was 20,000 cans in a ten-hour day. Heinz's can producing machine made 40,000 cans in a ten-hour day. His continuous filling operation allowed the cans of beans to be produced at the same rate as the production of cans. This assembly line production greatly reduced prices. The reduced prices opened up a volume market for Heinz, offering large cans of beans for 10 to 20 cents as a high protein meal for a whole family. Baked beans in tin cans had been around since the Civil War, but other than feeding the troops, demand had been small. Canners, with the exception of Van Camp's, which dated back to the Civil War, produced unlabeled generic canned beans for wholesalers to label. Heinz saw the opening in canned

beans to brand the product. Quality had also declined as canners switched to boiled beans, which they could process quicker. The problem with boiled beans was a loss of texture and favor. Heinz baked his beans and added a generous piece of pork. Heinz himself loved to eat baked beans. The advertisement focused on the protein value, lower cost, and ready to eat attribute, which made beans a success with immigrant mill workers in Pittsburgh and other cities. He promoted baked beans for breakfast as well. He also segmented his advertising, aiming his bean ads at the industrial cities of North America. By 1910 Heinz controlled the market through branding, packaging, and quality. Heinz utilized his canning line to produce macaroni and tomato sauce to appeal to the flood of Italian immigrants in New York City in the late 1890s.

He had even more success in England with his advertising to the working class. In England canned beans had actually been considered a luxury item and were sold by Fortnum and Mason at a premium. The Heinz brand name had been established in England since his first trip there in the 1880s. The Heinz label at Fortnum and Mason established Heinz products as high quality. Heinz baked beans were first sold in England in 1905 as the Heinz automated process came on line in Pittsburgh. Heinz's automation gave the company a low cost protein alternative for the struggling lower class. Again Heinz focused successfully on the great industrial cities with magazine and newspaper advertising. C.E. Helen, Heinz's London branch manager, proved a brilliant marketing man, targeting the struggling mill workers of England. With a brand name, a high quality image, low cost, and high value, baked beans became more popular in England. The British even adopted the practice of eating baked beans on toast. In all, baked beans were a huge advertising success for the Heinz Company and would be a model for future products. Today Britain is the highest per-capita consumer of baked beans and Heinz has 50 percent of the market with over 1.5 million cans sold in a day. Such market penetration was due to the early advertising of Heinz and its branch manager, Charles E. Helen.

In the 1890s, at the suggestion of a friend, department store magnate John Wannamaker, Heinz started to use newspaper advertising. In general, H. J. Heinz did not favor print advertising, but Helen convinced him otherwise. When H. J. used print advertising, he focused on national magazines. H. J. would always favor something like a pickle shaped railroad car over a newspaper campaign. In 1905, Helen used newspaper advertising to target the northern British workers with baked beans and the Heinz name, neither of which was known to these factory workers. Helen showed slow but solid results. This was not much different from H. J.'s brand advertising that took years to establish the Heinz name. H. J. always

remained hesitant of large print campaigns, but son Howard became a true believer. Howard used the technique successfully in the United States to promote preservative-free ketchup, even though H. J. restricted his print advertising budget. This would be one of the strange ambiguities of this marketing genius. H. J. had used new technology and cultural trends to grow his company and best his competitors, but in his old age he became resistant to new ideas. Like Thomas Edison with his stubborn belief in DC current, success seems sometimes to blind even geniuses. He did have the wisdom to pick key executives, like his son Howard and British manager C. E. Helen, who could move forward.

Charles Helen had started in Boston as a sales trainee in 1889. Within months, he was the leading salesman in the company and soon led the Boston branch office. Never before had a salesman so impressed H. J. Heinz. In Helen, Heinz had a man after his own image—creative, visionary, hard driving, and responsible. Helen had convinced Heinz that pricing and image were linked in some areas, such as Boston. He would often price products such as chow-chow above the competition to create the image of being the best. Actually, Helen had adopted an old principle that his boss had developed, but moved away from it as the company moved to more central control. In 1905, Heinz picked him to be the branch manager of the London office, and started a wave of decentralization at Heinz Company. Heinz hoped to manufacture and develop a market in England for baked beans. Helen was the perfect pick for England with his fashionable dress and precise habits. Furthermore, he proved more adaptable than previous managers. Helen, like the early Christian missionaries to England, never preached American methods, but assimilated ideas into British culture. He launched a "beans and toast" advertisement that made the combination a staple in the British Isles. Helen worked with his salesmen to create the ritual of Saturday samples at British grocers. Years later, Heinz managers would remark that Helen seemed more British than American. The continued dominance of Heinz in England is a testimony to Charles Helen's marketing strategy.

Helen and Heinz developed a model for entry of American companies into foreign markets. Heinz had established his brand through upscale sales distribution. His products were high quality and considered exotic, but now he was looking at a lower and middle market. Heinz also wanted to establish manufacturing in a country that had a lot of national pride and in 1905 purchased the firm of Batty and Company. Batty had manufacturing and extensive distribution. Batty had been exporting ketchup, mustard, and pickles to the United States since the 1870s, and Heinz was familiar with its operation. Batty had established an upper brand known as "Nabob," which included pickles and a special sauce

sold at Fortnum and Mason. Nabob was a title for wealthy Indian princes; the name had an exotic appeal to customers at Fortnum and Mason. Heinz also learned from the success of the Batty line. Heinz introduced an exotic Indian sauce of his own. Mandalay Sauce was a blend of fruits and vegetables from the Orient. The recipe was advertised as coming from a British army officer in the Far East. The exotic nature and Indian origin was the perfect fit to Victorian tastes of the time.

Helen grafted the Heinz products into the Batty product line, as well as manufacturing Heinz products in the Batty factory. Ownership by Heinz was downplayed in public, and Nabob sauce was marketed into the 1900s. There were no tours of the plant. Heinz and Helen hired a talented operations manager in Angus Scott to run the Batty factory. Heinz's production methods were slowly brought in. More and more products were sold to the trade in generic form and bottled products carried the Heinz and Batty labels. Eventually, the Batty label was eased out. Like Heinz had done in America, he established distribution centers in Glasgow and Liverpool to evolve into manufacturing plants. By the time Heinz and Helen established themselves, the average Britain thought Heinz was a British company.

Helen and Heinz made a dream team for marketing. Both men helped define the new discipline of marketing; much more than advertising, it included pricing, packaging, salesmanship, market analysis, and integrated manufacture. In fact, the whole approach was one of integration. Heinz and Helen pioneered the elimination of price differentials based on shipping. The price was the same for any grocer, which was a departure from the usual approach of the time. C.E. Helen had a genius for pricing, while Heinz had a genius for selling. Their coordinated sales campaigns built markets that lasted decades. The Helen-Heinz combination is credited with many innovative sales and marketing strategies—the use of test areas, target marketing, segmented pricing, and cardboard packaging to name a few. They took the British market, which had never seen a can of beans, and made it the leading world consumer. Today Britain consumes more canned beans per capita than any nation, devouring over 450 million cans per year. Beans on toast remains a unique British application, and Heinz beans remains Britain's favorite brand. The conversion of Britain to baked beans was truly the world's first marketing revolution and deserves serious study by those in marketing.

Baked beans became part of Heinz's core business by 1907. Heinz employed a new marketing strategy to further increase sales based on dietary, geographic and religious lines. In 1897, Heinz introduced Oven-Baked Boston Style beans to appeal to the New England taste for maple syrup in the beans. In 1899 he further increased the market by taking out

the pork and advertising Oven-Baked Vegetarian Beans. These appealed to Catholics, who had meatless Fridays, and Jews, who never ate pork. The success in beans led Heinz to offer a line of kosher products. Beans had a slow start in England but C.E. Helen was a creative marketer. He realized he had to get baked beans into the mouths of British grocers and consumers. He would have flasks of beans heated and taken to grocers; for longer trips he gave the salesman small alcohol can heaters. He used cardboard spoons for sampling years before the plastic spoon was invented.

Much is made of Heinz's advertising innovations, but the keystone of Heinz's strategy was his salesman. H. J. Heinz always watched salesmen closely, maintaining strict dress and moral standards. He even used height and weight standards for developing his British sales force. The training of his sales force was the foundation of the company. Even after the company became too large for him to personally supervise his sales force, he remained active in the annual and regional sales conventions. Salesmen helped him go directly to grocers without the need for the wholesalers. One earlier technique was to send travelers directly to houses with samples, and then asking them to go to their grocer. Sales literature encouraged consumers to ask their grocer for Heinz. This broke with the traditional wholesaler-grocer link. His "travelers" made cold calls like H. J. had done in the early days, and when necessary, went directly to the public. Sales were the last thing that H. J. would delegate. He liked also to promote his executives from his salesmen ranks. Heinz encouraged his salesmen to report back to him. Advertising and branding got him in the door, but Heinz won over the competition on the grocery store floor. Heinz himself would always be a salesman.

Heinz spent the first decades of 1900 building a motivated sales force and expanding his Europe operations. He posted annual honor rolls of salesmen and agencies' successes. Vinegar sales ratings of agencies were posted graphically each year. The baked bean honor roll was highly prized. His annual and regional sales meeting focused on such honors. Heinz would also informally add to Christmas bonuses for high performing employees. H. J. Heinz tried to make all meetings, and he also asked his best salesmen to speak. Heinz religiously reviewed weekly pickle sales and baked bean trends.

14

A Pioneer in Process Management and Continuous Production

HEINZ IS OFTEN NOTED FOR HIS marketing genius but overlooked for his advances in process control, quality control, automation, flow technology, vertical integration, and assembly techniques. Heinz operated assembly lines before Henry Ford. He was the first to develop process and quality control that went beyond inspection alone. He was one of the first to use a quality control lab and apply industrial chemistry. He pioneered automated bulk handling systems as well as conveyor and overhead crane systems. He took leadership in the passage of the Pure Food and Drug Act. He had one of the first electrically lighted and powered factories. He had electric horseless wagons before Henry Ford rolled out his first Model T. Heinz modernized the use of weights and measures to assure consistency to his product.

In fairness, a lot of credit has to be given to his brother-in-law and operations manager Sebastian Mueller, but Heinz was clearly an innovator of technology. Heinz was fascinated with the use of electricity in signs, his factory, and even his wagons in 1899. Heinz was clearly the first to apply chemical principles. He was the first in Pittsburgh, and first in the food industry, and probably within the first ten nationally to apply Frederick Taylor's principles of scientific management. He even improved on Taylor's incentive programs by adjusting for poor quality, making sure quantity production did not trump quality product, which was common in American industry of the period. His overall process and quality control systems were at least fifty to seventy-five years ahead of industry.

Heinz, the self-made man, had a distrust of the college educated. Heinz's notebooks demonstrate he was an amateur chemist with more knowledge than most professional chemists of the time. Heinz learned

process control in the brickyards. He was one of the first to hire chemists, but he often expressed some disappointment in their approach. Industrial chemistry was rarely taught at colleges of the time, and there were few colleges that had chemistry departments. One of his first chemists, Shady Graves, was a bit of a prima donna and an alchemist, although Graves did play an important role in exact measures of vinegar acidity. Before Heinz had chemists, he had process control standards on salting requirements. Heinz wanted his chemists and scientists to solve product problems and do chemical analysis. Heinz did expand his laboratories as he took leadership in the effort to pass the Pure Food and Drug Act (1906). In this national campaign, H. J. Heinz became close friends with Dr. Harvey Washington Wiley, who was bureau chief of chemistry for the Agricultural Department. Wiley had had been the first professor of chemistry at Purdue University in 1874. Heinz often wanted certain parts of the processing and recipes to be kept a secret. Codes were used on some recipes. Many department heads as well as Heinz himself had processing secrets. Heinz learned to balance the need for some secrecy and the need for scientific methods. Heinz's middle son, Howard, did get a degree from Yale in chemistry, which helped Heinz modify his resentment of professional chemists and the college educated. At Howard's behest, Heinz hired Herbert Riley, a bacteriologist, who would become a corporate vice-president. Riley's use of scientific instrumentation to replace departmental "alchemists" did win the support of Heinz and Howard.

Heinz and his general operations manager, Sebastian Mueller, led light industry in application of the scientific management principles of Frederick Taylor. Again maybe more credit should go to Mueller, who from 1895 to Heinz's death took day-to-day control of operations. Mueller was many times the originator, but Heinz was the motivator for new process techniques. (For simplicity, when Heinz is referred to in this chapter, Mueller should be considered as part of the management team.) Mueller had operating and factory experience beyond Heinz, and by 1905 was considered the leading expert in volume food processing. Every operations manager, no matter how knowledgeable or creative, is limited by the creativity and vision of the top executive. Heinz, like Henry Ford, supplied the vision that gave direction and motivation for subordinates.

Frederick Taylor had been developing his scientific management system during the decade of the 1890s at Bethlehem Steel. Part of the system was incentive pay, which had been limited in the steel industry to skilled labor such a rollers. Taylor found incentive or piece rate pay could greatly improve productivity. People would work harder and faster for additional pay. He had published many of his studies by the late 1890s, but industry was hesitant to implement such plans. Taylor's first "piece rate" paper

was published in 1895. Heinz and Mueller were experimenting with it by the end of the decade, blending in German quality control techniques. Taylor's incentive systems were a logical fit to Heinz's thinking.

Mueller pioneered industrial experimentation. He hired women to make detailed studies of operating parameters such as weight, temperature, and dimensions. H. J. Heinz loved to experiment, but Mueller applied the scientific method. Experiment logs were kept by his chemists for Mueller to review and propose new experiments. Mueller identified key employees to be official tasters for his experiments. He also tracked his experiments by salesmen feedback. No one in the food industry was doing this type of scientific experimentation. Mueller, in particular, was the first to study scientific temperature control in food processing. Mueller's skill as an industrial experimenter had be the real secret to preservative-free ketchup. In the 1910s, he was the first to hire bacteriologists to study process variables. He was first to purchase new scientific measuring equipment for his experimentation. Mueller tracked product yields according to seed type. Mueller's experimentation coupled with Fredrick Heinz's seed development would lead to many new varieties of tomato and cucumber plants.

Another area where Mueller went beyond Frederick Taylor was in the use of cost accounting. Mueller's yield and seed experiments led to the application of cost accounting. Mueller started a regimen of scientific experiments in 1897 to bring up the baked beans operation. He worked to base this new operation on science rather than the alchemy of earlier operations. First Mueller established detailed unit and material costs. He started with basic experiments on bean varieties in 1897. He tracked the costs of using "Alaska advancer" versus "Horsford's market gardener." He was able to track the cost of each variety to processing steps such as sorting, sizing, and baking. He established "chemists" or what people today would call quality control technicians to track costs. He tested automatic machines based on their costs. He tested and implemented the use of better temperature devices, replacing hand held mercury thermometers with dial thermometers. Endless experiments were performed using different times and temperatures in the processing. His chemists tested to sugar-lactic acid balances. They performed spoilage tests. Heinz did time studies on labeling long before time studies were used in industry. H. J. Heinz encouraged these cost studies, in particular, hoping to develop incentive based pay systems.

Heinz always believed in tying wages to sales and profits. Early on, in the late 1870s, Heinz paid his wagon salesmen $1.50 a day plus 5 percent to 2 percent on sales based on product line. Some of his earliest supervisors had profit-sharing bonuses in their salary, long before Taylor had

formally developed his incentive system. Heinz's agency and branch managers were paid based on a percentage of sales. Heinz paid his operating managers a percentage of profit up to 2 percent in addition to their salaries. Heinz was a natural capitalist and salesman who understood monetary incentives. Heinz also used informal bonuses to motivate employees. Heinz used prizes and competition to motivate as well. Heinz and Mueller even experimented with music to improve productivity. When the company reported strong sales in 1896, Heinz increased the wages of all the women employees by 12½ percent. This huge increase created a type of employee loyalty not seen in other Pittsburgh industries. In many ways Heinz was ahead of Taylor, but he quickly accepted the science of Taylor's system for his factory workers.

Heinz's earliest incentive programs were implemented in the bottling department. It was here that pickles were checked for size, visual appearance, and quality to be hand bottled. The bottling department consisted of over one hundred women working on long glass tables. The tables were framed with high sides to prevent pickles from sliding and falling on the floor. Women's nails were checked prior to starting work. Women runners kept the bottlers supplied with the correct size pickles from labeled and sized pickle barrels. Pickle barrels had been filled with automated sizing machines prior to being sold by the barrel or moving to the bottling department to be packed in individual glass bottles and jars. The sizing of pickles had been mechanized in 1877 with the invention of an automated sorter by John Heinz. This standardization would be the core of H. J. Heinz's marketing plan.

A pickle bottler of large pickles (size 1250, meaning at least that many were in a standard barrel) would put exactly 12 pickles in a bottle. The bottler would take the larger in the size range of 1250 and put them in the bottom followed by smaller at the top. The bottler used a grooved stick to arrange the pickles. A single red pepper was added and had to be clearly visible. In addition, the bottler had to throw out damaged or visually poor pickles. Women were preferred because of their better dexterity. A sample bottle was in front of bottlers to use as a guide. Once the bottler had 24 of the large pickle bottles, she crated them and carried them to the inspection table. Each bottle was then inspected and the foreman credited the good bottle tally against an employee number. A boy worker would then fill the bottles with vinegar. The bottles moved to the corking table and then to the labeling table. The bottler, of course, was the heart of the operation. The bottler was paid piece rate at one cent for every approved bottle. As the bottler gained skill, she could earn $1.50 to $2.00 a day in 1907, when unskilled labor was about 80 cents a day for women. A highly skilled bottler could do sixty dozen jars in a ten-hour

day. Sometimes a bonus was also given for consistent quality. Heinz eliminated overtime in the bottling operation because of a drop off in quality with longer hours. The bottler was also responsible at the end of the day for cleaning the table and floors. This unique system emphasized the production of quality product while rewarding productivity.

Another part of the Taylor system that fit the Heinz Company was its emphasis on process standardization. This had been the key to Mueller's development of the preservative-free ketchup. Small variations from the processing steps could result in a significantly shortened shelf life of the ketchup. Mueller and Heinz had painfully tried many process variations and incoming product variants. Once the right processing steps were found, these steps had to be religiously followed. Mueller was one of the earliest to document operating standards. Processing standards were like product recipes, and food processing was the ideal industry to fully benefit from Taylor's process standardization. The necessity of standardized processing moved traditional quality control inspection to a new process-oriented control. By 1912, other industries were studying the Heinz plant to adapt process control to their operations.

In many ways, Heinz pioneered modern quality assurance techniques. His early work to supply exact, uniform, and consistent product amounts in the 1880s was on the forefront of quality assurance. As he automated his baked bean department in the 1890s, he designed in the process the necessary quality assurance techniques. One woman would check the weight of automatically filled cans on the production line, while another checked the temperature. Heinz and Mueller applied inspection of incoming tomatoes earlier on, and improved on it in the effort to produce preservative-free ketchup. While J. H. Heinz hesitated, Mueller and son Howard aggressively put chemical checks into the process and hired quality control chemists. Where many today look at inspection as a cost, J. H. Heinz, through product enhancement, was able to make such inspection pay. For Heinz, inspection was not so much a step in the process as a check on the performance of the process. To the average reader this may seem like a parsing of words, but to process control experts, it is a profound difference. Inspection is not a sort operation on a poor performing process, but a check on a well performing process to assure quality.

Heinz truly pioneered continuous production long before Henry Ford in the automotive industry and Michael Owens in the glass industry. Heinz's brick making experience gave him a background in industrial material processing that most of his competitors lacked. Heinz had applied improved temperature controls at his father's brickyard and increased production. His early vinegar plant in the late 1870s was geared

to the continuous production of vinegar and was the root of his creativity in food processing. In the building of his factory complex in the 1880s, Heinz used a variety of chutes, conveyors, and cranes to move and process material. But it was in the production of baked beans that Heinz achieved a mastery of continuous production. Even more amazing is Heinz's quest to achieve automation and continuous flow without compromising quality. Baked beans had become a favorite in colonial New England. These were the famous Boston Baked Beans in tomato and maple syrup. The beans were baked slowly over hours in the fireplace. This allowed Puritans to avoid cooking on the Sabbath by setting up the beans on Saturday afternoon. Heinz selected a special haricot (navy) for his baked beans to assure firmness and consistency. Heinz also truly baked his beans, assuring firmness, while others boiled the beans. Heinz's baked bean department in 1905 may well have been America's first assembly line.

Canned beans had become a staple during the Civil War because of their shelf life and high protein value. He designed a continuous flow baking oven for the beans, which he patented. The real problem to continuous flow was the interaction of iron pipes and tubes as well as the possible bacterial action in piping systems. Stainless steel did not come into the industry until the 1920s and plastics were not yet available. Plain steel would corrode and enter the food. Heinz used silver plated and lined tubes to move the baked beans from the floor above. The tubes gravity fed beans to hoppers on the floor below to fill cans on a continuous line. Tin cans were produced on a soldering line, which brought in cans to be filled. The dry baked beans filled the cans, which were then weighed and tomato sauce added. Cans were filled at 150 per minute on the improved lines. A woman then added a piece of pork to each can. The pork was cut to a precise size by an automated machine. The use of these silver tubes prevented bacteria growth because silver is a natural anti-bacterial. Heinz may have not fully understood the chemistry, but he was aware that silver coins had been used to prevent bacterial growth in water for centuries. By the late 1900s, Heinz had a building dedicated to baked beans production. A few years later Heinz used his canning technology to expand into canned macaroni and tomato sauce.

Canning offered significant cost reductions over glass, as well as ease in handling and transportation. Larger cans also offered an alternative to ceramic crocks. These larger cans were popular with the restaurant market. Soldering of cans after filling did present a problem to Heinz and the industry in general. The possibility of solder contamination was a major concern, and Heinz experimented with new technology constantly to resolve this problem. In 1900 Carnation had invented a "sanitary" can for its condensed milk using a hole in the top, but the process was not

adaptable to baked beans. Heinz and Mueller tested a number of mechanical machines to make cans. Heinz used a quarter size top hole but hand filling limited them. In 1897 the baked bean filling was automated, but top soldering was still required. The soldering line was automated but required tinsmiths. A conveyor brought the cans by as a boy put a cap on the can. The cap was sealed with a plunger and heat, then a tinsmith on the line soldered the vent-hole. An inspector on the line checked for defective soldering. The cans were then loaded in iron baskets and taken by cranes to the hot water sterilizing, also at this point the cans were checked for airtightness by looking for bubbles. After sterilization, the cans were stacked and stored for two weeks to check the efficiency of the seal and to be sure that no bacteria occurred, which was revealed by bulging tops. Labels were then applied. By 1905, a mechanical crimping machine eliminated solder. By 1919, the can making line department could do 100,000 cans a day. Heinz not only gained the benefit of improved efficiency and quality but also turned it into a sales advantage.

Tin cans were lined with a tin coating, which was inert to the attack of foods and imparted no flavor. Heinz ordered special double thick tinplate from the mills. Tin-plated cans of the time were three-piece. The body piece formed the cylinder and overlapped with a soldered weld. The top and bottom lips were also soldered, but often solder contaminated the beans. This not only left a metallic flavor, but the lead in solder was a health hazard. Heinz pioneered a new crimped can to produce a solderless seal known as a rolled joint. The crimped seal included a rubber ring, which made for a hermetic seal. The crimping operation not only assured quality, but also doubled the production line speed. Heinz's continuous soldering increased production to 1,500 cans per day instead of 300. Crimping allowed a line to do 35,000 cans per day and eliminated the need for tinsmiths completely. Costs plummeted with this new automation, allowing price reductions in baked beans just in time for the economic downturn of 1907. Heinz now was able to use a subassembly can line to feed the filling line and proceed to a sealing line, all before Henry Ford's assembly line. Cans were still labeled and paper wrapped by women.

Another process revelation of Heinz was the shipping of bulk food products. Heinz had been moving vegetables in rail cars since the 1870s, but he pioneered the use of tank cars to move vinegar and pickles. Initially, Heinz shipped cucumbers to Pittsburgh salting stations. In the early 1880s the company started to decentralize with salting stations at the farm source. Field salting stations assured freshness, eliminated transportation spoilage, and improved yields. Both vinegar and pickles had the volume to transport in bulk by 1894. Pickles, in particular, needed to be salted and then moved to central packing plants. The railroads of the time lacked

tank cars such as the stainless steel tanks of today. Heinz designed a 10,000-gallon barrel tank. The tank was built like a barrel from four-inch thick cypress staves with steel hoops. Tank cars actually expanded his distribution of pickles and vinegar to smaller independent packers. Vinegar bulk car tanks greatly increased sales across the country. By 1910, Heinz had over forty pickle cars moving from field salting stations to Pittsburgh. These salting stations could also barrel pickles for direct bulk shipments. Bulk transportation also reduced transportation and handling costs, giving Heinz an advantage over regional food processors. By 1900, most of the salting stations had evolved into factories.

Heinz had a staff of mechanics in the late 1890s searching for more means of automation. They developed an amazing array of specialized equipment. A rotary machine was invented to remove skin and seeds from tomatoes and named the "Cyclone." The Cyclone was also applied to fruit preserve production. Automated corking machines and conveyors for all the lines were in place by 1900, far ahead of the automotive industry. Heinz earlier on a developed automated can production. Heinz Company developed power driven mustard grinding mills. Horseradish grating was also automated. The baked bean ovens had been built special by Heinz mechanics. They invented wooden pumps and tanks to handle mustard, which reacts with most metals. Heinz mechanics modified huge rotary printing presses for their labeling operations and multiple nailing machines for the boxing department. The level of automation at Heinz was unequaled in American industry.

Lesser known is Heinz's pioneering in glassmaking and bottle production. Heinz had moved into glass production in the late 1890s. His original glass works was a simple hand blown bottle operation with over twenty glassblowers dedicated to bottle and jar production. In particular, Heinz wanted control of his octagon ketchup bottle and famous chili sauce bottle. Fancy bottles prior to 1890 cost from 30 cents to 60 cents each, which made packaging the major cost in bottled food. Semi-automatic hand blowing methods brought the cost down to 5 cents to 10 cents a bottle by 1895. At the turn of the century glass bottles with high volume such as Heinz products reached $2 a gross (144 bottles). By 1905 the company supplied its own bottles for ketchup and surpassed the million mark. The best glass house at the time used hand blowing and could produce 3,600 ketchup bottles per furnace operation in a day. In 1903 Michael Owens (financed by Edward Libbey) invented an automated bottle-making machine that could produce over 10,000 in a day. The price dropped from around $1.75 a gross to 10 cents a gross.[1] This was a huge reduction in bottle costs, which was the major raw material cost in ketchup manufacture. Automatic bottle production would help make ketchup a product for the masses.

Heinz was one of four companies to contract for Michael Owens's automatic bottle machines in 1909. The arrangement gave Heinz exclusive rights to automatically produce ketchup and other special-shaped bottles. For the machine and exclusive license, Heinz had to pay Owens a royalty for each bottle produced. As an early adopter, Heinz Company struggled with implementation, but the payoff was large in the long run. As Heinz worked to automate, the bottle making machines were moved to the North Side plant. Development work continued with Michael Owens to produce a ketchup filling station in line with the bottle production; by 1913, Heinz had a prototype ketchup-filling machine that used electricity. The size consistency in automated bottle production was a key factor in continuous filling lines. Hand-blown bottles had a wide variation in size, while automated bottles had consistent fill weights.

Heinz's fascination with electricity went beyond running factories. He would be one of the first to use electricity at his home. Of course, it would be hard not to do so with George Westinghouse as your neighbor. In 1899 he purchased an electric powered delivery wagon made by Pope Manufacturing Company. Heinz had purchased it more for advertising, since there were few electrics in operation. He had spent time studying them at the 1893 Chicago World Fair. Even with their mechanical problems, Heinz increased the use of electric wagons in Chicago, Pittsburgh, and New York. The Heinz electric wagon was the first on Pittsburgh's streets. Heinz loved the unusual and felt the wagon had great advertising potential. He added gasoline-powered wagons in 1910 when they became available. Like he had done with his horse drawn wagons, he added giant pickles and ketchup bottles to their roofs. His son Howard had the same love of technology and purchased a gasoline vehicle in 1900 to drive to the Heinz plant. The car known as the "Red Devil" was a hi-tech French Panhard-Levassor.[2] It was one of the first in Pittsburgh and drew its own crowds. In 1900 there were only 15 automobiles in Pittsburgh.

Heinz's love of technology went beyond electricity, chemistry, and biology. In 1911, he was one of a handful of first flyers in a hydroplane. He made the flight with aviation pioneer Glenn Hammond Curtis. Heinz also never lost his love of the technology exhibitions at world and national fairs. Heinz followed the engineering of power generation closely. He installed some of the largest gas engines in his power plant to reduce the smoke pollution from the coal-stem engine power generation. The engines failed and had to be replaced with steam engines. Heinz's interest in power generation came out of the pollution problem that plagued Pittsburgh. He applied automation and technology far more aggressively than industrialists such as Ford, Rockefeller, and Carnegie.

Vertical integration and control of his supply chain was a fundamen-

tal principle of Heinz. His belief in vertical integration differed from his neighbor Andrew Carnegie in that Carnegie wanted vertical integration for profit control and Heinz wanted it for quality control. One of the mottos in his office said it best: "To protect the consumer by owning the product from the soil to the table, free from chemical, coloring matter or substitute." Heinz called his integrated approach "soil to consumer." Heinz started in the fields supplying the farmer's seeds for his vegetables in the 1910s, and the company had greenhouses to develop better ketchup tomatoes. Heinz created a seed farm to even assure that high quality seed was always available. Heinz was personally interested in a redder, denser, more solids and higher pectin tomato, which would better support his preservative-free processing. Fredrick Heinz had been successful in the early 1900s in producing better plants and seeds to make ketchup. Many of these experiments took place at Heinz's Bowling Green ketchup operation as well as in Heinz's personal greenhouses at Greenlawn. At H. J.'s death the company specified the use of their special seeds for ketchup tomatoes. To be a Heinz farm required a strict qualification process of the farm's management and operating system. Fertilizer applications were required by Heinz as well as soil testing. Fredrick Heinz would visit a supplying farm, and often H. J. Heinz would make a visit himself. Fredrick Heinz got records of farm yields and quality. Howard Heinz started to build on his father's philosophy in the 1910s, adding soil chemical analysis, fertilizer analysis, and soil experimentation. Howard also added bacteriologists at every plant to routinely test ketchup.

With the help of Mueller, Heinz and his son Howard would bring in a new type of quality control. Prior to the late 1890s, Heinz Company was centralized. H. J. Heinz led a troop of loyal lieutenants. H. J. Heinz controlled the recipes with few, other than family members such as Sebastian Mueller, knowing the full recipe. Heinz also employed coded recipes. Department heads knew only their part of the overall manufacturing process. After the mid–1890s, such tight control became difficult as the organization grew. Heinz considered limiting further growth to keep the tight control. As the company expanded at the turn of the century, some processing problems developed. His operating managers, even Mueller, moved to the use of preservatives to allow for more variation in the process. It was the quest for preservative-free ketchup that forced the organization to address a new approach to quality and process control. Mueller had found the processing requirements to make preservative-free ketchup, but for daily production, strict operating standards and controls would be needed.

Heinz's industrialization had created a common problem related to corporate growth. As the company grew beyond centralized control, some

form of standardization would be needed. H. J. Heinz was influenced by his son Howard and Mueller in applying the new concepts of scientific management. Heinz Company had been using the incentive pay systems of Frederick Taylor since the 1890s. Taylor's overall scientific management system included inspection and processing standards. The Taylor system would allow Heinz to make the transition to a more decentralized organization. Mueller had learned the importance of scientific management in his quest for preservative-free ketchup. Standard practices and adherence to standard operating procedures were a must in the consistent manufacture of preservative-free products. The acid and pectin balance needed tight control. The other necessity was inspection standards—tomatoes had to be red ripe, but overripe could not be tolerated.

While Heinz was the visionary who believed in the ancient purity manufacturing laws of Germany, Mueller was the pragmatic process innovator, and Howard injected science into the strategy. H. J. had brought over several chemists from Germany with little success. These German chemists seemed more showmen than scientists. Shady Graves controlled the salt balance in his pickling operations in the late 1890s. Shady used his finger and taste buds to adjust the salt levels. Scientific management replaced Shady with a hygrometer, which could accurately measure salt content. Howard Heinz and Mueller started to bring in chemists, such as University of Pittsburgh graduate Herbert Riley, showing them as accountants on the books to avoid the scrutiny of H. J. Heinz. Heinz Company's use of scientific instruments evolved into one of the earliest quality control departments in the nation in 1918. Heinz also strengthened his inspection, which had always been a foundation of Heinz's quality. Tomatoes were all visually inspected to eliminate overripe fruit. Where Heinz was ahead of the competition was in his use of vertical integration to control tomato quality from seed to factory. Heinz understood that paying more for tomatoes could in the long run reduce costs. This approach helped keep rejection costs down by improving the process as well. Heinz's combination of inspection, process control, and diagnostics was decades ahead of the general quality movement in the United States.

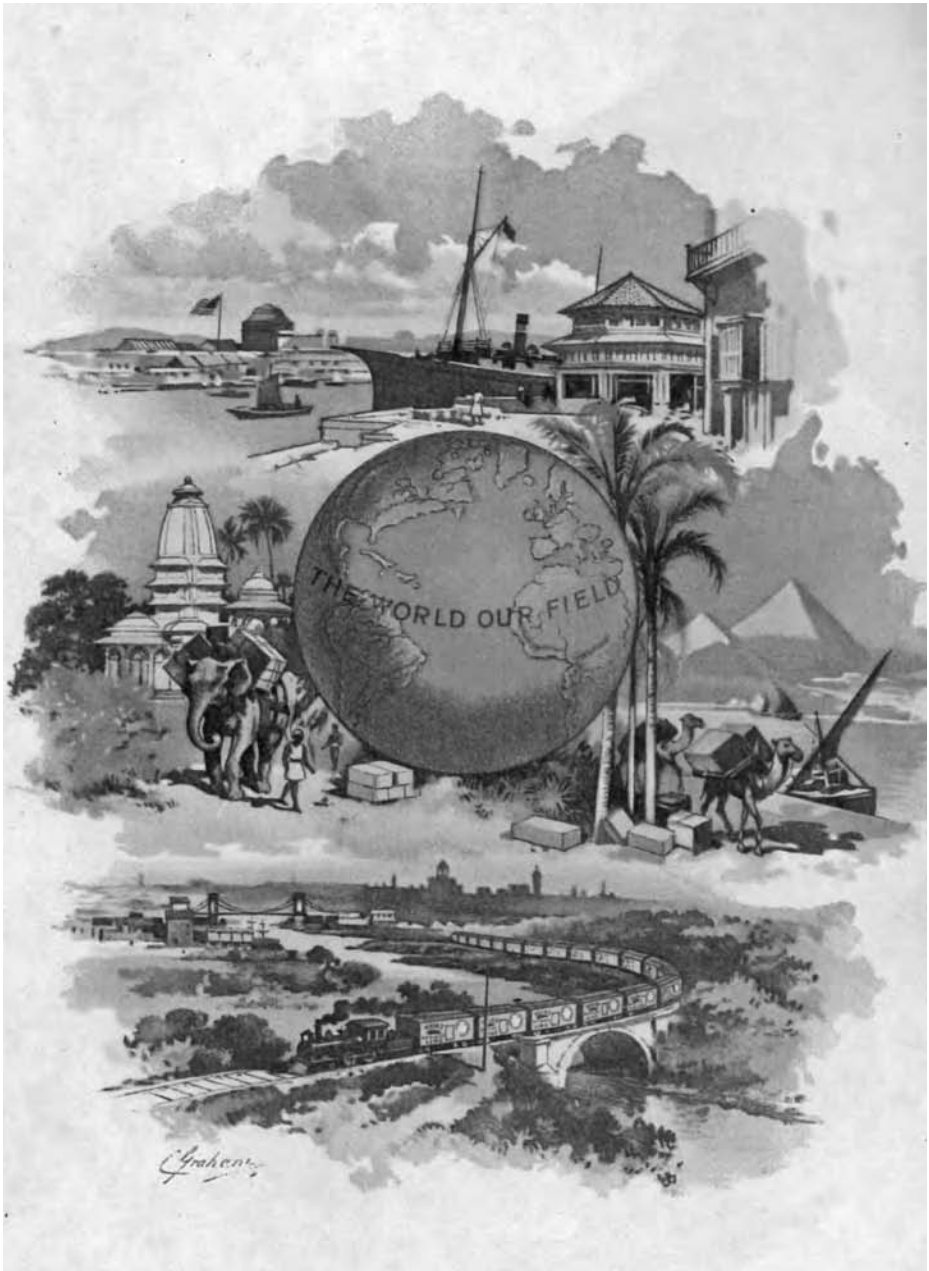
Howard Heinz took chemical testing to new levels. H. J. Heinz had involved Howard in 1905 in the food purity debates, and Howard applied science to the operation. Howard was part of the effort to eliminate potential lead solder in the canning operation where possible. Howard expanded the scope of the Heinz laboratory to study metal and food reactions. For a while, Howard moved highly acidic products to glass rather than tin plate until tin salts could be fully evaluated. Tin salts were eventually found safe, and they could also be minimized by strict temperature control. Actually, one of the few uses for food tinplate today is

in highly acidic food canning. This was the type of research that H. J. Heinz encouraged. The company formed a strong partnership with government research labs as well. Heinz Company also started to work with the tinplate producers to assure no contamination in the making of tinplate.

Heinz and Mueller had by the 1890s realized that overtime resulted in poor quality, and they eliminated overtime in the pickle bottle department. As in tomato inspection took on importance in the production of preservative-free ketchup, inspection overtime was eliminated. This again favored the employment of women who were limited to 60 hours a week by law. Heinz avoided the common use of cheap child labor because of the need for quality. The Heinz factory did have some of the first high speed "assembly line" operators. These were common in the baked beans building, where a chain-driven conveyor set the pace. The women's arms acted in harmony with the filling machine adding a piece of pork to each can. At 100 to 150 cans per minute, this pace required continuous effort. Many reported difficulty and problems keeping pace. Women were paid 75 to 85 cents a day in 1907. This was slightly better than women's wages in other industries.

One of the powerful principles that H. J. Heinz instilled in the organization was inventory control. H. J. never forgot the hard lessons of the bankruptcy, and he had a true feel of the cost of carrying inventory. Inventory as the equivalent to cash is a concept often lost on non-owners. Heinz knew full well that inventory was non-earning capital. He maintained a policy of low inventory, even in the face of pre-war inflation. His practices today would be called "lean manufacture" or "just-in-time manufacture," but for Heinz it was basic to profitable operation. He also realized that processed food should be inventoried as little as possible. Write-offs in the industry for inventory could be substantial, but Heinz was an industry benchmark. Inventory records were reviewed to maintain quality as well. Inventory was also inspected routinely to check for spoilage. He drilled this belief in Sebastian Mueller and his son Howard.

Another part of this lean system was the traveler, who monitored inventory throughout the system. Travelers were trained personally in most cases by H. J. Heinz on the lean system. They were actually cautioned not to oversell accounts. They also visited and checked store shelves, allowing for a smooth ordering of grocer needs, avoiding the panic replacement order or clogging Heinz's warehouses with ready inventory to cover the grocer. This attention to detail paid off in profits and cash flow. Heinz took the same inventory control methods to his suppliers. He was determined never to have cucumbers flooding into his salting stations as with his first company. As Heinz Company grew, he was able to apply volume



H. J. Heinz commissioned this painting to celebrate the 20th anniversary of the company. It illustrates his concept of vertical integration (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 60).

and pricing pressure. He did his best to avoid buying crop futures, using the price at harvest. It was a risk, but one that went directly to the bottom line. In so many ways, his early bankruptcy helped him to redefine the food processing industry.

Heinz's integrated marketing, manufacturing, and distribution made Heinz Company unbeatable by 1907. The Joseph Campbell Company did try to challenge Heinz in the first decade of the 20th century. Campbell aggressively expanded its product lines into Heinz's with the exception of pickles. Campbell moved into sauces, ketchup, mustard, salad dressing, and chili sauce, but only dominated Heinz in soups. It matched Heinz in the use of advertising, but lacked distribution to be fully national with all its products. In 1905, it tried baked beans but lacked the manufacturing capacity to fully challenge Heinz. Campbell produced the thinner ketchup, which had fallen out of favor with the public. In 1914, Campbell purchased Franco-American to move into spaghetti business. Campbell lacked vertical integration of supplies and integrated manufacturing; it did not produce its own tin cans until 1936. By 1922, Campbell changed its strategy and name to Campbell's Soups.

Heinz proved the master of the integrated strategy, product diversification, and "economies of scope." It required grouping similar products for manufacturing in cells. Campbell was one of the few to challenge Heinz on this strategy, and Campbell eventually went to specialization in soups. Specialization seemed to be the preferred strategy for the competition. Robert French, like Campbell, had started out as a diversified company, but by 1904 started to specialize in mustard to take on Heinz. Heinz could be beaten on a specific product, but often remained a second or third competitor to such specialists as French's mustard, Campbell's Soups, and Worcestershire sauce. The Heinz brand name also allowed him to move into new product areas in which other manufacturers proved successful, such as mayonnaise.

15

A New Type of Capitalism

H. J. HEINZ ROAMED THE STREETS of Pittsburgh with some of the 19th century's greatest capitalists—Andrew Carnegie, George Westinghouse, Henry Clay Frick, Andrew Mellon, Thomas Armstrong (Armstrong Cork), and William Kendall Thaw (railroad magnate). All came from humble roots and had immigrant parents. They all settled in Pittsburgh Homewood-Shadyside neighborhood. All brought trusted family members into the management of their organizations. They belonged at one time to the same Presbyterian Church and the famous Duquesne Club. They all shared a fundamental belief in capitalism, but all applied that belief differently. All were staunch Republicans. All feared the violent socialism sweeping the Europe of the time. Heinz, however, better understood the nature of socialism and adapted his capitalism to meet the needs of the worker. Even the worst of them, Henry Clay Frick, put family above work. All opposed the unionization movement, but Heinz offered a superior workplace to that of any union shop. All have been accused of paternal capitalism or welfare capitalism, but Heinz envisioned a new type of workplace. All contributed to the community in their own way. Heinz and Westinghouse, however, paved a new style of capitalism, which was employee based. Heinz, in particular, left an example of what capitalism could be. Heinz's capitalism was passionate but disciplined. Heinz Company posted huge profits as did the others, but Heinz had prospective employees lined up trying to get jobs at his factories.

A union leader at the time called the Heinz factory "a Utopia for working men ... the most advanced ideas are in practical operation there."[1] While Heinz's factory was far from a sweatshop, the pay was slightly below average. Women's pay was slightly better for production line workers in companies such as Westinghouse Electric in East Pittsburgh. Still, like most of industry of the time, women's pay was about half that of men.

A political parade wagon in support of William McKinley's sound money plank in 1896 (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 11).

The Pittsburgh worker of Heinz's era varied widely in take-home pay. The highly skilled craftsman made about $2.50 to $3.00 a day in the 1870s and 1880s. In the 1880s, women at Heinz made 55 cents per day. A young boy could make 45 cents a day. An office clerk made about 65 cents a day. A Heinz salesman could make over $3.00 a day based on a rate of $1.50 a day plus 5 percent of sales. The starting salary for a Heinz salesman was $12 a week. A Heinz foreman or supervisor made $3 per day in 1880. To put these wages in perspective, in 1878, $1 a day was considered the poverty level. In 1879 a stableman made $7 a week. Pay in the trades varied by type, as seen in this 1874 survey: Railroad engineer $4.20 per day; Steel puddler $3.40 per day; Bricklayer $3.06 per day; Stonecutter $2.89 per day; Plasterer $2.65 per day; Blacksmith $2.30 per day; Tailor $2.30 per day; Carpenter $2.30 per day; Laborer, coal mine $2.00 per day; Baker's helper $1.80 per day; Railroad clerk $1.50 per day; Common laborer $1.00 per day; Sales clerk 75 cents per day. Overall Heinz's pay rates were slightly below average through the period 1875 to 1920, still, Heinz had many willingly applicants based on his superior working conditions.

The world of heavy industry was a bit different. A skilled worker such as a roller in the steel mill could make $8 to $10 a day with incentives. The unskilled mill worker was at $1 a day, the poverty level. About 75 percent of Pittsburgh steel jobs were unskilled. A factory manager might make $5 a day. The new position of the factory foreman paid around $3 per day ($21 per week) in 1880. Heinz had female foremen earning that wage by 1900 (Heinz Company was the only one in Pittsburgh to have women in foremen's jobs). Initially, Heinz foremen were paid well below the average. Heinz paid his male supervisors slightly above average, once they demonstrated a degree of loyalty to the firm.

A day laborer in heavy industry from 1890 to 1900 made about $1.00 to $1.50 per day, while a woman at the Heinz factory made 50 cents to $1 a day. Women in New England's textile industry made less than 50 cents a day in the same time period, but women at Westinghouse Electric in Pittsburgh made slightly more. By 1905, some women pickle bottlers were making $1.50 a day based on production incentives. A typical day for the period was 10 hours for women, while many men worked a 12-hour day. A male bottler in a Pittsburgh brewery made $1.70 a day in the 1890s. Heinz's women employees tended to be temporary, with an average employment of 2 to 4 years.[2] By 1907 when the national standard for women was 85 cents a day, Heinz's bottlers made $1.50 a day, Heinz labelers made 98 cents a day, and Heinz beanery girls made 75 cents a day. Still, the Heinz women were the highest paid women in Pittsburgh for equivalent skill levels. In addition, in Heinz's early years prior to 1895, the work for laborers was highly seasonal. Heinz women workers tended to be the second or third wage earner in a family, and almost never were the primary family wage earner. The benefits at Heinz were far superior to the best paid in the local steel mills.

A Pennsylvania coal miner in the rich seams could mine four to six tons of coal at a $1.00 a ton, making their day wage as high as $6 in 1880 (a day was 12 hours long). The miners' wages were reduced by necessities like 75 cents per month for tool sharpening, 60 cents a gallon for lamp oil, and $2.25 a keg for blasting powder. The miner's rate, however, as seen in the Panic of 1873, was dependent on the economy; in bad times, the wage was reduced by payment of material goods from the company store. During the Panic of 1873, mine wages dropped to as low as 50 cents a ton. As industrialization increased urbanization, another subgroup arose to support urban living, such as schoolteachers, who could make $2 to $7 a day (women teachers made $2 to $3 a day). A private school superintendent could make as much as $600 a month. These wages emphasize the value the emerging middle class put on education. Store clerks made 25 to 60 cents per day, but the work was safe and clean.

Liberty Bond Drive rally, 1917 (H. J. is at bottom center) (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 12).

In the 1880s industrialization had created a new class of worker. This worker was not particularly highly paid but worked better hours in cleaner environments. White collar clerks earned around $1.50 per day and were part of the growing industrial based middle class, although it was the lower end of the class in 1880. Heinz was slightly under the average for his clerks. Heinz's wagon salesmen made $1.50 a day plus 5 percent of sales. Boys made about 50 cents per day and women about the same in most Pittsburgh jobs. A skilled laborer could make $1.50 a day in 1880. The real drawback was most industrial laborers and white collar workers put in 60 hours a week or more to earn those wages.

Based on 1880 prices, living expenses for a steelworker might include $2.44 per week for food, $1.25 per week for clothes, $1.38 per week for other necessities, and $1.50 for rent. Some typical food prices were corned beef at six cents a pound, coffee at 14 cents a pound, flour at two cents a pound, and butter at 22 cents per pound. Bread was around five cents a loaf and potatoes were 39 cents a bushel. A pound of ham was about 11 cents and a pound of crackers was four cents a pound. Ketchup in a prepackaged bottle ranged from 50 cents to a dollar a bottle. Ketchup from the grocer's barrel was around thirty cents a gallon or forty cents for a pint bottle, which was a considerable amount based on a wage of

The "Red Devil," Howard Heinz's 1898 Panhard (courtesy The Frick).

$1.50 a day. Still, prior to 1900, Heinz was not marketing to the laboring class, but the middle class. Pickles cost four to eight cents a dozen. Poverty level in 1880 was considered to be $500 a year, though numbers varied widely by region. Slum dwellers were common in the industrial cities, and children and women needed to work to help the family. Landlords often abused the industrial slum worker, overcharging for rent in many cases. A two-room apartment might run $7–11 per month without toilets, baths, or heat. The two rooms would house a family of six with a possible sub-renter or two. Other costs were a dollar for a man's shirt, a linen handkerchief was five cents, a wool blanket was $2.50, and a gallon of whiskey sold for $3.

Based on an 1890 survey of steelworkers at Homestead, the following statistics stand out. Of the 3800 employees at the Homestead Mill: rollers, which represented less than a half percent of workers, earned $7 to $7.50 a day (the head roller could make $12 a day); 109 skilled laborers (2.9 percent) earned between $4 to $7 a day; and 800 skilled workers (21 percent) earned $2.50 to $4 a day. The balance was unskilled (32 percent), earning $1.68 to $2.50 a day with the remaining 43 percent earning less $1.40 working twelve hours. A family budget from the same Homestead study is enlightening. The average Homestead steel family took

in $663.58 annually, of which $85 was from other members in the family. For example, young boys might pick out some day work and well as the women. The budget consisted of 45.1 percent for food, 19.5 percent for clothing, 15.3 percent for rent, 6.6 percent for tobacco and alcohol, 11.6 percent for other such as books, entertainment, and newspapers. This left a surplus of 15 percent, which could be applied to savings.[3] Savings accounted for the upward mobility experienced by these industrial families. Often the second generation invested in bars, hotels, and small stores. Many purchased small farms to support the family. Often steelworkers who worked at Homestead lived in nearby burghs, which were connected by an extensive streetcar system. The rail fare was estimated at $3.50 month or as high as 6 percent of the non–Homestead family. The Pittsburgh streetcar system made it possible for steelworker family members to work at the Heinz plant at North Side and the Westinghouse plant in East Pittsburgh. Many wives, future wives, and daughters of these steelworkers worked at Heinz or Westinghouse Electric. By 1900, a woman could make more, about $1.20 day, at East Pittsburgh's Westinghouse Electric with good benefits and about $1.50 a day at Heinz with better benefits. A woman bottler at Heinz Company, on incentives, could make as much a $2 a day. The average male in 1900 made $1.50 a day.

The industrialization of ketchup is an example of how it became affordable for the average Pittsburgh steelworker. When Heinz started selling tomato ketchup in a bottle, it was priced around $1 to $1.75 a pint bottle, depending on variety, clearly out of reach for the average steelworker, as well as most of Heinz's own employees. Bought from the barrel at 50 cents a gallon, some steelworkers could add ketchup to their diet for more flavor in the bland diet of the time. In 1880, a bottle of ketchup was $1 to $1.50 a bottle depending on grade, but by 1890 it was 45 cents a bottle. By 1893, Heinz's cheapest bottle of catsup or ketchup was 25 cents a bottle. Other product costs in 1880 were: a pound of soda crackers, 4 cents; a pound of ham, 11 cents; and a sack of flour, 89 cents. By 1900, the lower-grade ketchup price had dropped to ten cents a bottle, putting it in reach of the average working class budget. Walnut ketchup was priced at 35 cents a bottle. Industrialization and automation had greatly reduced the price. Still, there were hundreds of domestic producers of ketchup in 1900. The McKinley Tariff of 1890 put a 40 percent tariff on imported ketchup, which created more domestic investment in the production of ketchup. Heinz's strong support of the Republican Party was probably why domestic ketchup was one of the highest tariff protected products. This brought down the price while increasing profits on the new volume, estimated at over 500,000 barrels. Overall, Heinz took its biggest increase in sales from $824,806 in 1889 to $1,235,184 in 1890

Anti-additive advertisement (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 62).

(almost a 50 percent increase). Heinz used the added profits to expand plant capacity and increase employment. By the turn of the century, ketchup moved from a specialty to volume product for makers such as Heinz, the Williams Brothers of Detroit, and Van Camp's of Indiana. By 1905, Heinz was selling over a million bottles and by 1907 over twelve million bottles.[4] In 1906, Williams Brothers produced over 4 million

bottles. After the turn of the century, ketchup was a big business and a big employer of women.

Heinz's volume and automation were keeping most of his product line within the budget of a labor class steelworker making $1 to $1.70 a day in 1900. A can of baked beans was from 10 cents to 25 cents depending on size. Heinz advertised his beans to steelworkers as a quickly prepared meal with three times the protein of meat. Mustard was 15 cents a jar and ketchup as low as 10 cents a bottle. Pickles cost 35 cents to 25 cents a bottle or about 7 cents a dozen from the barrel. Horseradish sold at 25 cents a bottle, celery sauce at 25 cents per bottle, and apple butter at 40 cents a ceramic crock. Vinegar was about 50 cents a gallon. French's mustard sold for 10 cents in a nine-ounce bottle. French's lower price was a result of specialization in one product line. Heinz Company developed a peeling and apple coring machine in 1900, which again cut costs across many product lines.

The employment of women in the Pittsburgh area as well as across the nation helped Heinz's sales, which were still concentrated in industrial centers. While most women in the workforce were young and single, their hours were missed in the home kitchen. The time to make homemade pickles, ketchup, and horseradish was no longer available as women entered the work force. Since women at the time were ancillary wage contributors to families, family budgets increased and allowed more convenience foods. Food preparation was the first phase of reducing the household work required by women in the industrial age.

By 1900, women represented 20 percent of the labor force.[5] Most of these women workers were single and under 25 years old. Over 58 percent of the Heinz jobs were for women. Women could start at the age of fourteen. Pittsburgh offered a more tolerant environment for women to work. In the Eastern states, some old Puritan stock resisted the trend for working women. The German and Scots-Irish did not share the Puritanical values. The Germans, in particular, saw the family as an economic unit. The textile industry of New England, eastern Pennsylvania, and Pittsburgh's North Side had broken the Puritan resistance to women in the workplace. Money was pooled into savings for family investments. After 1890, the later European immigrants had no taboo against women working. Italians even encouraged single women to work. Many wives worked as seamstresses and could earn $2 to $3 a week in the 1900s. Often steelworker wives who did not work were expected to cook and clean for boarders. Even small apartments in the slums were subleased to single boarders for extra money. Irish immigrant women tended to work as maids for the wealthy as a second job, but earned much less than a Heinz factory girl. For the middle and lower classes most women in a family

contributed around $80 or around 12 percent to the family budget. It took time for women to break into the better clerical jobs that were manned by men prior to 1890. In 1900, women held a third of the clerical jobs, and by 1920, they made up half of the clerical work force.

By 1908, Heinz's full time women employees made $1 to $1.70 a day. Over 80 percent of women workers in Pittsburgh made less, and the poverty level for a single woman was considered $1 a day. A woman on piece rate could reach even $2 a day. Heinz did hire seasonal part-time women workers at 50 and 75 cents per day. Still, women considered Heinz the best employer in the city of Pittsburgh. In 1908, Heinz women worked an eight-hour day five days a week when most worked a ten hour day. Heinz also had free medical and dental care as well as a pension program.

The employment of women workers in the Heinz plant went back to the 1870s, when Heinz hired two women to help prepare horseradish. In the 1880s, the basic work was still preparing and making food products. As automation moved into the operation, women made the transition to machine operators. The pay was more, but still it was half of what a man would earn. Women were also used for labeling and harvesting. Women originally were employed because of their food preparation skills. As machines came into play women offered a lower cost, but just as important was the large labor pool available. Pittsburgh often experienced a shortage of labor because so many were hired to keep the expanding steel mills of Carnegie running. The canning industry in general employed mainly women.

Women were treated well by the owner at the plant. Lunchrooms for women had table linens and offered tea. Women could relax on the women's roof top garden or take a horse drawn wagon ride through the park. They were given freshly laundered uniforms and caps each day. Manicures were given free on a weekly basis. Heinz even had doctors who specialized in the care of women. Heinz often sponsored weekend retreats for his women employees. Free lectures were given weekly at the plant auditorium. Women had a "house mother" and mentor to help them. Women were given career choices to progress into management or switch to office work. Women suffering from a divorce or desertion were often helped by the company. The company had numerous family picnics throughout the summer.

In 1899, Heinz had 900 women employees; only his neighbor George Westinghouse had as many women working in a factory environment. A typical female employee would arrive at 7 A.M. and enter the time clock building on the women's side. She would go to a very clean locker room to her own locker. She would receive a freshly laundered uniform each day.

A 1900 advertisement (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 62).

If she was a food handler, she could receive a free manicure. Manicures were mandatory if she would be working a hand-oriented job such as preparing jars of right sized relish, hand packing pickles, labeling cans and bottles, or hulling fruits and vegetables. One hundred women worked in the bottling room packing pickles into jars with one well-placed red pepper to show clearly. These bottling jobs were the highest paying, and only the best employees were offered these jobs. In 1899 there were twenty

some in the "labeling room" putting labels on tin cans by hand. The labeling jobs prior to automation were high paying incentive jobs as in the bottling room. At lunch she would take her packed lunch to an assigned place in the 500-seat women only lunchroom. She could buy tea or coffee for a penny a cup. The penny was used in the employee welfare fund. Music was played on an imported organ from Germany. Lunch was usually paid time and lasted a half hour. Longer concerts extended the lunch period to an hour.

The day ended at 5:40 P.M. except on Saturday at noon, but the opportunities and benefits continued. The roof gardens were open in the warm months. A library and reading room were available, and books could be taken home as well. The Carnegie Library supplied additional selections to the Heinz Company. The auditorium offered almost daily events. The auditorium had 1500 seats, a special gallery of boxes, and a stained glass dome. Lectures on cooking, singing, dressmaking, and art were common. When famous lecturers of the time were in Pittsburgh, Heinz often had them speak to the employees. Russell Conwell delivered his famous "Acres of Diamonds" lecture at the auditorium. There were free services of a nurse, doctor, and dentist. The auditorium also offered seasonal entertainment. At the Christmas party, she might receive a silk umbrella, music box, or scarf, and of course pickles. Umbrellas became a perennial favorite Christmas gift. There were also events for children, and the family Christmas party included Santa Claus. There were dances during the year as well, known as "promenade concerts." Four times a year the seats were removed from the auditorium for these events. The majority of women employees were single, and General Foreman Agnes Dunn and General Manager Sebastian Mueller with H. J. Heinz sometimes were in the balcony carefully watching these dances. A swimming pool and gymnasium were also available.

Still, Heinz was not immune to criticism. One of the members of the famous Pittsburgh Survey, which Heinz supported and helped finance, was a progressive feminist named Elizabeth Beardsley Butler. Butler praised the conditions and comparative pay for women at Heinz Company, but still found the pay lacking in an overall perspective. Butler argued that a working girl needed better than $7 a week to be self-supporting. In 1907, only 20 percent of Pittsburgh's working women were making better than $7 a week, and most of these were at Westinghouse Electric, on incentives at Heinz, or among the handful in H. J. Heinz's supervision. Butler argued for both equal pay and equal work, being critical that women did not have the higher paying jobs of men. Butler felt women were unduly restricted from mechanical work, noting, "The women workers do not compete with the men, but have a division of the trade

An 1899 advertisement (courtesy H. J. Heinz Company).

and characteristic. They wash bottles and scrub floors and help about the kitchens. They sort and bottle pickles, prepare raw materials, label and fill the jars of preserves. Their work, in other words, is secondary and comparatively [routine]."[6] Heinz responded over the next few years by moving some women to running can making machines. Some thought it was a strange sight to see women dressed in their hats, blue dresses, and aprons running can making machines.

Like the Japanese work exercises today, Germans such as H. J. Heinz, loved employee singing. The company sponsored an employee choral society. Programs at the employee auditorium included employee solos as well as national opera singers that were playing at the Pittsburgh Exposition. Plays were also held in the auditorium. Employees were often highlighted in the company newsletter, *The 57 News,* and the sales newsletter, *Pickles*. Heinz supported a number of company baseball teams that were extremely popular during the period. Heinz's paternal approach exceeded anything in the United States and was often copied by neighbor George Westinghouse.

Heinz's paternalism was clearly based on the German models he had studied. The treatment and concern for the welfare of his employees had won him gold medals and other awards, and Heinz stood out as a positive in the famous Pittsburgh Survey of 1907. Many Heinz employees found more sanitary and healthful conditions in the plant than at home. Heinz workers tended to be loyal and proud, but there were critics. The workplace was pleasant, but the system was feudal in nature and fostered a type of dependency on the company. Heinz, like Carnegie, gave much back to the community. Many outsiders asked the question of whether higher wages would be better, allowing the worker to care for himself or herself. It's a question that eludes the historian. The question seems to have been asked but paternal capitalists never had the answers. This type of paternal capitalism was considered enlightened management at the time. The clean and caring environment stood in sharp contrast to the dirty, dark, and dangerous jobs of the steel mill. Heinz and Westinghouse were moral and caring men, but their high moral standards often brought a type of pride in that they knew better than the worker about their own welfare. Heinz did allow his best workers to progress to better jobs and high paying incentive jobs.

Heinz, however, can be distinguished from Andrew Carnegie's view. Carnegie believed he was one of a selected few destined to improve society and better distribute wealth. Carnegie's giving focused on cultural improvements. Carnegie's wages were low and the workplace conditions were horrible. While originally from the lower class, Heinz seemed to have lost touch with the worker. Still, Heinz understood the worker better than most capitalists. Heinz felt he had to protect the workers from themselves and society. H. J. Heinz would often get directly involved with his factory workers and might help with a personal problem. Carnegie kept his managers close, but avoided direct contact with the thousands of laborers. Heinz was more demanding of his managers and more likely to be critical of them. Heinz used much of his discipline on his managers. Carnegie, however, was kind and forgiving of his managers.

As all capitalists of the time, Heinz opposed unions, and it may seem strange that paternal capitalists such as Heinz and Westinghouse, stood on the same side of the fence as capitalism's devil, Henry Clay Frick. All three of these German neighbors shared a fierce opposition to the establishment of unions. Unions were considered a dangerous outgrowth of socialism, and German paternal management had evolved to prevent the growth of unions. All three were from German middle class "Gray" parents, who had a distinct fear of unions and socialists. The middle class artisans, craftsmen, and independent farmers had been oppressed economically in the Germany of the early 1800s. First, German free trade had stripped the middle class, losing jobs to the factories of England. The German middle class emigrated to France and the United States, and became known as the Grays. As the middle class left or stayed and suffered in Germany, the radical German socialists caused a revolution in the streets. The middle class German felt deserted by both the government and the socialists. In the 1860s a new wave of poorer, socialist-leaning Germans came to America (known as "Greens"). For the most part, the earlier German Grays had been successful in their transfer to the United States, becoming storeowners, skilled laborers, successful farmers, and craftsmen. They wanted no part of the German socialists who once again threatened their newfound success. The socialism of Europe meant only riots in the streets and a reduction in opportunity for the middle class.

Heinz had been in the middle of socialist riots in Europe as well as the Great American Railroad Strike of 1877. Union leaders had toured the Heinz complex and had given it high marks. Much has been made of these favorable reviews, but Heinz's paternal approach did have limitations. The whole system was highly dependent on H. J. Heinz, and the company lacked a constitution to assure the future. Heinz Company was blessed with Howard Heinz and later Jack Heinz, who followed H. J.'s principles. H. J. had built a culture of loyalty and paternalism. Heinz failed to see the shortcomings of capitalism in the aggregate. Paternal management is dependent on the company leader and its line of succession. Paternal capitalists such as Heinz and Westinghouse strongly favored the approach of President William McKinley, who came from a middle class family and believed paternal capitalism was the answer to the socialist movement in America.

The 1890s and 1900s were the peak and golden years for paternal capitalism. President McKinley and later Roosevelt were not naive, realizing that capitalism had a greed component that would require the government to act as a referee and protector of last resort. Furthermore, McKinley believed in the protection of domestic industry, which also found support with the Gray Germans. Even Samuel Gompers, the Father

of American Unionism, believed that paternal capitalism was the path for America. Strikes and unionization were more successful in good economic times, not the depressions that favored socialism and riots. As most union leaders did, Samuel Gompers pointed to the ideal of Heinz and Westinghouse. Other great capitalists like Charles Schwab held Heinz as the ideal. The problem, however, was that Heinz and Westinghouse were not the norm.

Heinz's other neighbors, Frick and Carnegie, represented what could go wrong with paternal capitalism. Both Frick and Carnegie believed they were endowed by providence to manage the system of capitalism. They ran profits up by holding wages down and then distributed the money back to cultural endeavors in the community such as libraries, museums, and schools in a belief of the need to improve the immigrant. This view saw immigrant laborers as below the norm of good society. Christian denominational bias played a role too. Frick, for example, saw the Catholic immigrants as less than full Christians. Heinz and Westinghouse, as Presbyterians, had an ecumenical view of the world. This broad ecumenical view translated in fairer treatment in the workplace. Heinz's Lutheran background probably helped in this respect. When the Heinz family immigrated to Pittsburgh in the 1840s, German Lutherans were only a very small step up the social ladder from Catholics. Heinz's family was well aware of their lower status in a Scotch-Irish town.

Heinz Company and Westinghouse Company were the first to establish pension, health, and disability benefits. Westinghouse led the way with major company support of the benefits. Westinghouse's charity mainly went to his workers, although he did give and work for the YMCA. He was one of the first to back pensions and disability insurance. Westinghouse helped build worker housing and built the City of Wilmerding. Heinz focused on health care and dental care. For immigrant families, Heinz offered English and citizenship classes. Home skill classes such as sewing and cooking classes were also offered to young female employees. A job at Heinz was the ideal employment for a young girl prior to marriage. On a personal level, Heinz would help single mothers and career working women with college classes at Duff's Business College. He also offered upward mobility for such women into the management ranks.

In 1905 Heinz's employees established a Mutual Benefit Association to deal with disability and sickness. The benefit program was employee owned, but Heinz supplied resources to help in its operation. The employees made a contribution each pay period. The payout, if needed, was $2.50 for the first week and $5.00 a week for the next fifteen weeks. The company supplied free life insurance after three months of employment, and the payout increased with each year of employment. The initial

payout for death was $250; after five years of employment it increased to $1000. These plans were slightly ahead of those in other industries, but not unique for the time. Immigrants in Carnegie's steel mills had learned to insure themselves against the real possibility of accidental death and disability. Heinz's free health checks and aids were clearly more preventive in nature, which were unique in the industry. Heinz led the industry in preventive measures, while Westinghouse led in pure benefits. Still, both companies were among a handful that even addressed benefits. Westinghouse and Heinz were both very approachable in times of family crisis; however, this personal touch was lost as the companies grew and the founders moved on to other interests.

The "department of social economy" managed the overall care of employees. This department was formed around 1898 and acted as a cross between a human resource department and an advertising department. H. J. Heinz was proud of his application of German paternalism, and he had won gold medals at the Paris Exposition in 1900, the St. Louis World's Fair of 1904, and the regional Jamestown Exposition of 1907. Heinz loved the attention to his company. In 1907 H. J. Heinz told a *New York Times* reporter: "If this success were attainable only through the sacrifice of health, comfort, or happiness of our employees then our company would never want to take another Gold Medal."[7] The Department of Social Economy did a great deal of photographic work, producing early stereopticon slide shows for world's fairs as well as daily shows at the Heinz Pier in Atlantic City and the factory tours in Pittsburgh. Heinz used the slide shows at his famous electric sign in New York as well. The shows often stressed the cleanliness of the operation. The well-manicured girl in a white mobcap and apron became a symbol of purity for Heinz products.

One of the early successes of the Department of Social Economy was the implementation of a cross-training program. There was a planned shifting of workers to learn other jobs. Worker flexibility was an operating must for the diversity of jobs in the Heinz operation. Seasonal requirements varied widely, and cross training allowed for a smooth transition. Once again, Heinz was decades ahead of American industry in such techniques. While Heinz did not supply housing, the company did help employees find housing. The department supplied employee help for citizenship tests and income tax help.

Heinz also supported a wide array of employee organizations and clubs. The employees had meetings in their departments to discuss and resolve problems. Similarly, the foremen and supervisors had their own meetings to review problems. There were men and women's social clubs. Social activities included dances, special shows, organ recitals, and picnics.

There were more and more noon time social activities. The employees published their own newspaper. Heinz worked hard to make the workplace an enjoyment.

Heinz also studied wages in Europe and the world. From 1895 to 1915, he kept a scrapbook of newspaper clippings on economic and work issues.[8] In 1905 French women were making from 30 cents a day to 50 cents a day in industry compared to $1.50 and up at the Heinz plant. A carpenter at Heinz would make about $2.60 a day in 1905, compared to $1 a day in Germany, $1.10 a day in France, 58 cents a day in Belgium, and 39 cents a day in Spain.

The difference was even greater in heavy industry. Steel rollers made $5 to $6 a day, while rollers in Austria and Germany made under a dollar. American laborers worked 48 to 50 hours, making $1.75 to $2 a day, while 60 hours was the norm in Europe, and laborers made 30 cents to 40 cents a day. In addition, Europe's inflation kept prices higher than those in the United States. The economic imbalance kept the immigrants coming to the U.S., and American industry routinely advertised the better wages to encourage that immigration. Heinz did not actively recruit in Europe, but the steel companies did, and with the immigrant laborers came wives and daughters needing employment.

Heinz did choose the term "sociological department" in the late 1890s. Heinz's use of the term seems to predate later pioneers in industrial sociology, such as Whiting Williams (1878–1975) and Emile Durkheim (1858–1917). The term appears to stem from the idea of applying the "social gospel" to industry, which is exactly what Heinz did. Henry Ford made the use of the sociological department famous in 1916 by hiring an Episcopal minister to head it up. Ford's sociological department was more intrusive into the worker's private lives. Ford tried to make workers conform to his set of values. Heinz's approach was less intrusive, but Heinz did expect some conformance with his managers and salesmen to general Christian values. The average worker was held to no such standard. H. J. Heinz believed that the Golden Rule in industry had its own rewards, and was broad enough to cover all religions. He did believe that the Golden Rule was necessary for capitalism to function properly.

Heinz's view of capitalism evolved over the years. He had grown up as a Lincoln Republican committed to a nationalistic capitalism and protectionism. Heinz, like his fellow Republicans, was highly patriotic, believing in American exceptionalism and supporting government action that would help domestic industry. Heinz Company, after Rockefeller's Standard Oil, was a major user of tinplate for cans. Heinz was forced to buy high priced foreign tinplate because of lack of domestic manufacturers. The tinplate industry had to pay for expensive imported iron and

steel because of no domestic production, which allowed importers to charge whatever they wanted. At the same time, tinplate and tinplate products were imported cheaply, which suppressed the development of a domestic industry. Prior to 1890, there were a handful of tinplate manufacturers in the United States, but by 1892 after the McKinley Tariff, there were 200 manufacturers producing 13,000,000 pounds of tinplate. Many feared that England would increase the price of "black plate" needed for tinplate production. The American producers, however, responded as President McKinley had predicted, producing 5,000,000 pounds of black plate in 1892. Fifteen months after the passage of the tariff of 1890, McKinley toured a new state-of-the-art tinplate mill built in Ellwood, Indiana.

The price of tinplate dropped dramatically by 1895, as the McKinley tariffs created a very competitive iron industry and technology improved through putting profits back into the business. As the price increased, American investors poured into the tinplate and canning industry. As a Union Army quartermaster, McKinley knew well the shortage of canned food to supply the army. The tariffs not only brought investors into tinplate, but into the biggest use of tinplate—canning. The success in actually reducing prices was dependent on a symbiotic relationship with American industrialists. In 1900, however, abuses started, including a Tinplate Trust, which ultimately increased prices again. The progressive Republican administration of Teddy Roosevelt would break up the trusts.

Like McKinley, he eventually looked to exports as a key part of America's manifest destiny. In the early 1900s, Heinz became a follower of President Roosevelt's progressive Republicanism. He formed a political relationship with Roosevelt during the quest for pure foods. The use of government to apply pressure and even control became an adopted principle. Heinz became a full progressive, becoming a supporter of Teddy Roosevelt's independent campaign for the presidency in 1912. Heinz did a great deal of campaigning for Roosevelt in that independent campaign. His brand of capitalism believed in a mix of free domestic market, paternal management, scientific protectionism, aggressive exporting, and government overseeing of business. Heinz advocated the government as a referee in business abuses.

In 1912, H. J. Heinz Company published a booklet of founding principles. The mission and principles were defined clearly:

> To raise, on Heinz farms, and farms under Heinz supervision, everything which is packed under the Heinz name.
>
> To raise all such products on farms located where soil and climate combine to produce the choicest and finest fruits and vegetables for the particular purpose intended.

To make, in so far as possible, everything used in preparing and marketing Heinz products, including materials, cans, bottles, labels and boxes.

To demand, in all things purchased, the best on the market.

To discard everything in which the most rigid inspection detects the slightest flaw.

To provide every known facility and equipment which can raise or maintain quality standards, so housed and installed as to insure the most perfect results.

To secure, for every department and detail of the work, the most capable and efficient men and women.

To insure, so far as is possible, the comfort, welfare and happiness of all employees.

To consider at all times every thought and suggestion looking to the improvement of Heinz products, and their adaptability to the requirements of the public.

To subordinate the question of profit, considering it only in light of safe business procedure, the solidarity of the business and the best interests of the employees.

And this platform, if it may so be called, having in view only those principles and policies which deserve success, has enlisted the loyal and unswerving support of the American people, and has therefore won a material success of a most conspicuous nature.[9]

Compare this to mission statements typical of today, and you see a powerful direct approach of Heinz on what is expected. These are clear action steps, not general and nebulous statements. Heinz states his belief in vertical integration known as "soil to the consumer." He had a frieze made of this concept for the Administration Building.

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Heinz the Man

H. J. Heinz, the person, is a bit more complex than the saintly figure of his early biographers. He was a strict disciplinarian, a role he had developed as the eldest child in the family. The illness of his own father made him the family patriarch, a role he felt comfortable with at home and at work. Heinz could be tough and demanding on family and salesmen that represented the company. He would not hesitate to fire problematic salesmen. He did have some cause early in the company when several drunk salesmen had driven teams of horses wildly through the city. Stiff lectures were common, and in the early days salesmen might have been asked to take a temperance oath. This sometimes created problems, since the Pittsburgh German immigrants and majority Scotch-Irish natives opposed the temperance movement. With the average employee, he was much more gentle, demanding only loyalty in return. While caring and deeply religious, he was not as gentle as his neighbor George Westinghouse, but he was every bit as paternal.

He could be harsh and demanding on family employees. He had pushed out brother John and had broken his brother Peter. He was an extremely driven and demanding man. He out worked any competition and demanded the same of family members. He was always ready to help his brothers and family, but business was different. With his father's breakdown in 1876, Heinz became the patriarch of a large family. His mother had also put him in the role of disciplinarian for his brothers and sisters. Clearly, that paternal role carried over to his family business. The high standards he set, he met personally, but few others could meet them. He could bog the organization down with details, which had served him well in the beginning, but not as well in a large corporation. He realized this and in 1901 hesitated to move forward with the expansion of the company. A patriarch had a limited span of control and Heinz initially feared

Incoming tomato inspection at Salem, New Jersey, 1911 (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 15).

going beyond that point. Fortunately, he appointed loyal managers such as his brother-in-law Sebastian Mueller. Heinz had a hard time delegating, but Howard was the ideal son of the founder and corporate executive. Howard learned to manage with his father overseeing. Howard knew when to obey and when to challenge.

Even with supervision and office workers, Heinz could be stern. The image of a Father Christmas would be a mistake. In spring of 1906, he called a special meeting of his office and supervisory employees in the auditorium.[1] He was facing some typical organizational problems and he wanted to confront the issues head on. First, he was having trouble filling higher positions internally because of poor training and career jealousy. In particular, the new trend towards hiring college graduates was creating some division. Older, less educated employees were not helping in training these college graduates. Also, the high salaries of incoming college graduates were frustrating older and lower level office employees. Heinz cajoled them, but demanded they help in the training. He ended with: "If you are not in line, fall in line at once and try it. If you think I am wrong,

H. J. Heinz (in dark suit) and Clifford Heinz (in light suit) testing new plow technology at Muscatine farm (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 15).

let us help you get something to do elsewhere. It means to get into line or get out."[2]

Heinz struggled with delegating authority to his upper management and his son. He was certainly not unusual for first generation owners in this regard. His other interests and travel forced him to delegate, but Heinz tended to meddle and second-question. Howard Heinz and Sebastian Mueller had learned to live with and accept this meddling, but many managers and family could not. Heinz looked at the company as family and he was the patriarch. Heinz did delegate more as he aged, but he always remained the corporate patriarch. Heinz's knowledge was respected, and none one understood the corporate mission better. To his death, he remained part of the brand strategy.

Heinz was a great propagandist, often printing booklets for his employees. Many times he reprinted motivational stories. Some of these booklets were very philosophical, such as his "Your Work is Your Brain's Gymnasium" in 1902. In this employee booklet, he argued that work in itself is the employee's greatest reward. He argued that pay was not

important, one must work for oneself. He further argued that doing less than your best cheats yourself more than your employer. Heinz hated disloyalty, but he feared negativity in the organization more. When he told his office employees that if they were dissatisfied, he would find them a different job, he meant it. He respected an employee who came to him wanting to leave rather than infect the organization. He would move employees to different departments or branches, and even to other companies to avoid negativity. He realized negativity destroyed organizations. If an employee left and didn't find things greener, he often allowed the prodigal to return. On the other hand, loyalty and hard work could win one many promotions.

One of H. J. Heinz's most overlooked strengths was his ability to build organization and establish corporate culture. He had a brilliant mechanic in his brother John, a gifted gardener in his cousin Fredrick Heinz, and an excellent manager in his brother-in-law George Henry Praeger. Praeger actually purchased some of Fredrick's shares and was a partner in 1879. Over the years, Praeger worked as a corporate administrator. In the 1890s, H. J. Heinz added brother-in-law Sebastian Mueller to the firm to run the manufacturing operation. He had great sales managers in R.G. Evans, C. E. Helen, and Nevin Woodside. Most importantly, he developed a true "Pickle Army" of loyal employees. He honed the organization of poor managers. Employees were trained in Heinz's business as well as his ethics. The organization was expected to follow his guidelines as he traveled. Upon his return, Heinz adjusted for any deviations in the organization. His organization reflected H. J. Heinz in all aspects.

Heinz was a true Victorian, certainly influenced by the norms of the time. His required treatment of women in the workplace was strictly Victorian. He demanded high moral behavior by the men interacting with women workers. His lower pay for women fit the norm of the time, and Heinz saw no inconsistencies in it. Religious beliefs were freely expressed in the workplace; biblical quotes were common in corporate communication. He talked and wrote often about the use of the "Golden Rule" in the workplace.

Heinz had a strong personality and once decided would stick to his course of action. Heinz's private secretary and biographer E. D. McCafferty noted: "When he was convinced, his conviction became an enthusiasm that burned with a vital flame. It was, indeed, like a white heat that fused all his organization to one purpose. So intense was it that few men could stand up against it. Opposition was half defeated before it asserted itself."[3] Still, he was known as a listener and a compromiser. He did have a temper that is common with such self-made men. McCafferty said, "He could, and did, become stirred to great angers; and no man with

Horse drawn streetcar, 1909, London (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 16).

one experience of these willingly incurred another." Heinz always reserved his determination and anger to managers, family or men of equal status. With the worker, Heinz showed a mild demeanor.

Another part of Heinz the man was his belief in self-destiny. Part of his belief was a deep-seated German independence. He believed to a fault that hard work would result in success. This is the reason he pushed his sons so hard. He took them to work early in their childhood and demanded that they work the front line jobs for years. Heinz's belief in self-sufficiency was both strength and a weakness. He pushed family too hard, believing it was for their good. He viewed life from his own experience and found it hard to see it through the eyes of others. He did believe that his financial success was ordained by God; he had an obligation to care for the less fortunate. He did not go as far as Andrew Carnegie, who believed there was a rich class designated by providence to gain and distribute the world's wealth. Heinz was too humble to believe that. Heinz had tithed and given from his earliest working days. Like Westinghouse, Heinz believed the best charity was his own workers. Men like Carnegie often overlooked

their own workforce to achieve what they considered a greater good. Heinz's own rise in business convinced him that success was achievable by all with hard work.

What many of these Pittsburgh capitalists shared was their view on money. To them it was about achievement, not money. They went as far as to believe that money itself would corrupt. Carnegie bequeathed only enough money for his wife and children to live out their lives in comfort, fearing money would corrupt future generations. Heinz had a similar view, but passed on the company to the family. Heinz never gave money readily to his sons or grandsons in fear of corrupting them. He never used money as an incentive for the children either. Heinz saw the early struggle to overcome as his best years, and he wanted his children to understand at least a small part of the struggle. In life he could be indifferent to the needs of family members. His sister Henrietta once complained he didn't fully understand the cost of a dress.

After his neighbors such as Carnegie and Frick sold their businesses for fortunes and retired, Heinz was asked about selling his. Heinz's reply: "I do not care for your money, neither do I nor my family wish to go out of business. We are not looking for ease or rest or freedom from responsibility. I love this business. Your talk of more money and less responsibility means nothing to me. To stop work is death ... mentally and physically. This business is run, not for my family or a few families, but for what we call the Heinz family ... the people who make our goods and sell them. The Heinz policy is to work for a better business rather than a bigger business; to make, if possible, a better product, and to make better people as we go along. We are working for success, and not money. The money part will take care of itself."[4] Not all of the immediate family would have agreed, but they all would have agreed that is how H. J. truly felt. Heinz had refused to join a food processing trust in the 1890s because he could not give up any control, and the same was true in the 1900s with the issue of selling the company.

One side of Heinz less reported was his patriotism. While Heinz never served in the military, his support of veterans was well known. Veteran organizations could always get financial support from Heinz Company for local events. Heinz supplied goods and advertised for any veterans event. Veteran employees were always highly honored in print and at company events. He had helped support America's effort in World War I and promoted war bonds within his organization. While Heinz Company was one of the first American international companies, H. J. Heinz always believed in America first. Domestic investment came first and was supported by international profits. He staunchly supported the Republican protectionist policy throughout his life. Heinz and his fellow

capitalists of the time made the Republican protectionism work. Tariffs greatly increased profits domestically, but Heinz poured these extra profits into plant expansion and job creation. H. J. Heinz probably was closest to William McKinley in philosophy. They both believed in American exceptionalism and American economic destiny. He saw the spread of American and Christian concepts as a natural offshoot of American economic expansion. This view, which was common for the period, is little understood today. He took American values to his European operations, but like a true missionary, he blended in slowly and seamlessly.

McKinley had actually started the progressive movement to address the rise of trusts and monopolies, but his assassination passed the issue to Teddy Roosevelt. Heinz stood firmly behind the Republican progressivism that took on monopolies and trusts. He was an international businessman with extensive world sales, but his American operations were the first priority. Heinz was at odds with the Republican Party bankers who wanted free trade and expanded imports because they made money on trade. Heinz was also in a position to profit from the elimination of tariffs, but he put the nation first. Patriotism took priority over all business concerns.

A story told in one of Heinz's eulogies demonstrated his well-known patriotism. H. J. had returned from one of his European journeys to inspect the work on his new office. The artist had included many portraits in the frieze. H. J. Heinz questioned the artist as to the identity of the portraits. The artist replied, "There is Savonarola, Michelangelo, Moliere, and Goethe." Heinz replied that "will be enough." He declared: "I am an American in every fiber of my body and heartbeat. These were very eminent gentlemen, but they did not even know America. Scrape them out and insert a few Americans of the type of Longfellow, Franklin, Whittier, Lincoln, Emerson, our own poets and statesmen. So far as those portraits are concerned this must be an American room." The same was true with Heinz's own art collections, which favored American history and artists.

Another virtue was his love of Pittsburgh. Most of Heinz's golden neighborhood of East Liberty–Homewood had moved on to secondary homes in other locations. Henry Clay Frick and Andrew Carnegie lived primarily in New York, escaping the dirt and smoke of Pittsburgh. Even George Westinghouse lived primarily at two other residences in Berkshire Hills and Washington. Heinz had only one residence, his beloved Greenlawn. Heinz loved Pittsburgh and he tried hard to fight against the smoke and pollution. He tried his best to clean up North Side when most had deserted it. He was a key supporter of the University of Pittsburgh in its early days in Oakland. In his will he left $250,000 (about $4.5 million in

Horse rail car in London, 1912 (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 16).

today's dollars) to the university. He gave freely to major hospitals in the Pittsburgh area, particularly the Western Pennsylvania Hospital, where he served on the board of trustees. He not only gave his money, but he gave his time. He served on key commissions on smoke abatement, disease control, and parks. These early commissions laid the groundwork for the first renaissance of Pittsburgh. He donated and worked for the development and growth of Pittsburgh's universities. Heinz made sure to involve his sons in these projects to assure a long-term legacy for the Heinz Company. Heinz proved his heart was in Pittsburgh.

Much of Heinz's time, money, and treasure went to spread Sunday schools throughout the world. Heinz was known for his support of Sunday school associations, but he was also very involved in two Christian youth movements—the YMCA and Christian Endeavor. Christian Endeavor had started in 1881 in Portland, Maine. It was a ministry that asked youth to sign a two-page commitment, and it promoted temperance. In the 1900s, Heinz had come to believe the best hope for temperance was its promotion in such youth organizations. Heinz was proved right, as the co-founder of Alcoholics Anonymous, Dr. Robert Smith, attributed his basic principles

to those of Christian Endeavor. Christian Endeavor's membership peaked in 1907 at 7 million. Heinz spoke at the quarter-centennial convention in Pittsburgh, noting: "In this age of material prosperity we need to hold fast to the truth that manhood is more important than money. We are not prosperous if we are losing Christianity. Recent disclosures in commercial life have revealed a shocking disregard of the Ten Commandments and the Golden Rule. The consciences of our people have been awakened. Let the Christian Endeavor Society take advantage of this opportunity to press home on the minds of the young who come within the range of its influence that the important life is a life of unselfish services for others; that integrity and Christianity, not gain and power, are the badges of honor."[5]

Another uniquely Heinz philanthropic effort was the Sarah Heinz House, at the time considered a "settlement" house, an extension of paternal capitalism in Pittsburgh. They were outreaches to the children and the immigrant tenant house families. The Kingsley House of 1895 was one of the first, and it had the support of capitalists such as Andrew Mellon, Andrew Carnegie, and Henry Clay Frick. Settlement houses functioned as well financed YMCAs. Many, like the Kingsley House, focused on the learning of life skills and work skills. The settlement houses also offered adult courses in language and citizenship for immigrant families. These settlement houses, while often formed by churches, were ecumenical, although Christian based. They often coordinated or overlapped with the YMCA. Catholic immigrants in Pittsburgh were slow to deal with the YMCA because of its perceived Protestant bias. Jews had their own settlement houses such as Columbian House.

Heinz envisioned a Christian based settlement home, but steered clear of any specific denominational tie. The house motto was "Youth, Recreation, Character, and Service." He did require a temperance oath, but this was acceptable with all faiths for youths. Sarah Heinz House was to be a Christian House that showed Christian principles by action, not preaching. The founding principles were based on the Golden Rule. This was a front line operation open to any child of need. Heinz wanted to get poor city kids off the streets and give them an option other than gangs. H. J. noted at the June 6, 1915, dedication of the Sarah Heinz House: "I do not know what percentage of the young people connected with this work is Protestant or what percentage is Catholic. Furthermore, I do not want to know. No sectarian bias will influence the work of this institution....[6] It is our desire to surround the boys and girls of the neighborhood with such good influences that they will never want to depart from the right paths." This was also consistent with the original setup by Howard Heinz in 1901. Most of the kids in the Pittsburgh streets were Catholic immigrants, and Heinz realized that they needed help too.

Traveler's grocery demonstration table, 1909 (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 16).

Heinz's model was unique in many ways, based on Howard Heinz's training at Yale. Clubs were formed around interests and activities. Club members received general training in parliamentary practice, basic business practices, and banking skills. Clubs often ran social events to collect income for trips or to pay membership dues. These young boys learned business principles first hand in the management of their own clubs. The house acted as a city social network, tying into organizations such as the YMCA, YWCA, and Kingsley House. The Kingsley House Association opened the clubs to a ten-day camping experience at its country camp (Lillian Home) at Valencia, Pennsylvania. This camping experience was free to the youth. Sarah Heinz House also coordinated lectures with the Carnegie Museum. More cutting edge was the Sarah Heinz House work with the neighborhood "little mothers." Magee Hospital had a maternity dispensary at the Heinz House. The City Health Department offered free help and training for these young mothers. There was also coordination with the juvenile courts. The Sarah Heinz House remains today and presently is undergoing renovation.

Heinz's giving stayed below the radar of the press in most cases. Heinz

tithed 10 percent to his church throughout his life, but his giving to various church projects went far beyond that. Winona Lake, Indiana, summer camp was one of the many smaller projects taken on by H. J. Heinz. The Christian summer camp had been struggling for years. The bible camp was near bankruptcy when J. H. Heinz and others such as William Jennings Bryan rallied Christian groups to save it. Eventually, Heinz and others raised a million dollars to support the future operation of Winona. This was typical of Heinz's charity that never made the secular newspapers. Heinz's giving was often overlooked by the press for the big dollar gifts of local steel magnate Carnegie for libraries and museums, but both men touched the hearts of many generations. Even more forgotten is the out-of-pocket help given to an employee in need. Heinz also included many charitable expenses in the company's operating expenses. Employees that could not afford good working clothes were often given them by the company. One year he approved a corporate fund to feed street beggars. Feeding street beggars would be one of the little known legacies of this unusual capitalist.

17

Legacy

His grandson, Henry Heinz II, on the 100th anniversary of the company, best defined Heinz's business legacy in 1969: "Consider what has grown out of that 16-year-old boy's vision. Tens of thousands of people have found rewarding employment. Millions upon millions of people around the world have enjoyed better nutrition. Farmers have reaped the benefits of agricultural research that they never could have afforded on their own. Infants have been nourished better than infants in the history of man. In country after country entire economies have been elevated by the application of scientific methods to agriculture, processing, and preserving. All of this because—to use the modern vernacular—a young Henry Heinz wanted to do his own thing."[1]

Heinz's maxim on money characterized his paternal capitalism: "Make all you can honestly, save all you can prudently, give all you can wisely. He that enjoys the two former and deprives himself of the latter privilege denies himself the greatest enjoyment of life." This was the dictum he hung in his offices. H. J. Heinz's philanthropy was a mix of small, medium, and large endeavors. Heinz focused more on his church and community needs than libraries and buildings. A great deal of his donations went to the Methodist Church and related organizations. He served in the 1890s on the Methodist Protestant General Conference. He was a major contributor and a member of the board of the Methodist's Adrian College in Michigan. He had been a major contributor and one of the trustees of Kansas City University, also operated by the Methodist Church. At Kansas City University, he built a Memorial Hall in honor of his wife. Later in 1906, he served on the national College Board of the Presbyterian Church. Besides tithing he helped the church often with additional money and product donations. His endless donations of money and time to Sunday schools are incalculable.

His philanthropy may well be judged more by his time than his money. He always had time for Sunday school and church functions. Even in the midst of his early bankruptcy, he found time for a church service and teaching Sunday school. He served for more than twenty years as a superintendent of the Methodist Sunday school. For over twenty years, he traveled once a month to Philadelphia to the state Sunday school association meeting. He traveled to at least three international and world meetings of the Sunday School Association. When he traveled, he visited Sunday schools to take notes on methodology. He had been a teacher for 12 years, but often studied techniques used across the world. He loved to host Sunday School Association meetings in Pittsburgh and take members through the North Side factory. His giving to the Sunday School Association was significant, but it rarely made the newspaper. H. J. Heinz was truly the William McGuffey of Sunday schools. In 1915, Heinz was made honorary superintendent of Grace Sunday School in Sharpsburg.

When H. J. died, Howard was in Europe, but rushed home to assume the presidency. Howard remained loyal to his father's vision, implementing an annual Founder's Day. Howard was 42 at his father's death and had accumulated much administrative experience functioning as the CEO for a number of years. Howard was a quiet leader compared to H. J. but just as skillful. Howard was considered a natural businessman. He had worked in the front lines such as salting stations as a teenager and shift factory assignments as summer work during college. When asked in an interview a few years later to define the ideal businessman, Howard replied: "My father."[2] Howard explained his management style as "the fulfillment of my father's plans for industrial and social betterment, by carrying out faithfully the principles he laid down for the conduct of the business." Howard and H. J. had become one mind by the founder's death. H. J. had rewarded Howard not only with the vice-presidency, but had given the Sarah Heinz House in 1914.

Son Clarence would never function under the driven and somewhat harsh treatment of the founder. Clarence was considered an invalid. Bitter with his role, Clarence lived with H. J.'s brother Peter in Lake Geneva, Wisconsin. H. J. Heinz did leave a lifetime trust of $25,000 a year for Clarence in his will. His youngest son, Clifford, had a successful career at the company, but in the shadow of Howard. Clifford, Howard, and Irene would share the balance of H. J.'s estate after bequests. Heinz left stock and trusts to his sisters, Henrietta and Mary. Henrietta got the most in recognition of her housekeeping duties. Henrietta received $100,000 in stock (almost $2 million today), while Mary received a $5000 a year trust for life. Brothers Peter and John and their children also received lifetime trusts of lesser value.

World Sunday School Association in Rome, 1907. H. J. Heinz is number 4 in photograph (courtesy Benson Ford Research Center, The Henry Ford, 53.41 Box 16).

Heinz's public bequests in his will included $250,000 (about $4.5 million today) to the University of Pittsburgh in honor of his mother. Of that amount, $150,000 was left for a building, which became the Heinz Chapel on campus. The Heinz Chapel did require the additional funds of Irene, Clifford, Clarence, and Howard in 1938. Another $100,000 was a designated trust for "Chair of Sunday Sunday-School Education." The largest bequest was $300,000 to the state and national Sunday School Associations. Another $55,000 was left to various Pittsburgh hospitals and $30,000 to various social service groups. Another $10,000 was left to the Sharpsburg Methodist Church. Heinz's collections of ivories, watches, and canes were left to the Pittsburgh Carnegie Museum. The other parts of his vast collections were divided among family members.

Brother-in-law Sebastian Mueller (husband of sister Elizabeth Heinz) had a key role in the company's success as the operations manager. He loyally functioned as H. J.'s right hand man and mentor to Howard. Howard said Mueller was "the man who had made the greatest impression on the Heinz business, with the exception of the founder."[3] Mueller

remained an officer of the company to his death in 1938. Mueller had lived with much personal pain. His two daughters died in infancy and his son died at eighteen. Mueller left funds for the development of Eden Hall Farm, which became a retreat for Heinz's women employees. Eden Hall was a free vacation retreat for years.

C. E. Helen was one of H. J. Heinz's most successful non-family executives. In the last years of H. J. Heinz's life, he and Helen had been planning for a state-of-art factory in England. Helen had proved to be one of Heinz's most skilled managers, and seemed cut in the mold of H. J. Heinz. The great factory they envisioned was built in 1925 at Harlesden. The factory reflected the red brick-manufacturing palace in Pittsburgh. It included the green design of the founder with gardens and flowerbeds. C. E. Helen rose to chairman of Heinz Company in England and held that position to his death in 1945. Helen left his imprint on England, introducing baked beans to the British. Today, England has the highest consumption of beans at 12 pounds per person. Helen's right-hand operating manager from 1910, Angus Stott, ran the Harlesden plant to 1937.

H. J.'s son-in-law, John LaPorte Given (husband of daughter Irene), did not fare as well. Like many of the family, he could not prosper under the demanding H. J. Heinz. Still, the Heinz family remained in control with gifted executives such as Jack Heinz. Howard took over the presidency on H. J. Heinz's death, and in 1941 his son, H.J. Heinz II (Jack), succeeded Howard. The family had always believed that it was H. J. Heinz's will that Jack run the company. Jack Heinz led the company until 1966, when the company passed for the first time to a non-family member. In 1971, H. J.'s great-grandson, John Heinz, became a United States senator. John Heinz would continue to represent the progressive wing of the Republican Party, being known for his protectionist views and efforts to clean the environment. Senator John Heinz died in a plane crash in 1991. His wife, Teresa Heinz, is now married to Senator John Kerry. The Heinz family remains an integral part of Pittsburgh and local charities.

H. J. Heinz Company remains a premier food company to this day. Known best for ketchup, Heinz Company still remains a pickle company as well. The Heinz Holland pickle plant is the world's largest, covering over 28 acres with 17 buildings. The Holland plant processes over 700,000 bushels of pickles each year. Americans eat 29 billion pickles annually. In bottled vinegar, which H. J. Heinz pioneered, Heinz Company remains dominant in the American market. Heinz today sells over a billion dollars in ketchup in 140 countries. It has double the ketchup market share of its nearest competitor. The exact Heinz recipe for ketchup remains a secret. Ketchup is in 90 percent of all American homes. In baked beans, Heinz Company continues to dominate the British market for beans. Worldwide

Heinz Company sells 1.5 million cans a year and England consumes 451 million cans of baked beans. Heinz Chili Sauce and mustard still dominate the grocery shelves. International headquarters remains in downtown Pittsburgh, and its "green roof" is a tribute to H. J. Heinz's pioneering of the green movement. No single man has impacted an industry, culture, and market as did H. J. Heinz.

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2. Heinz Recipe Notebook, Archives of Heinz History Center.
3. Andrew F. Smith, *Pure Ketchup* (Washington, D.C.: Smithsonian Institution Press, 2001), p. 87.

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3. Andrew Smith, *The Tomato in America* (Columbia: University of South Carolina Press, 1994), p 37.
4. *Scientific American,* Vol. 3, No. 51, September 9, 1848.
5. "Pittsburgh's Millionaires," *New York Times,* June 2, 1907.
6. Richard Pillsbury, *No Foreign Food* (Boulder: Westview Press, 1998), p. 34.
7. Pillsbury, p. 34.

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2. McCafferty, 34.
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4. Eleanor Dienstag, *In Good Company* (New York: Time Warner Books, 1994).
5. Harry Gilchrist, History of Wilkinsburg, Pennsylvania (Pittsburgh, 1940), p. 104.

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1. William Serrin, *Homestead: The Glory and Tragedy of an American Steel Town* (New York: Times Books, 1992).
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2. Suzanne White, "Foods for Special Dietary Use," *Update,* July-August 2006, p. 34.
3. The Henry Ford, Benson Research Center, 53, Box 54, Folder 54.
4. Andrew Smith, *Pure Ketchup* (Washington, D.C.: Smithsonian Institution Press, 2001).
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2. "H. J. Heinz Dies," *The American Food Journal,* June 1919.

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2. Perry Turpin, *Scientific American,* July 30, 1898, Vol. 79, No. 5.

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1. Quentin Skrabec, Jr., *Michael Owens and the Glass Industry* (Gretna, La.: Pelican Publishing, 2006).
2. The "Red Devil" can be seen today in the Frick Mansion Museum in Pittsburgh.

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Senator John Heinz History Center, Heinz Papers

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