CHAPTER ONE

CHILDHOOD

Abandoned and Chosen

The Adoption

When Paul Jobs was mustered out of the Coast Guard after World War II, he made a wager with his crewmates. They had arrived in San Francisco, where their ship was decommissioned, and Paul bet that he would find himself a wife within two weeks. He was a taut, tattooed engine mechanic, six feet tall, with a passing resemblance to James Dean. But it wasn't his looks that got him a date with Clara Hagopian, a sweet-humored daughter of Armenian immigrants. It was the fact that he and his friends had a car, unlike the group she had originally planned to go out with that evening. Ten days later, in March 1946, Paul got engaged to Clara and won his wager. It would turn out to be a happy marriage, one that lasted until death parted them more than forty years later.

Paul Reinhold Jobs had been raised on a dairy farm in Germantown, Wisconsin. Even though his father was an alcoholic and sometimes abusive, Paul ended up with a gentle and calm disposition under his leathery exterior. After dropping out of high school, he wandered through the Midwest picking up work as a mechanic until, at age nineteen, he joined the Coast Guard, even though he didn't know how to swim. He was deployed on the USS *General M. C. Meigs* and spent much of the war

ferrying troops to Italy for General Patton. His talent as a machinist and fireman earned him commendations, but he occasionally found himself in minor trouble and never rose above the rank of seaman.

Clara was born in New Jersey, where her parents had landed after fleeing the Turks in Armenia, and they moved to the Mission District of San Francisco when she was a child. She had a secret that she rarely mentioned to anyone: She had been married before, but her husband had been killed in the war. So when she met Paul Jobs on that first date, she was primed to start a new life.

Like many who lived through the war, they had experienced enough excitement that, when it was over, they desired simply to settle down, raise a family, and lead a less eventful life. They had little money, so they moved to Wisconsin and lived with Paul's parents for a few years, then headed for Indiana, where he got a job as a machinist for International Harvester. His passion was tinkering with old cars, and he made money in his spare time buying, restoring, and selling them. Eventually he quit his day job to become a full-time used car salesman.

Clara, however, loved San Francisco, and in 1952 she convinced her husband to move back there. They got an apartment in the Sunset District facing the Pacific, just south of Golden Gate Park, and he took a job working for a finance company as a "repo man," picking the locks of cars whose owners hadn't paid their loans and repossessing them. He also bought, repaired, and sold some of the cars, making a decent enough living in the process.

There was, however, something missing in their lives. They wanted children, but Clara had suffered an ectopic pregnancy, in which the fertilized egg was implanted in a fallopian tube rather than the uterus, and she had been unable to have any. So by 1955, after nine years of marriage, they were looking to adopt a child.

Like Paul Jobs, Joanne Schieble was from a rural Wisconsin family of German heritage. Her father, Arthur Schieble, had immigrated to the outskirts of Green Bay, where he and his wife owned a mink farm and dabbled successfully in various other businesses, including real estate and photoengraving. He was very strict, especially regarding his daughter's relationships, and he had strongly disapproved of her first love, an artist who was not a Catholic. Thus it was no surprise that he threatened to cut Joanne off completely when, as a graduate student at the University

of Wisconsin, she fell in love with Abdulfattah "John" Jandali, a Muslim teaching assistant from Syria.

Jandali was the youngest of nine children in a prominent Syrian family. His father owned oil refineries and multiple other businesses, with large holdings in Damascus and Homs, and at one point pretty much controlled the price of wheat in the region. His mother, he later said, was a "traditional Muslim woman" who was a "conservative, obedient housewife." Like the Schieble family, the Jandalis put a premium on education. Abdulfattah was sent to a Jesuit boarding school, even though he was Muslim, and he got an undergraduate degree at the American University in Beirut before entering the University of Wisconsin to pursue a doctoral degree in political science.

In the summer of 1954, Joanne went with Abdulfattah to Syria. They spent two months in Homs, where she learned from his family to cook Syrian dishes. When they returned to Wisconsin she discovered that she was pregnant. They were both twenty-three, but they decided not to get married. Her father was dying at the time, and he had threatened to disown her if she wed Abdulfattah. Nor was abortion an easy option in a small Catholic community. So in early 1955, Joanne traveled to San Francisco, where she was taken into the care of a kindly doctor who sheltered unwed mothers, delivered their babies, and quietly arranged closed adoptions.

Joanne had one requirement: Her child must be adopted by college graduates. So the doctor arranged for the baby to be placed with a lawyer and his wife. But when a boy was born—on February 24, 1955—the designated couple decided that they wanted a girl and backed out. Thus it was that the boy became the son not of a lawyer but of a high school dropout with a passion for mechanics and his salt-of-the-earth wife who was working as a bookkeeper. Paul and Clara named their new baby Steven Paul Jobs.

When Joanne found out that her baby had been placed with a couple who had not even graduated from high school, she refused to sign the adoption papers. The standoff lasted weeks, even after the baby had settled into the Jobs household. Eventually Joanne relented, with the stipulation that the couple promise—indeed sign a pledge—to fund a savings account to pay for the boy's college education.

There was another reason that Joanne was balky about signing the adoption papers. Her father was about to die, and she planned to marry Jandali soon after. She held out hope, she would later tell family

members, sometimes tearing up at the memory, that once they were married, she could get their baby boy back.

Arthur Schieble died in August 1955, after the adoption was finalized. Just after Christmas that year, Joanne and Abdulfattah were married in St. Philip the Apostle Catholic Church in Green Bay. He got his PhD in international politics the next year, and then they had another child, a girl named Mona. After she and Jandali divorced in 1962, Joanne embarked on a dreamy and peripatetic life that her daughter, who grew up to become the acclaimed novelist Mona Simpson, would capture in her book *Anywhere but Here*. Because Steve's adoption had been closed, it would be twenty years before they would all find each other.

Steve Jobs knew from an early age that he was adopted. "My parents were very open with me about that," he recalled. He had a vivid memory of sitting on the lawn of his house, when he was six or seven years old, telling the girl who lived across the street. "So does that mean your real parents didn't want you?" the girl asked. "Lightning bolts went off in my head," according to Jobs. "I remember running into the house, crying. And my parents said, 'No, you have to understand.' They were very serious and looked me straight in the eye. They said, 'We specifically picked you out.' Both of my parents said that and repeated it slowly for me. And they put an emphasis on every word in that sentence."

Abandoned. Chosen. Special. Those concepts became part of who Jobs was and how he regarded himself. His closest friends think that the knowledge that he was given up at birth left some scars. "I think his desire for complete control of whatever he makes derives directly from his personality and the fact that he was abandoned at birth," said one longtime colleague, Del Yocam. "He wants to control his environment, and he sees the product as an extension of himself." Greg Calhoun, who became close to Jobs right after college, saw another effect. "Steve talked to me a lot about being abandoned and the pain that caused," he said. "It made him independent. He followed the beat of a different drummer, and that came from being in a different world than he was born into."

Later in life, when he was the same age his biological father had been when he abandoned him, Jobs would father and abandon a child of his own. (He eventually took responsibility for her.) Chrisann Brennan, the mother of that child, said that being put up for adoption left Jobs "full of broken glass," and it helps to explain some of his behavior. "He who is

abandoned is an abandoner," she said. Andy Hertzfeld, who worked with Jobs at Apple in the early 1980s, is among the few who remained close to both Brennan and Jobs. "The key question about Steve is why he can't control himself at times from being so reflexively cruel and harmful to some people," he said. "That goes back to being abandoned at birth. The real underlying problem was the theme of abandonment in Steve's life."

Jobs dismissed this. "There's some notion that because I was abandoned, I worked very hard so I could do well and make my parents wish they had me back, or some such nonsense, but that's ridiculous," he insisted. "Knowing I was adopted may have made me feel more independent, but I have never felt abandoned. I've always felt special. My parents made me feel special." He would later bristle whenever anyone referred to Paul and Clara Jobs as his "adoptive" parents or implied that they were not his "real" parents. "They were my parents 1,000%," he said. When speaking about his biological parents, on the other hand, he was curt: "They were my sperm and egg bank. That's not harsh, it's just the way it was, a sperm bank thing, nothing more."

Silicon Valley

The childhood that Paul and Clara Jobs created for their new son was, in many ways, a stereotype of the late 1950s. When Steve was two they adopted a girl they named Patty, and three years later they moved to a tract house in the suburbs. The finance company where Paul worked as a repo man, CIT, had transferred him down to its Palo Alto office, but he could not afford to live there, so they landed in a subdivision in Mountain View, a less expensive town just to the south.

There Paul tried to pass along his love of mechanics and cars. "Steve, this is your workbench now," he said as he marked off a section of the table in their garage. Jobs remembered being impressed by his father's focus on craftsmanship. "I thought my dad's sense of design was pretty good," he said, "because he knew how to build anything. If we needed a cabinet, he would build it. When he built our fence, he gave me a hammer so I could work with him."

Fifty years later the fence still surrounds the back and side yards of the house in Mountain View. As Jobs showed it off to me, he caressed the stockade panels and recalled a lesson that his father implanted deeply in

him. It was important, his father said, to craft the backs of cabinets and fences properly, even though they were hidden. "He loved doing things right. He even cared about the look of the parts you couldn't see."

His father continued to refurbish and resell used cars, and he festooned the garage with pictures of his favorites. He would point out the detailing of the design to his son: the lines, the vents, the chrome, the trim of the seats. After work each day, he would change into his dungarees and retreat to the garage, often with Steve tagging along. "I figured I could get him nailed down with a little mechanical ability, but he really wasn't interested in getting his hands dirty," Paul later recalled. "He never really cared too much about mechanical things."

"I wasn't that into fixing cars," Jobs admitted. "But I was eager to hang out with my dad." Even as he was growing more aware that he had been adopted, he was becoming more attached to his father. One day when he was about eight, he discovered a photograph of his father from his time in the Coast Guard. "He's in the engine room, and he's got his shirt off and looks like James Dean. It was one of those *Oh wow* moments for a kid. *Wow, oooh*, my parents were actually once very young and really good-looking."

Through cars, his father gave Steve his first exposure to electronics. "My dad did not have a deep understanding of electronics, but he'd encountered it a lot in automobiles and other things he would fix. He showed me the rudiments of electronics, and I got very interested in that." Even more interesting were the trips to scavenge for parts. "Every weekend, there'd be a junkyard trip. We'd be looking for a generator, a carburetor, all sorts of components." He remembered watching his father negotiate at the counter. "He was a good bargainer, because he knew better than the guys at the counter what the parts should cost." This helped fulfill the pledge his parents made when he was adopted. "My college fund came from my dad paying $50 for a Ford Falcon or some other beat-up car that didn't run, working on it for a few weeks, and selling it for $250—and not telling the IRS."

The Jobses' house and the others in their neighborhood were modeled on ones built by the real estate developer Joseph Eichler, whose company spawned more than eleven thousand homes in various California subdivisions between 1950 and 1974. Inspired by Frank Lloyd Wright's vision of simple modern homes for the American "everyman," Eichler built inexpensive houses that featured floor-to-ceiling glass walls, open floor

plans, exposed post-and-beam construction, concrete slab floors, and lots of sliding glass doors. "Eichler did a great thing," Jobs said on one of our walks around the neighborhood. "His houses were smart and cheap and good. They brought clean design and simple taste to lower-income people. They had awesome little features, like radiant heating in the floors. You put carpet on them, and we had nice toasty floors when we were kids."

Jobs said that his appreciation for Eichler homes instilled in him a passion for making nicely designed products for the mass market. "I love it when you can bring really great design and simple capability to something that doesn't cost much," he said as he pointed out the clean elegance of the houses. "It was the original vision for Apple. That's what we tried to do with the first Mac. That's what we did with the iPod."

Across the street from the Jobs family lived a man who had become successful as a real estate agent. "He wasn't that bright," Jobs recalled, "but he seemed to be making a fortune. So my dad thought, 'I can do that.' He worked so hard, I remember. He took these night classes, passed the license test, and got into real estate. Then the bottom fell out of the market." As a result, the family found itself financially strapped for a year or so while Steve was in elementary school. His mother took a job as a bookkeeper for Varian Associates, a company that made scientific instruments, and they took out a second mortgage. One day his fourth-grade teacher asked him, "What is it you don't understand about the universe?" Jobs replied, "I don't understand why all of a sudden my dad is so broke." He was proud that his father never adopted a servile attitude or slick style that may have made him a better salesman. "You had to suck up to people to sell real estate, and he wasn't good at that and it wasn't in his nature. I admired him for that." Paul Jobs went back to being a mechanic.

His father was calm and gentle, traits that his son later praised more than emulated. He was also resolute. Jobs described one example:

> Nearby was an engineer who was working at Westinghouse. He was a single guy, beatnik type. He had a girlfriend. She would babysit me sometimes. Both my parents worked, so I would come here right after school for a couple of hours. He would get drunk and hit her a couple of times. She came over one night, scared out of her wits, and he came over drunk, and my dad stood him down—saying "She's here, but you're not coming in." He stood right there. We like to think everything was idyllic in the 1950s, but this guy was one of those engineers who had messed-up lives.

What made the neighborhood different from the thousands of other spindly-tree subdivisions across America was that even the ne'er-do-wells tended to be engineers. "When we moved here, there were apricot and plum orchards on all of these corners," Jobs recalled. "But it was beginning to boom because of military investment." He soaked up the history of the valley and developed a yearning to play his own role. Edwin Land of Polaroid later told him about being asked by Eisenhower to help build the U-2 spy plane cameras to see how real the Soviet threat was. The film was dropped in canisters and returned to the NASA Ames Research Center in Sunnyvale, not far from where Jobs lived. "The first computer terminal I ever saw was when my dad brought me to the Ames Center," he said. "I fell totally in love with it."

Other defense contractors sprouted nearby during the 1950s. The Lockheed Missiles and Space Division, which built submarine-launched ballistic missiles, was founded in 1956 next to the NASA Center; by the time Jobs moved to the area four years later, it employed twenty thousand people. A few hundred yards away, Westinghouse built facilities that produced tubes and electrical transformers for the missile systems. "You had all these military companies on the cutting edge," he recalled. "It was mysterious and high-tech and made living here very exciting."

In the wake of the defense industries there arose a booming economy based on technology. Its roots stretched back to 1938, when David Packard and his new wife moved into a house in Palo Alto that had a shed where his friend Bill Hewlett was soon ensconced. The house had a garage—an appendage that would prove both useful and iconic in the valley—in which they tinkered around until they had their first product, an audio oscillator. By the 1950s, Hewlett-Packard was a fast-growing company making technical instruments.

Fortunately there was a place nearby for entrepreneurs who had outgrown their garages. In a move that would help transform the area into the cradle of the tech revolution, Stanford University's dean of engineering, Frederick Terman, created a seven-hundred-acre industrial park on university land for private companies that could commercialize the ideas of his students. Its first tenant was Varian Associates, where Clara Jobs worked. "Terman came up with this great idea that did more than anything to cause the tech industry to grow up here," Jobs said. By the time Jobs was ten, HP had nine thousand employees and was the blue-chip company where every engineer seeking financial stability wanted to work.

The most important technology for the region's growth was, of course, the semiconductor. William Shockley, who had been one of the inventors of the transistor at Bell Labs in New Jersey, moved out to Mountain View and, in 1956, started a company to build transistors using silicon rather than the more expensive germanium that was then commonly used. But Shockley became increasingly erratic and abandoned his silicon transistor project, which led eight of his engineers—most notably Robert Noyce and Gordon Moore—to break away to form Fairchild Semiconductor. That company grew to twelve thousand employees, but it fragmented in 1968, when Noyce lost a power struggle to become CEO. He took Gordon Moore and founded a company that they called Integrated Electronics Corporation, which they soon smartly abbreviated to Intel. Their third employee was Andrew Grove, who later would grow the company by shifting its focus from memory chips to microprocessors. Within a few years there would be more than fifty companies in the area making semiconductors.

The exponential growth of this industry was correlated with the phenomenon famously discovered by Moore, who in 1965 drew a graph of the speed of integrated circuits, based on the number of transistors that could be placed on a chip, and showed that it doubled about every two years, a trajectory that could be expected to continue. This was reaffirmed in 1971, when Intel was able to etch a complete central processing unit onto one chip, the Intel 4004, which was dubbed a "microprocessor." Moore's Law has held generally true to this day, and its reliable projection of performance to price allowed two generations of young entrepreneurs, including Steve Jobs and Bill Gates, to create cost projections for their forward-leaning products.

The chip industry gave the region a new name when Don Hoefler, a columnist for the weekly trade paper *Electronic News*, began a series in January 1971 entitled "Silicon Valley USA." The forty-mile Santa Clara Valley, which stretches from South San Francisco through Palo Alto to San Jose, has as its commercial backbone El Camino Real, the royal road that once connected California's twenty-one mission churches and is now a bustling avenue that connects companies and startups accounting for a third of the venture capital investment in the United States each year. "Growing up, I got inspired by the history of the place," Jobs said. "That made me want to be a part of it."

Like most kids, he became infused with the passions of the grown-ups

around him. "Most of the dads in the neighborhood did really neat stuff, like photovoltaics and batteries and radar," Jobs recalled. "I grew up in awe of that stuff and asking people about it." The most important of these neighbors, Larry Lange, lived seven doors away. "He was my model of what an HP engineer was supposed to be: a big ham radio operator, hard-core electronics guy," Jobs recalled. "He would bring me stuff to play with." As we walked up to Lange's old house, Jobs pointed to the driveway. "He took a carbon microphone and a battery and a speaker, and he put it on this driveway. He had me talk into the carbon mike and it amplified out of the speaker." Jobs had been taught by his father that microphones always required an electronic amplifier. "So I raced home, and I told my dad that he was wrong."

"No, it needs an amplifier," his father assured him. When Steve protested otherwise, his father said he was crazy. "It can't work without an amplifier. There's some trick."

"I kept saying no to my dad, telling him he had to see it, and finally he actually walked down with me and saw it. And he said, 'Well I'll be a bat out of hell.' "

Jobs recalled the incident vividly because it was his first realization that his father did not know everything. Then a more disconcerting discovery began to dawn on him: He was smarter than his parents. He had always admired his father's competence and savvy. "He was not an educated man, but I had always thought he was pretty damn smart. He didn't read much, but he could do a lot. Almost everything mechanical, he could figure it out." Yet the carbon microphone incident, Jobs said, began a jarring process of realizing that he was in fact more clever and quick than his parents. "It was a very big moment that's burned into my mind. When I realized that I was smarter than my parents, I felt tremendous shame for having thought that. I will never forget that moment." This discovery, he later told friends, along with the fact that he was adopted, made him feel apart—detached and separate—from both his family and the world.

Another layer of awareness occurred soon after. Not only did he discover that he was brighter than his parents, but he discovered that they knew this. Paul and Clara Jobs were loving parents, and they were willing to adapt their lives to suit a son who was very smart—and also willful. They would go to great lengths to accommodate him. And soon Steve discovered this fact as well. "Both my parents got me. They felt a lot of responsibility once they sensed that I was special. They found ways to

keep feeding me stuff and putting me in better schools. They were willing to defer to my needs."

So he grew up not only with a sense of having once been abandoned, but also with a sense that he was special. In his own mind, that was more important in the formation of his personality.

School

Even before Jobs started elementary school, his mother had taught him how to read. This, however, led to some problems once he got to school. "I was kind of bored for the first few years, so I occupied myself by getting into trouble." It also soon became clear that Jobs, by both nature and nurture, was not disposed to accept authority. "I encountered authority of a different kind than I had ever encountered before, and I did not like it. And they really almost got me. They came close to really beating any curiosity out of me."

His school, Monta Loma Elementary, was a series of low-slung 1950s buildings four blocks from his house. He countered his boredom by playing pranks. "I had a good friend named Rick Ferrentino, and we'd get into all sorts of trouble," he recalled. "Like we made little posters announcing 'Bring Your Pet to School Day.' It was crazy, with dogs chasing cats all over, and the teachers were beside themselves." Another time they convinced some kids to tell them the combination numbers for their bike locks. "Then we went outside and switched all of the locks, and nobody could get their bikes. It took them until late that night to straighten things out." When he was in third grade, the pranks became a bit more dangerous. "One time we set off an explosive under the chair of our teacher, Mrs. Thurman. We gave her a nervous twitch."

Not surprisingly, he was sent home two or three times before he finished third grade. By then, however, his father had begun to treat him as special, and in his calm but firm manner he made it clear that he expected the school to do the same. "Look, it's not his fault," Paul Jobs told the teachers, his son recalled. "If you can't keep him interested, it's your fault." His parents never punished him for his transgressions at school. "My father's father was an alcoholic and whipped him with a belt, but I'm not sure if I ever got spanked." Both of his parents, he added, "knew the school was at fault for trying to make me memorize stupid stuff rather

than stimulating me." He was already starting to show the admixture of sensitivity and insensitivity, bristliness and detachment, that would mark him for the rest of his life.

When it came time for him to go into fourth grade, the school decided it was best to put Jobs and Ferrentino into separate classes. The teacher for the advanced class was a spunky woman named Imogene Hill, known as "Teddy," and she became, Jobs said, "one of the saints of my life." After watching him for a couple of weeks, she figured that the best way to handle him was to bribe him. "After school one day, she gave me this workbook with math problems in it, and she said, 'I want you to take it home and do this.' And I thought, 'Are you nuts?' And then she pulled out one of these giant lollipops that seemed as big as the world. And she said, 'When you're done with it, if you get it mostly right, I will give you this and five dollars.' And I handed it back within two days." After a few months, he no longer required the bribes. "I just wanted to learn and to please her."

She reciprocated by getting him a hobby kit for grinding a lens and making a camera. "I learned more from her than any other teacher, and if it hadn't been for her I'm sure I would have gone to jail." It reinforced, once again, the idea that he was special. "In my class, it was just me she cared about. She saw something in me."

It was not merely intelligence that she saw. Years later she liked to show off a picture of that year's class on Hawaii Day. Jobs had shown up without the suggested Hawaiian shirt, but in the picture he is front and center wearing one. He had, literally, been able to talk the shirt off another kid's back.

Near the end of fourth grade, Mrs. Hill had Jobs tested. "I scored at the high school sophomore level," he recalled. Now that it was clear, not only to himself and his parents but also to his teachers, that he was intellectually special, the school made the remarkable proposal that he skip two grades and go right into seventh; it would be the easiest way to keep him challenged and stimulated. His parents decided, more sensibly, to have him skip only one grade.

The transition was wrenching. He was a socially awkward loner who found himself with kids a year older. Worse yet, the sixth grade was in a different school, Crittenden Middle. It was only eight blocks from Monta Loma Elementary, but in many ways it was a world apart, located in a neighborhood filled with ethnic gangs. "Fights were a daily occurrence;

as were shakedowns in bathrooms," wrote the Silicon Valley journalist Michael S. Malone. "Knives were regularly brought to school as a show of macho." Around the time that Jobs arrived, a group of students were jailed for a gang rape, and the bus of a neighboring school was destroyed after its team beat Crittenden's in a wrestling match.

Jobs was often bullied, and in the middle of seventh grade he gave his parents an ultimatum. "I insisted they put me in a different school," he recalled. Financially this was a tough demand. His parents were barely making ends meet, but by this point there was little doubt that they would eventually bend to his will. "When they resisted, I told them I would just quit going to school if I had to go back to Crittenden. So they researched where the best schools were and scraped together every dime and bought a house for $21,000 in a nicer district."

The move was only three miles to the south, to a former apricot orchard in Los Altos that had been turned into a subdivision of cookie-cutter tract homes. Their house, at 2066 Crist Drive, was one story with three bedrooms and an all-important attached garage with a roll-down door facing the street. There Paul Jobs could tinker with cars and his son with electronics.

Its other significant attribute was that it was just over the line inside what was then the Cupertino-Sunnyvale School District, one of the safest and best in the valley. "When I moved here, these corners were still orchards," Jobs pointed out as we walked in front of his old house. "The guy who lived right there taught me how to be a good organic gardener and to compost. He grew everything to perfection. I never had better food in my life. That's when I began to appreciate organic fruits and vegetables."

Even though they were not fervent about their faith, Jobs's parents wanted him to have a religious upbringing, so they took him to the Lutheran church most Sundays. That came to an end when he was thirteen. In July 1968 *Life* magazine published a shocking cover showing a pair of starving children in Biafra. Jobs took it to Sunday school and confronted the church's pastor. "If I raise my finger, will God know which one I'm going to raise even before I do it?"

The pastor answered, "Yes, God knows everything."

Jobs then pulled out the *Life* cover and asked, "Well, does God know about this and what's going to happen to those children?"

"Steve, I know you don't understand, but yes, God knows about that."

Jobs announced that he didn't want to have anything to do with worshipping such a God, and he never went back to church. He did, however, spend years studying and trying to practice the tenets of Zen Buddhism. Reflecting years later on his spiritual feelings, he said that religion was at its best when it emphasized spiritual experiences rather than received dogma. "The juice goes out of Christianity when it becomes too based on faith rather than on living like Jesus or seeing the world as Jesus saw it," he told me. "I think different religions are different doors to the same house. Sometimes I think the house exists, and sometimes I don't. It's the great mystery."

Paul Jobs was then working at Spectra-Physics, a company in nearby Santa Clara that made lasers for electronics and medical products. As a machinist, he crafted the prototypes of products that the engineers were devising. His son was fascinated by the need for perfection. "Lasers require precision alignment," Jobs said. "The really sophisticated ones, for airborne applications or medical, had very precise features. They would tell my dad something like, 'This is what we want, and we want it out of one piece of metal so that the coefficients of expansion are all the same.' And he had to figure out how to do it." Most pieces had to be made from scratch, which meant that Paul had to create custom tools and dies. His son was impressed, but he rarely went to the machine shop. "It would have been fun if he had gotten to teach me how to use a mill and lathe. But unfortunately I never went, because I was more interested in electronics."

One summer Paul took Steve to Wisconsin to visit the family's dairy farm. Rural life did not appeal to Steve, but one image stuck with him. He saw a calf being born, and he was amazed when the tiny animal struggled up within minutes and began to walk. "It was not something she had learned, but it was instead hardwired into her," he recalled. "A human baby couldn't do that. I found it remarkable, even though no one else did." He put it in hardware-software terms: "It was as if something in the animal's body and in its brain had been engineered to work together instantly rather than being learned."

In ninth grade Jobs went to Homestead High, which had a sprawling campus of two-story cinderblock buildings painted pink that served two thousand students. "It was designed by a famous prison architect," Jobs recalled. "They wanted to make it indestructible." He had developed a love of walking, and he walked the fifteen blocks to school by himself each day.

He had few friends his own age, but he got to know some seniors who were immersed in the counterculture of the late 1960s. It was a time when the geek and hippie worlds were beginning to show some overlap. "My friends were the really smart kids," he said. "I was interested in math and science and electronics. They were too, and also into LSD and the whole counterculture trip."

His pranks by then typically involved electronics. At one point he wired his house with speakers. But since speakers can also be used as microphones, he built a control room in his closet, where he could listen in on what was happening in other rooms. One night, when he had his headphones on and was listening in on his parents' bedroom, his father caught him and angrily demanded that he dismantle the system. He spent many evenings visiting the garage of Larry Lange, the engineer who lived down the street from his old house. Lange eventually gave Jobs the carbon microphone that had fascinated him, and he turned him on to Heathkits, those assemble-it-yourself kits for making ham radios and other electronic gear that were beloved by the soldering set back then. "Heathkits came with all the boards and parts color-coded, but the manual also explained the theory of how it operated," Jobs recalled. "It made you realize you could build and understand anything. Once you built a couple of radios, you'd see a TV in the catalogue and say, 'I can build that as well,' even if you didn't. I was very lucky, because when I was a kid both my dad and the Heathkits made me believe I could build anything."

Lange also got him into the Hewlett-Packard Explorers Club, a group of fifteen or so students who met in the company cafeteria on Tuesday nights. "They would get an engineer from one of the labs to come and talk about what he was working on," Jobs recalled. "My dad would drive me there. I was in heaven. HP was a pioneer of light-emitting diodes. So we talked about what to do with them." Because his father now worked for a laser company, that topic particularly interested him. One night he cornered one of HP's laser engineers after a talk and got a tour of the holography lab. But the most lasting impression came from seeing the small computers the company was developing. "I saw my first desktop computer there. It was called the 9100A, and it was a glorified calculator but also really the first desktop computer. It was huge, maybe forty pounds, but it was a beauty of a thing. I fell in love with it."

The kids in the Explorers Club were encouraged to do projects, and Jobs decided to build a frequency counter, which measures the number

of pulses per second in an electronic signal. He needed some parts that HP made, so he picked up the phone and called the CEO. "Back then, people didn't have unlisted numbers. So I looked up Bill Hewlett in Palo Alto and called him at home. And he answered and chatted with me for twenty minutes. He got me the parts, but he also got me a job in the plant where they made frequency counters." Jobs worked there the summer after his freshman year at Homestead High. "My dad would drive me in the morning and pick me up in the evening."

His work mainly consisted of "just putting nuts and bolts on things" on an assembly line. There was some resentment among his fellow line workers toward the pushy kid who had talked his way in by calling the CEO. "I remember telling one of the supervisors, 'I love this stuff, I love this stuff,' and then I asked him what he liked to do best. And he said, 'To fuck, to fuck.' " Jobs had an easier time ingratiating himself with the engineers who worked one floor above. "They served doughnuts and coffee every morning at ten. So I'd go upstairs and hang out with them."

Jobs liked to work. He also had a newspaper route—his father would drive him when it was raining—and during his sophomore year spent weekends and the summer as a stock clerk at a cavernous electronics store, Haltek. It was to electronics what his father's junkyards were to auto parts: a scavenger's paradise sprawling over an entire city block with new, used, salvaged, and surplus components crammed onto warrens of shelves, dumped unsorted into bins, and piled in an outdoor yard. "Out in the back, near the bay, they had a fenced-in area with things like Polaris submarine interiors that had been ripped and sold for salvage," he recalled. "All the controls and buttons were right there. The colors were military greens and grays, but they had these switches and bulb covers of amber and red. There were these big old lever switches that, when you flipped them, it was awesome, like you were blowing up Chicago."

At the wooden counters up front, laden with thick catalogues in tattered binders, people would haggle for switches, resistors, capacitors, and sometimes the latest memory chips. His father used to do that for auto parts, and he succeeded because he knew the value of each better than the clerks. Jobs followed suit. He developed a knowledge of electronic parts that was honed by his love of negotiating and turning a profit. He would go to electronic flea markets, such as the San Jose swap meet, haggle for a used circuit board that contained some valuable chips or components, and then sell those to his manager at Haltek.

Jobs was able to get his first car, with his father's help, when he was fifteen. It was a two-tone Nash Metropolitan that his father had fitted out with an MG engine. Jobs didn't really like it, but he did not want to tell his father that, or miss out on the chance to have his own car. "In retrospect, a Nash Metropolitan might seem like the most wickedly cool car," he later said. "But at the time it was the most uncool car in the world. Still, it was a car, so that was great." Within a year he had saved up enough from his various jobs that he could trade up to a red Fiat 850 coupe with an Abarth engine. "My dad helped me buy and inspect it. The satisfaction of getting paid and saving up for something, that was very exciting."

That same summer, between his sophomore and junior years at Homestead, Jobs began smoking marijuana. "I got stoned for the first time that summer. I was fifteen, and then began using pot regularly." At one point his father found some dope in his son's Fiat. "What's this?" he asked. Jobs coolly replied, "That's marijuana." It was one of the few times in his life that he faced his father's anger. "That was the only real fight I ever got in with my dad," he said. But his father again bent to his will. "He wanted me to promise that I'd never use pot again, but I wouldn't promise." In fact by his senior year he was also dabbling in LSD and hash as well as exploring the mind-bending effects of sleep deprivation. "I was starting to get stoned a bit more. We would also drop acid occasionally, usually in fields or in cars."

He also flowered intellectually during his last two years in high school and found himself at the intersection, as he had begun to see it, of those who were geekily immersed in electronics and those who were into literature and creative endeavors. "I started to listen to music a whole lot, and I started to read more outside of just science and technology—Shakespeare, Plato. I loved *King Lear*." His other favorites included *Moby-Dick* and the poems of Dylan Thomas. I asked him why he related to King Lear and Captain Ahab, two of the most willful and driven characters in literature, but he didn't respond to the connection I was making, so I let it drop. "When I was a senior I had this phenomenal AP English class. The teacher was this guy who looked like Ernest Hemingway. He took a bunch of us snowshoeing in Yosemite."

One course that Jobs took would become part of Silicon Valley lore: the electronics class taught by John McCollum, a former Navy pilot who had a showman's flair for exciting his students with such tricks as firing

up a Tesla coil. His little stockroom, to which he would lend the key to pet students, was crammed with transistors and other components he had scored.

McCollum's classroom was in a shed-like building on the edge of the campus, next to the parking lot. "This is where it was," Jobs recalled as he peered in the window, "and here, next door, is where the auto shop class used to be." The juxtaposition highlighted the shift from the interests of his father's generation. "Mr. McCollum felt that electronics class was the new auto shop."

McCollum believed in military discipline and respect for authority. Jobs didn't. His aversion to authority was something he no longer tried to hide, and he affected an attitude that combined wiry and weird intensity with aloof rebelliousness. McCollum later said, "He was usually off in a corner doing something on his own and really didn't want to have much of anything to do with either me or the rest of the class." He never trusted Jobs with a key to the stockroom. One day Jobs needed a part that was not available, so he made a collect call to the manufacturer, Burroughs in Detroit, and said he was designing a new product and wanted to test out the part. It arrived by air freight a few days later. When McCollum asked how he had gotten it, Jobs described—with defiant pride—the collect call and the tale he had told. "I was furious," McCollum said. "That was not the way I wanted my students to behave." Jobs's response was, "I don't have the money for the phone call. They've got plenty of money."

Jobs took McCollum's class for only one year, rather than the three that it was offered. For one of his projects, he made a device with a photocell that would switch on a circuit when exposed to light, something any high school science student could have done. He was far more interested in playing with lasers, something he learned from his father. With a few friends, he created light shows for parties by bouncing lasers off mirrors that were attached to the speakers of his stereo system.