



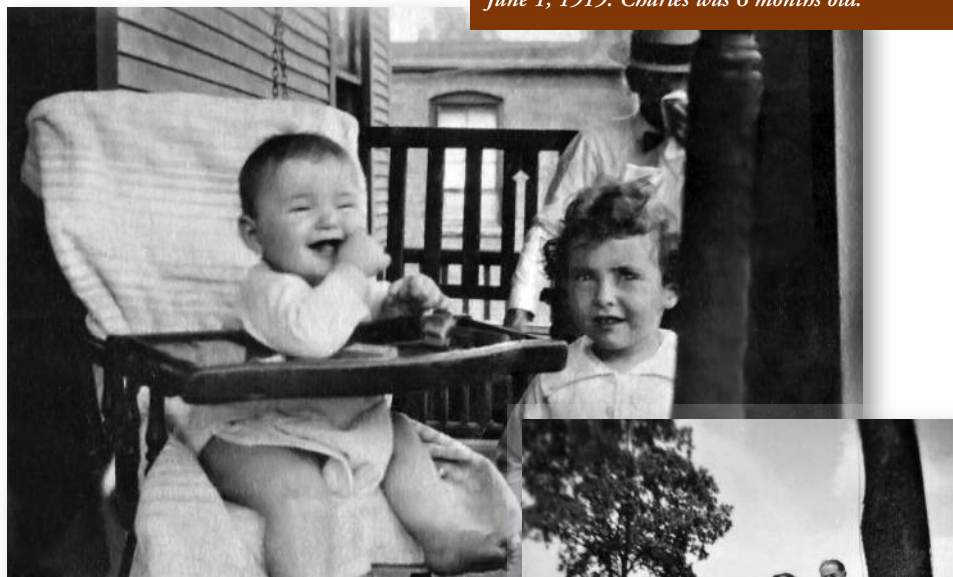
Budding Interests, Growing Possibilities

Charles Manuel Weiss was born on December 7, 1918—an early Christmas present for his older sister, Mildred. His parents, Morris and Fannie, were living in Scranton, Pennsylvania, at the time. Morris had emigrated from Eastern Europe at age 13, and Fannie had been born in New York City in 1898. They met in New York in the early 1900s, and Mildred was born in 1914. When Charles came along four years later, he entered a happy home with hardworking, encouraging parents.¹

At the time that Charles was born, Morris was selling dental supplies throughout northeastern Pennsylvania to support his young family; one of Charles' favorite toys was the dental scale his father used to measure out the gold for tooth fillings. But the constant travel of a salesman's life soon wore on Morris. With towns connected either by dirt roads, which were hard to travel, or by train, which was expensive, commuting from town to town and then home again became too taxing for the young father. In the summer of 1919, Morris moved his family to Mount Vernon, New York, a small town just outside of the New York City limits where Fannie's parents and siblings were living.²

The Weisses' stay in Mount Vernon was brief. After only a few years, the family moved again to Newark, New Jersey, where Morris

Charles and his older sister, Mildred, June 1, 1919. Charles was 6 months old.



Morris and Fannie Weiss, Charles' parents



Early Ties to North Carolina

Charles' maternal grandfather, Sam, first came to America in the 1880s to work in James B. Duke's American Tobacco Company in Durham, North Carolina, just down the road from the Weisses' eventual home in Chapel Hill. American Tobacco was recruiting workers from Eastern Europe at the time, because they were experts at the art of hand-rolling cigarettes. Sam worked in the cigarette plant for two years, then returned to Eastern Europe to gather his wife and three sons and bring them to New York City. Charles' mother, Fannie, was born in New York, as were two younger sisters and a younger brother.⁴

opened a tobacco and candy business. His small store on Hawthorne Avenue was just one block from the family's house and across the street from Hawthorne Avenue Elementary, where Mildred attended school.³ Charles started kindergarten there in 1923; he and Mildred could walk to school together. Morris' store soon began to prosper, and the Weisses settled into life in Newark.



Meanwhile, in New York City, Max and Vera Friedlander brought their new daughter Shirley home on February 26, 1921. Both Max and Vera had come to the United States as children: Max emigrated from Austria, Vera from Russia. Like Charles' parents, Max

and Vera also met in New York. When Shirley was born in 1921, she became the youngest in the family of four, joining her older sister, Lillian, in the family's home in the Bronx.

Max Friedlander was a painter, and he supported his family painting walls, houses, and decorative artwork.⁵ Their father's art surrounded Shirley and Lillian from an early age. Music, too, was central to the girls' upbringing: Shirley and Lillian took piano and dance lessons, and Lillian in particular became quite accomplished at the piano. Both girls were in awe of their cousin Abbey Simon, who was one year younger than Shirley but whose hands flew across a piano keyboard.⁶

Shirley was a natural student, and by age 5 she had already stated quite emphatically that she wanted to be a teacher when she grew up.⁷ Recognizing their daughters' intelligence, Max and Vera enthusiastically supported their girls' educations. Vera, especially, went out of her way to make sure that Shirley and Lillian were included in any activities or situations they desired to be involved in, always encouraging them to be successful, independent women. Max, too, told

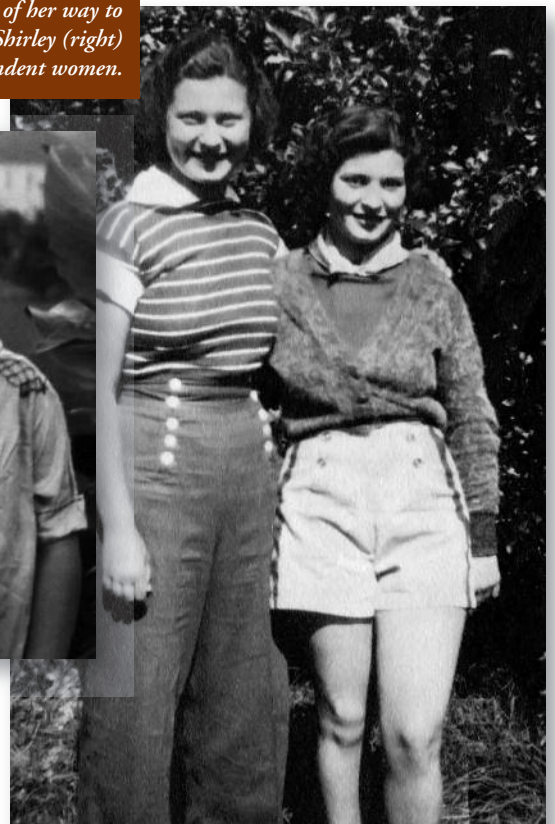
*Max and Vera Friedlander,
Shirley's parents*



*Shirley's mother went out of her way to
encourage Lillian (left) and Shirley (right)
to be successful, independent women.*



*Shirley (right) as a young child,
with her cousin Abbey Simon who
later became a renowned pianist*



his daughters that education would broaden their opportunities in life.⁸

With such supportive parents, Shirley began to blossom from a young girl into a creative, confident young woman.



In Newark, Charles was also growing up with an appreciation for education. Morris and Fannie encouraged their children to be as educated as possible—when he was younger, Morris had attended City College of New York, even while working full time. He and Fannie both believed education was the way to success, and they encouraged Charles to expand his mind as much as possible.

Even before starting school, Charles entertained himself by reading books from his father's library. Once he started school, Charles found himself immersed in a fascinating world of learning—so much so that he soon skipped a grade and a half ahead of his age group. His schools were all within walking distance of public libraries, all had robust, well-balanced curriculums, and all had programs in art, music, and vocational skills.⁹

Charles was particularly intrigued by science. Though he loved music and listening to it, he soon gave up the piano lessons his mother encouraged in favor of building radio sets and attending the Junior Science Club at the Newark Museum.¹⁰ Mentored by the club's director, a woman named Frankie Culpepper, Charles and three other boys formed the core group of the club. They met at the museum every Friday afternoon to get hands-on experience with biology and science. One of Charles' first assignments was writing labels for an exhibit on dinosaurs.¹¹

Happily, his science assignments soon grew more interesting than label making. As a Boy Scout, Charles attended a two-week Scout Camp several summers in a row, and he and his science friends spent most of their time at the Scout "museum," bringing in items that could be exhibited for the other boys. One year, Charles won the award for "best contribution to the museum." Another year, Charles and his friends Lloyd and Harold learned how to handle snakes—even poisonous ones—at the museum's snake pit.

Between school, the museum club, and Scout Camp, Charles spent much of his time learning, being outdoors immersed in living systems, and surrounding himself with peers who were also interested in biology and science. Charles began dreaming about his future life as a scientist.¹²

Shirley's own love of learning continued as she grew into a young woman. In 1934,



Charles as a young child



Charles (right) bird watching at the shore with friends from the science club: Lloyd Sanford, Libero Ajello, and Danny Schaffer. Charles and his science club pals remained friends throughout their lives.

An Early Start in Academics

Charles learned to read at an early age by perusing his father's library. Morris Weiss was born in Eastern Europe, and he immigrated to New York with his family when he was 10 or 12 years old. Children at that time often went out and started earning money as soon as they were old enough, and Morris was no different: He went out early and got a job. But as soon as he was admissible, he started attending City College of New York, which was free.

When Charles came along, he spent long hours as a boy burying himself in the books that Morris had acquired while studying at City College.

"One was a history book of the Romans and Greeks. And that became my primary learning tool: I read that book cover to cover, I don't know how many times," Charles said. "So I became interested in history, and I must've learned to read it by myself. Nobody in my family claims to have taught me to read!"¹³

Shirley began high school at Walton High, a prestigious all-girls public school that attracted the brightest young women in New York.¹⁴

Shirley's time at Walton was fun, challenging, and intellectually stimulating. With her musical and artistic background, she starred in and managed several school plays and operas, including a production of *Carmen*. She also excelled academically, shining especially in her French classes.

Shirley soon formed a bond with Garadiné Garabedian, a French teacher at the school. Madame Garabedian—or Gary, as she was affectionately known—had immigrated to New York from Armenia by way of Paris and the Sorbonne. She and Shirley formed a close relationship,

With her musical and artistic background, Shirley starred in and managed several school plays and operas.



and as Shirley's time at Walton progressed, Gary became a trusted mentor. Shirley learned much about life, teaching, and giving during the time she spent with Gary, whom she eventually came to refer to as her godmother.¹⁵

As she continued to excel at Walton, Shirley began thinking about what might come next. Lillian had already started undergraduate studies at Hunter College, and Shirley knew that she wanted to attend a four-year college too. But where?¹⁶



Charles' father valued education so much that he wouldn't hear of *not* supporting his children if they wanted to pursue it—and they did. By the time Charles started high school, his sister, Mildred, was attending Upsala College, a small school in East Orange, New Jersey, five miles from the family's home. By Charles' senior year, his friend Harold had started school at Cornell University, and Charles decided he wanted to go there too.

But Cornell was out-of-state, and that proved an obstacle, as Cornell placed limits on the number of out-of-state students admitted. So instead, Charles applied to Rutgers University and was accepted. In the fall of 1935, Charles packed his bags, boarded the Pennsylvania Railroad, and traveled the 25 miles south to New Brunswick, New Jersey, to begin his freshman year.¹⁷ He was 16 years old, and his tuition and fees per semester totaled \$100.¹⁸

Charles soon proved a more than able scholar. Still devoted to books and reading, he spent much of his time in the Rutgers Library, poring over books and news magazines. He was such a voracious reader that at the end of every week, when the library staff carted new magazines into the main reading room, Charles trailed behind the cart waiting to be the first to read them.¹⁹ Charles' reading soon literally paid off: In his freshman year he entered a news awareness competition sponsored by *Time* magazine on college campuses, and he captured first prize at Rutgers, a cash award of \$50.²⁰

Charles' early interests in life sciences and natural processes led him to the biology department. He began taking classes and soon became interested in the small details of living systems and in the biology of aquatic systems. With these dual interests, he decided to major in bacteriology and limnology (the study of inland waters).²¹

By the beginning of his senior year in the fall of 1938, Charles knew he was going to have a valuable degree. But he didn't yet know what kind of career he



Charles in his ROTC uniform at Rutgers, 1935

Early Travels

Growing up in urban areas, Charles and Shirley both became accustomed to traveling via public transit early on. After Charles' family moved to Newark, his mother and father established a weekly routine of visiting Fannie's family in Mount Vernon, New York. Every Thursday, Fannie, Charles, and Mildred walked one block to catch a trolley, which took them to a train going into New York City. In New York, they switched to a subway line and rode north all the way to the end of the line, where a trolley took them into Mount Vernon. (Charles' father followed in their car on Saturday and drove the family home on Sunday.) Likewise, Shirley became an independent traveler early on, riding the subway around the city and to and from Walton High School. Such early familiarity with travel and transit contributed to the Weisses' comfort with travel later on.

Garadiné Garabedian—or Gary, as she was affectionately known—was an important role model for Shirley. Shirley eventually came to call her "godmother."



wanted. He knew where his interests lay, however, and when master's student Ralph Holtje needed a field assistant for a project studying algae in the local water supply, Charles jumped at the opportunity. Charles spent much of his senior year learning about hands-on research and how to collect water samples in the field.²²

Then, in the spring of 1939, Ralph was offered a position at the Woods Hole Oceanographic Institution by Selman Waksman, who was the marine bacteriologist at the Oceanographic Institution and head of the Department of Microbiology at the New Jersey Agricultural Experiment Station in New Brunswick. Ralph had to turn it down—but knowing Charles to be an excellent student and researcher, he suggested Charles instead.

Thus by mid-spring of 1939, Charles had plans to spend the summer 300 miles away in Woods Hole, Massachusetts, interning in marine bacteriology at the relatively new but highly respected Woods Hole Oceanographic Institution. His future as a scientist was beginning to unfold.²³



Finishing her senior year at Walton in the spring of 1938, Shirley was still looking for the right school and the right opportunity to further her education. She had applied to several schools and scholarships, knowing that the only way she could afford a college education would be with a scholarship.²⁴

Then one day, while reading *The New York Times*, she came across an advertisement for French scholarships at the New Jersey College for Women at Rutgers University, 45 miles south of her home in New York.²⁵ Shirley's heart leapt. Her French skills were razor sharp, having been honed under Gary and her French teacher, Hattie Dreyfuss. Shirley lost no time in telling Gary about the opportunity. Gary was equally thrilled, and in the following weeks she helped Shirley craft her winning scholarship application.

In June 1938, Shirley graduated from Walton. Three months later, she was on her way to New Brunswick, New Jersey, to start her life in academia.

Arriving in New Brunswick on a hot day at the end of the summer, Shirley set about unpacking in her two-person dorm room on the Gibbons Residential Campus of the New Jersey College for Women (NJC). She soon met Helen Daniels, her new roommate. Helen was from Newark, and the two of them became fast friends.

Life at NJC was a whirl of classes, club meetings, and social events. Shirley's French classes were exciting, and the French club was a natural fit. She was intrigued by her other subjects, too, particularly economics. Shirley soon started a part-time job serving tables in the NJC dining room to earn a little extra money. Between classes, clubs, work, and friends, Shirley had a very full schedule. Though some would have found the fast pace overwhelming, for Shirley—bright, hardworking, and vivacious—it was just right.

"Shirley was a quick study," remembered May Daniels, sister of Helen Daniels. "I remember my sister telling me about how Shirley wrote exams: She would take the question and write down a few words, just the major concepts, and organize it conceptually. And

then she would write, and she would integrate the ideas. My sister was very impressed!”²⁶

Shirley’s freshman year seemed to pass quickly. Friends from home visited in October, followed soon by exams and Christmas break. After Christmas, Shirley and Helen celebrated a fresh January snowfall, taking photographs of each other in the snow with Shirley’s new camera. Shirley’s 18th birthday came in February, and several friends from home descended on her tiny dorm room to celebrate. Soon March had passed and April had begun, and the air at NJC was thick with end-of-semester exams and papers.²⁷

Even with all the hard work, Shirley knew it was important to have fun. So even though she had a research paper due in several days, she accepted the invitation when one of the Rutgers men asked her out for the following Friday. She was waiting in the dorm’s parlor that Friday evening when the young man knocked on the door and escorted her outside to the car, where the other couple was waiting.

May Daniels Remembers Meeting Shirley

I met Shirley in about October of 1938. I was 12 years old, and in the seventh grade. My sister Helen was a freshman at NJC, and I was told I could go down to NJC to visit her for the weekend. I met my father at his office in downtown Newark, and he took me to the train and put me on, and Helen took me off the train in New Brunswick. And then we went back to Gibbons Campus.

And there I met this very striking brunette—Shirley, who was Helen’s roommate. She was beautiful, and very vivacious, very friendly, and very outgoing. I thought she was the most sophisticated person I’d ever met in my life. I still think so!

Somehow we found out that each of us was studying French: I for the first year in seventh grade, and Shirley was a protege of Gary’s (Madame Garabedian). When Shirley found out I was learning to speak French, she gave me a *petit cahier* to write down things, a little notebook with lines. And I wrote down all these *expressions de politesse*: *merci beaucoup*, *bonjour*. And she gave me a ribbon from a French line beret—the French sailors have ribbons on their berets, and she gave me one.

Shirley would *always*, every time she saw me, have a gift. Aside from herself, which was a gift. Once when my husband and I visited Charles and Shirley in their East Orange apartment, Shirley was getting dressed, and she said, “Which one of these



Shirley dressed in her NJC “freshman costume,” October 1938

perfumes do you like?” And she gave it to me!

She was regal. She really was. And she treated each person with great respect. I always felt that Shirley, no matter what the situation, was just *with it*. Anything that arose, she did graciously, with friendship and love. And with this very regal approach to how she held herself and spoke with people. She was very polite, and very caring.²⁸

*Shirley and her roommate Helen enjoying
a January snowfall on the NJC campus*



*Charles, with camera, searching for the first signs
of spring in a wetland near New Brunswick*

