

Bits and Pieces

*How I Constructed a Life
Worth Living*



Elof Axel Carlson

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WORTH LIVING**

ELOF AXEL CARLSON

PREFACE

I made myself a song, a coat
Covered with embroideries
Out of old mythologies
From heel to throat

from W. B. Yeats *A Coat*

All memoirs and autobiographies are selections. Every life has more adventures, compromises, dullness, and shame than can fit in print. A memoir is a sampler. I believe most autobiographies and memoirs are true. They reflect the self-image of the writer. I like to think this memoir fits that claim. I am a reasonably open person and most of my life has been immersed in the world of intellect. In Hesse's *Narcissus and Goldmund*, I would be Narcissus although I prefer Goldmund. I have not led a very sensuous life but I have had an unusual life. I compensate for the dullness of my emotional life with the richness of my intellectual life. It is not that I do not feel pain, sorrow, self-doubt, ecstasy, and failure. Like all human beings I have had my share of these. They are not my obsessions. My passion is learning, discovering, assimilating, and transmitting new experiences. I teach. I write. I learn. I think. For much of humanity that is not an interesting life. For me it is the most interesting one I can imagine.

I have learned over the years that we warp reality. Our memories shift things around, splice unrelated events as one happening, assign thoughts

and deeds to the wrong people, and turn the truth around. Unlike the writing of a biography where events described have some basis in correspondence, diaries, multiple interviews, and a historical record that can be researched, memoirs are simply that. They are vignettes, embroideries, childhood myths, and stories built out of memories that cannot be accurately checked with references. I like to think that I do not lie. I can think of only a few times where I have knowingly lied in my adult life. I am Kantian to the extreme in that desire not to warp the thinking of others, or myself, with concocted lies. But I am old enough and experienced enough to know that we do not remember things the same way others remember them.

I wrote these memoirs as a large collection of short episodes or stories from my life. I wanted to move up and down in time in these themes and not be bound to a strict chronology of chapters that followed my life cycle from birth to old age. Roughly, of course, they are chronological because we build our lives on who we were in the past. Each event, rite of passage, and new experience changes us and gives us added complexity as people. I am a moralist and most of my stories are like fables that instruct. I have instructed my life and I have learned to be a better person from reflection on my mistakes.

Professors rarely write memoirs because they lead boring lives to those who observe them. They live a life of the mind. They are isolated in their academic communities and often prefer it that way. They do not want the ways of the world. Money, power, and sex are the themes of a considerable body of fiction. Most professors live on a modest middle class salary, are relatively monogamous, and their obsessions are with their work. Few leave the academic world to make large sums of money or attain power over many lives. This quiet life style of the academic makes their stories largely uninteresting. C. P. Snow tried to portray that life in *The Masters*. At most a conflict for status and prestige was the subdued passion revealed in that novel. Yet one of the most successful literary works of all time was about a professor. In *Faust*, Goethe describes Faust's scholarly world and his success in it but Faust leaves that world to begin a half century or more of non-stop adventures to make up for the life he did not know as a scholar. I have not done that. But I like to consider myself Faustian in personality

because I do not repeat a year. I try to make my teaching, my scholarly interests, and my opportunities to discover as varied as I can. In my memoirs I reveal the many lives I have experienced, the opportunities to travel, to experience knowledge in new settings, to shift fields, and to build connections across the disciplines. These were much more parts of my later life from my 30s to my 70s but the foundations for those activities are depicted in how I spent my youth.

I wrote a short autobiography intended for my family about 1970. I shifted to this memoir form in 1997 and set them aside until 2010 when I began reading some essays from it in a seminar on writing personal essays held at the Emeriti House on the campus of Indiana University. I thank John Woodcock and my fellow writers in the group for their feedback and encouragement.

In [part 1](#), have portrayed the first 29 years of my life with many of its flaws, its disappointments, and its modest accomplishments. That would not be a sufficient reason to write or read these memoirs. In [Part 2](#). I cover my professional career. I like to think that I faced very difficult challenges in my life and learned to overcome circumstances that might have overwhelmed others and left them bitter or resigned to a life of low expectations. I also feel that we can find humor in our failings, our confusion, and our struggles to grow up. As a moralist, I have repeatedly had to make choices and without a religion to guide me, I have made choices that I like to think were for the better. I wish I could say that my values are strong enough to meet all circumstances, but that would make me a saint and not a human being. We are necessarily flawed, but we can still live a wonderful life. That's not a bad reason for celebrating it in writing.

Elof Axel Carlson
Bloomington, Indiana



Elof Axel Carlson in his study at 1034 E. Azalea Lane, Bloomington, Indiana 2012 [photo taken by Helen Muller].

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CHAPTER 1

MY FATHER

My father, Axel Elof Carlson, was an only child, born in Stockholm in 1901. His father was Axel Frederik Carlsson, a chemist from a region south of Sweden who met Amanda Olausson, who was born in western Sweden near Göteborg, but who was raised for part of her early life in Normandy in France. My father had a relatively happy childhood and learned to ski almost as soon as he learned to walk. He excelled in school and as was common in that era, he learned Latin, German, French, and English by the time he had completed high school. His father was raised Lutheran, but he was non-observant. He was a scientist and like most scientists, religion was kept, if at all, to a dualist co-existence with a real world that did not rely on the supernatural. He developed tuberculosis of the throat, was treated with radium, and died when my father was in his teens.

In elementary school my father became an atheist. He was told that if he prayed to God his wishes would be answered. He prayed for a bicycle but did not get it. He stopped his religious observances in class and the teacher asked why. He told her God did not answer his prayers, he did not get a bicycle, so God must be a fake. She told him this was blasphemous, and she ordered him to hold out his hands, palms down and then she took a ruler and brought it down full force to rap his knuckles. He pulled his hands away, the ruler hit her sandwich roll and the roll flew apart in two pieces, the contents somewhere betwixt and between, much to his teacher's consternation and added rage. This convinced my father that there was something amiss with religion.

My father's social views were also shaped by his father. He would not allow him to join the Swedish Boy Scouts because they wore uniforms, and

he called the Boy Scouts a paramilitary organization. My father became a pacifist, at least in outlook, but he did not resist being drafted into the Swedish navy towards the waning of the First World War

After her husband's death, my father's mother converted to Catholicism. She was a stern mother, trying to civilize her free-thinking child with strict codes of conduct. When he was 13, she caught him masturbating and took him to a physician, who promptly recommended to her that to prevent her son from going insane, he should be circumcised to reduce the alleged irritation that promoted his eroticism. This procedure was painful, and it did not endear my father to his mother. He left home promptly after getting out of the navy and went to Hamburg. There he enrolled in and flunked out of the University of Hamburg where, as he told me, he "majored in wine, women, and song."

He traveled throughout Germany, often wearing Lederhosen, using his German to meet girls along the way, drink with them, dance, and enjoy a night in their beds. He was in Munich when he fell in love with a well-to-do German girl who told him he should come to listen to a wonderful man whose political party her family had joined. He stood outside a beer hall and heard Adolph Hitler, about 1921, condemning Bolsheviks, Jews, pacifists, and those who sold out Germany. "How curious," my father thought, "he looks like Charlie Chaplin, and they take him seriously". He decided not to continue courting his German girl before he'd make a terrible mistake and joined the merchant marine.



My father was born in Bellmansgatan in Stockholm across the street from the Mary Magdalen Cathedral. Carl Michael Bellman was “the last of the troubadours” and the Swedish equivalent of Bobbie Burns in Scotland.

My father loved the sea. He was an oiler and he crawled in the bowels of the ship along catwalks, squirting oil on pistons. At night he would thrill to the clear skies and the Milky Way gleaming like a belt studded with millions of diamonds. He read when he was off duty. It wasn't typical fare. He had his Schopenhauer in German; Shakespeare translated into Swedish, novels of Zola, and lots of Strindberg. When he came to ports in South America, he had his fun. It sometimes got him into trouble. He had clap once or twice, so he became choosier about his dates. On one occasion he asked a senorita to stand on a chair, lifted up her dress, examined her private parts with a flashlight, refused her, walked out, and She promptly

chased him down the street with a hatchet, like a spurned Carmen. On another occasion he did not realize the girl he was soliciting had her boyfriend nearby. My father was chased, and a bullet ricocheted and hit him in the shin. I always admired that white pock-like scar on his leg. In Vera Cruz, Mexico, he was given a Mickey Finn in a banana wine and woke up, sick as a dog, with his wallet gone. He never ate a banana again. He got malaria in the tropics and the rest of his life he would have episodes of shivering and fever when the sporozoites became active. He kept his seamen's handbook and as a child I marveled at all the knowledge it contained, especially the lurid descriptions of venereal diseases seamen should avoid.



My father, Axel Elof Carlson as a child about 1910 in Stockholm (upper left); as a merchant mariner in New Orleans about 1925 (upper right); as an elevator operator in New York City about 1940 middle left); and as a merchant mariner in Hamburg, Germany, about 1921 (middle right). As a youth about age 15 (lower center). I like to think, just as the fossil record is incomplete, so are the remnants of our past.

My father entered North America through Halifax. He had enough of the merchant marine and decided to explore this part of the New World. He moved to Quebec and became a waiter at a hotel. This improved his French. It was a summer job, and the workers were promised, in addition to the tips that they kept, a salary paid on leaving. The owner reneged. My father organized the other waiters to tie every bed sheet in every room they could enter that night, into tight sailor's knots, and they then left. He had been on bad relations with the proprietor after criticizing the French chef's cooking.

My father must have liked talking French because he next moved down to New Orleans. I remember seeing a photograph of him, tilted in a chair, reading, on one of those magnificent metal grilled balconies that grace the French Quarter. He hated the racism in the South and moved back North, this time to Kingston, New York. He got a job as a short order cook at West Point. He loved the cadets, their youth, and their vitality. He was asked by them who would win in the upcoming football game. True to his love of the sea, and his indifference to sucking up to employers, he said Navy would beat the pants off the Army. They did. On Monday morning a gathering of cadets cornered my father, hoisted him aloft, turned him upside down and promptly filled his pants with molasses and mustard!

My father ended up in New York City and stayed there most of his life. He became an elevator operator. After he met and married my mother, he settled down as a loyal husband and a kind father to his children. He was one of the gentlest persons I knew. He had little ambition, loved his books, listened to classical music on the radio, enjoyed occasional trips with us to museums, painted beautiful water colors, and suffered within, enduring a bad marriage. He liked to cook and was a far better cook than my mother.

Every Christmas that I can remember, he would take the train to Third Avenue in Yorkville and buy items for Christmas dinner from a Swedish delicatessen. He also bought a Christmas magazine, *Julstämning*, [Christmas

spirit] at Bonniers. He cooked a Swedish yellow pea soup and I loved the cloth bag that contained the dried peas. It looked like a pirate's bag of gold nuggets. He cooked separately a giant sausage, fleskorv, which had a white gray pork stuffing. As side dishes we would have huge flat rings of dark brown Knackebröd, Swedish herring, kominost cheese, and dishes of jellied lingonberries. He made sure that my brother and I signed or made greeting cards for the Christmas season so he could send them to his mother. They corresponded in Swedish until her death, usually two or three letters a year, but always one during the Christmas season. During the Second World War, when allowed to do so, he sent to his mother packages of coffee, tea, and sugar, items in scarce supply. He would translate her letters for us. She often complained she was at death's door, a lament of some thirty years duration that none of us took seriously. She did have arthritis and in her old age lived alone in a home for the aged in a northern suburb of Stockholm. She had many cousins, nephews, and nieces, who visited her but I never knew their names. She would occasionally reciprocate and sent gorgeous linen napkins and once a set of silverware for four. To me it was as if we had received crown jewels. Always she asked: "When will you bring the children to visit me?" She got our relatively infrequent pictures, and there is one photograph I admired where she is surrounded by her relatives, with framed pictures of her son, husband, and grandchildren proudly displayed on her desk.

My father read to us from *Alice in Wonderland* and *Through the Looking Glass* when we were young. His lilting Swedish accent was like music. He would draw stick figures to amuse us. He taught us chess and then whenever we wanted to play, he promptly entered into a four move Fool's Mate to throw the game and get back to his reading. He listened to football every Saturday in the Fall. During the spring and summer he loved cheering for the Brooklyn Dodgers, while his disloyal sons, as independent minded as he, became Giant (Roland) and Yankee (me) fans. It made for heated arguments as we got older and each of us wanted to hear our team on our only radio.

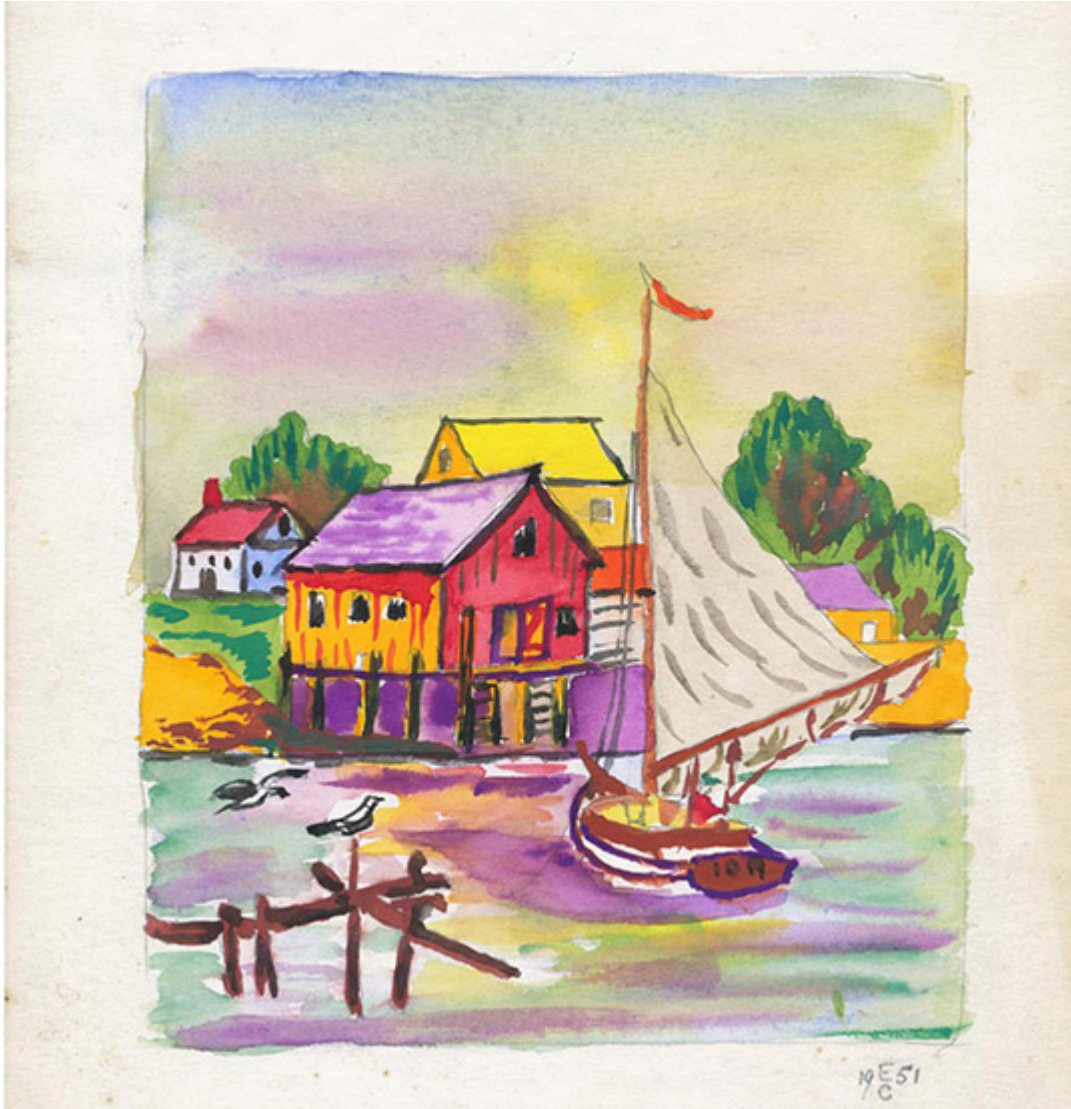
My father was politically liberal. He championed the labor movement. He revered Eugene Debs, Samuel Gompers, Joe Hill, Clarence Darrow,

John L. Lewis, and others who organized or supported unionization and got labor free from the tyranny of bosses who cared little for the plight of their workers. He became a charter member of Local 32B, the Building Service Employee's International Union. "Without the union," he told us, "we would be starving." He was sympathetic to Marxism but did not become a socialist. He read every part of the political spectrum and harvested the discarded papers in his building and brought home *The New York Times*, *The Herald Tribune*, *The Journal American*, *The New York Post*, *The Daily News*, *The Daily Mirror*, and during the war years, *PM* and its later incarnation as *The New York Star*. When I was in high school, I brought to class a clipping about geometry from *Gasoline Alley*, a strip in the *Daily News*. My mathematics teacher refused it, saying "I won't take poison in small doses." I realized then the difference between the ideology of Communism and the respect for diversity among liberals like my father. I admired my father's values. He believed in one world that allowed people to move freely. He never became an American citizen because he was born a Swede and he felt it would be false to reject the country that raised him and educated him with relative respect and freedom. He loved America. But being Swedish was like a family identification. At best America was his in-law by marriage. Roland and I were Americans and not Swedes. It was all very logical to him.

My father never missed a day of work from the time he began working at 2 Lafayette Street in Manhattan until he resigned, crippled with arthritis some thirty years later. He wasn't even given a handshake by the owners of the building. My father expected that indifference. Capitalists could often be greedy, and they expected loyal workers but offered little loyalty to them. It was why he so adored labor unions. He lamented the damage done to labor unions by good times. "Put a few bucks in a working man's pocket," he said, "and he'll think he's a Republican."

He moved to California when his arthritis was agonizingly painful. He sat in the train for five days and his knees were nearly locked rigid. My mother got him to her apartment in Long Beach by cab. My father refused to seek Social Security benefits or welfare of any sort, claiming that he was not a beggar. They lived for a short time on a modest inheritance my

grandmother left when she died. I arrived to take a position at UCLA just as their money ran out. I immediately took them into my apartment. My father was a bed patient, and I had a physician examine him. He had ulcers and his right knee cap, I learned from my sister, had been dislocated when my mother had pounced on it in a fit of despair because he couldn't get out of bed. His fingers were gnarled like roots. Miraculously, he outlived my mother by a year. Just as he was being scheduled for surgery on his arthritic joints, he developed angina, and very rapidly the attacks no longer responded to his nitroglycerin tablets. He had a severe episode and his physician ordered that he be taken to Harbor Hospital. The next morning, as I prepared to visit him, shortly after my morning class, Nedra called, and I learned he was dead. I drove home with tears streaming down my cheeks.



Water color by my father, Axel Elof Carlson 1951.



My father about 1955 in his Sheffield Avenue apartment.



My father's mother, Amanda Olausson Carlson in Stockholm.

CHAPTER 2

MY MOTHER

My mother, Ida Charlotte Vogel, was conceived in Tarnapol, now in Ukraine, and born in Bound Brook, New Jersey, in 1893. Her father was Morris [Moishe] Vogel and her mother was Sarah Nussbaum. They were Ashkenazi Galician Jews who followed observant Orthodox Jewish traditions. My grandfather was a Kahane or inherited high priest in that tradition. They had arrived at Castle Garden, in the Battery Park region of Manhattan (Ellis Island opened shortly after they arrived) and didn't like New York City life. They were told by other relatives to try New Jersey and my grandfather chose the first city on the Pennsylvania Railroad line that did not have a dry goods store. He opened his shop near the Raritan River on Main Street. They had little money and tried to make a go by being as frugal as they could. They collected coal along the tracks that fell from the passing trains and used it to heat their home, which was the floor above their store.

My mother was soon followed by a parade of children in the next few years, six altogether being born by 1905. My mother remembered a Polish maid who helped out with the washing and cooking for this large family. They traveled to Somerville for the Sabbath and high holiday services. The store prospered and the family was entering middle class American life. My mother was very proud that her father used a checkbook. He encouraged his children to do well and when my mother showed an aptitude for music in elementary school, he bought her a violin and she began taking lessons. He told her that when she was older he would send her to the music conservatory in Vienna, a city he had spent some years in before marrying.

Other immigrant relatives were scattered in New York City, in New Brunswick, and in other New Jersey cities.

The Raritan River passed through Bound Brook and during the Spring it occasionally flooded. The Army Corps of Engineers tried to regulate it but was not successful. In 1906 a major flood occurred. In 1989, while reading the local Bound Brook newspapers for those early years in the library archives, I came across an article that stated that the engineers had set the controlling switches for the sluice gates incorrectly and instead of keeping water from overflowing, they actually poured excess water onto the river banks during a flood. My grandparents tried to rescue their wares by moving them from the flooding first floor up to the living quarters. They stood hip deep in water as they got the materials moved, shelf by shelf.



The Morris Vogel Dry Goods store in Bound Brook, New Jersey 1908.

My grandmother developed a chill and a fever. My mother remembers, a few days later, getting up in the early morning to go to the bathroom and she stumbled over her mother's body, already laid out in a sheet in preparation for burial. She had died of pneumonia.

As the oldest child, although only in sixth grade, my mother was allowed to leave school to care for her younger siblings while her father tried to find a new wife. She continued in this role when he did remarry. This was difficult for both the children and their new mother. They resented

her tight control over the food and the cupboards. They resented her discipline. Once, she complained about my mother's interfering with her running the household and my grandfather hit my mother on the back of the neck with such force that she gagged, almost swallowing her tongue. While she recovered, her father told his new wife, holding a revolver in his hand, that if his daughter died, the first bullet would be for her and the second for him. My mother was not the only child to rebel against the situation at home. Her brother Peter (then called Simon) ran away from home, fell off a freight train and lost a leg as the wheels ran over it. My grandfather set aside money for him and sent him to be educated in Vienna where he became a physician, returning to the United States, where he specialized in disorders of the ear, nose, and throat.

When my mother turned nineteen, my grandfather decided she should be married. He came home with a salesman he had met on his trips to New York. "Ida, this is Max. He will be your husband." Morris Vogel still believed in the Orthodox tradition of arranged marriages, at least for his daughters. Max was born Max Weissband, in Chernobyl, Ukraine. He trimmed his name to Weiss when he came to the United States. When my mother married him, she lost her US citizenship and became a subject of Russia, because women then were legally the property of their husbands. She eventually got her citizenship back by applying for repatriation in 1940. My brother and I were with her when she was sworn in. She did so because my father wanted her to vote for Roosevelt.

Max and Ida moved around the country. Max was not a good businessman and failed frequently, closing up his shop and moving on to avoid his creditors. He usually opened a dry-cleaning place. They had set up a shop as far west as Denver. He did not register for the draft in World War II and barely escaped being deported. His two children with Ida saved him. Sadie was born in 1914 and Benjamin in 1915. The only kind words she ever said about her first husband concerned Bennie's childhood illness. He contracted diphtheria, a deadly bacterial disease that forms a pus-like sac in the back of the throat that can block the trachea and cause a child to choke to death. Bennie was dying and turning cyanotic. Max prayed and said his father appeared to him as a shrouded ghost and told Max to soak a

bed sheet in cold water and wrap the boy in it from head to toe. This Max did and Bennie coughed up a wad of diphtherial phlegm and his breathing became less labored. He had passed his crisis and was on the way to full recovery.

More often, when my mother talked of Max, she referred to him as a monster who beat her, who was unfaithful, and who was unloving. I don't know how much of that to believe. The marriage was a failure and my mother and Max fought frequently. My mother was progressively becoming paranoid, a condition her sister Kate told me, in 1957, that she had recognized in her childhood. About 1924, back in New York, my mother and Max separated and since neither could support the children, they were placed in the Hebrew Orphan Asylum. My mother tried to make a living as a domestic, as a millenary as she called it (in those days hat making was an important part of the economy), and eventually as a street vendor, selling key rings.

My mother tried to get help from a Jewish charity organization about 1924. Her story was consistent but peculiar. She said she complained about her difficulties and that she wanted her children back and needed financial help. As she and the charity agent argued about her demands, their anger increased and the agent allegedly told her, "What you need is ovarian extract pills." I presume this was a reference to some substitute for a satisfied sexual life that normally came from a man. My mother promptly stormed the table and became hysterical, throwing papers and desk furnishings onto the floor. The police were called, and my mother was taken to Bellevue Hospital for observation. She was declared insane and sent to Central Islip Hospital on Long Island. She said her father took the Long Island Railroad to visit her and she spent three months in the asylum. To her it was a snake pit. She described the horror of walking into a bathroom to see a patient washing her hair in a toilet bowl. She described eating oatmeal with roaches in it and was told by another patient, "Don't say anything; you'll be punished"

When she was released, she returned to New York and resumed her cycle of odd jobs, especially as a street vendor. On one cold winter day in

1927, she was walking down Broadway near 75th Street. She stood inside the doorway of a hotel shivering and rubbing her hands. The doorman thought she looked too shabby for the guests, so he told her to go downstairs to the employee's dressing room to warm up. One of the elevator operators was switching from his uniform to his civilian clothes. He began talking to my mother and felt sorry for her. He asked her out to dinner and found her hauntingly attractive and very different from the women he flirted with in the hotel. Like him, she was a middle-class child who had lapsed in status. Like him, she grew up with only one of her parents. My mother adored this handsome Swedish man and looked upon him as a saint for rescuing her. They began to go out regularly and moved in together. Max hired a detective, who collected evidence of their adultery, and sued for divorce. In those days adultery was the only grounds for divorce in New York State. After the divorce from Max, my parents went to Newark, New Jersey and were married by a justice of the peace on September 28, 1928. A year after their marriage, my father bought a violin and told my mother to play again. All of my mother's relatives were scandalized that she married out of her faith. She was shunned as both disloyal to her religion and demented.

My brother Roland followed a little over a year later. I followed in 1931. The financial crash of 1929 and the ensuing Depression made life difficult. My father even asked my mother, when she learned she was pregnant with me, if she wanted an abortion. She said no. I never condemned my father for his suggestion. I respected his concern and that he respected my mother's wishes. Fortunately, my father's job was relatively secure. New York's buildings needed elevator operators, my father had seniority, and he had the wisdom of having joined the union as soon as it began organizing. I remember little of my parents' lives during the first five or six years of my life. It was a happy time. We ate modestly but never went hungry. By the time Roland and I were toddlers, Sadie and Benny were on their own, free of the orphan asylum and launched into the work world.

I knew my mother differed from other people because she would have occasional hysterical fits at home and throw dishes and scream in rage. At those times my brother and I headed for the bed and slid under it. I also

realized that her behavior in public was not normal. When we were taking subway rides, she would curse at a person for staring at a wart above her right eyebrow and then take us off at the next stop and wait for another train. In restaurants we would sometimes be pulled away from our unfinished snack or meal because of some imagined slight by a customer. If the slight was by a waiter, my mother would punish him by smearing the food over the top of the tablecloth for him to clean up. Her phrases often told me of her imagined wounds: “What are you staring at?” “Your eyes should pop out.” “A curse on your rotten head.” She sometimes cursed in Yiddish, which I didn’t understand.

There were times when she would shout and scream at a neighbor and the police would be called. My brother and I would shiver with fright in our room, peeking out at the policeman, who frequently shrugged it off as a common dispute and leave with a “Cool it, lady.” By the time the police came my mother would be calm and very docile, terrified that she might be sent back to the insane asylum. When my parents fought, which was quite frequent, it was usually my mother’s jealousy that was the cause. She would accuse my father of looking at other women in the building or secretly passing messages to them for trysting opportunities. My father would reach a point where he would roar back and when that failed to settle things, there would be a barrage of screams and occasional pummeling of him with her fists. He would then grab a milk bottle, let out an ear-shattering blast, and threaten to kill her. This would make my mother go limp with fear and she became very docile, and the fight was over. Meanwhile my brother and I would be in terror, our stomachs knotted up, and our hearts racing.



My mother, Ida Charlotte Carlson, taken in studio 1932 with inscription by my father.



Pen and ink drawing of Ida Carlson ca 1946 by her son Roland.

On one occasion, when my mother was yelling at me in the subway, I defied her by taking a rolled-up wad of chewing gum and planting it on the same spot over my eyebrow where her wart was, much to the hilarity of the passengers in the car and even the amusement of my mother. Things eased up when my brother and I were in our teens. By this time the Second World War was well on its way and my mother started to go out in the afternoons and early evening. She wanted an income of her own. She was unsuited for domestic work as she quickly learned when she was dismissed within a few days because of her abusive or suspicious personality. She started selling key chains again. I would go with her to lower Manhattan, and she would buy a box of key rings and then sell these on street corners in the city. On one occasion, she met a man who told her she'd make more if she played her violin. He played in the backyards of apartments and people would throw coins from their windows, wrapped in tissue paper. My mother did this for a while and found it was indeed profitable. She was afraid of getting mugged in the back alleys and switched to being a street musician. Walter Winchell in his columns in the *Daily Mirror*, referred to her as Sally in the

Alley. I used to see my mother playing near Columbia University on Broadway, on 14th Street, and other places in the city. She would place her violin case a few feet in front of her and play bel canto songs of Stephen Foster, Fritz Kreisler, and other “easy listening” pieces. She said she loved playing in front of Carnegie Hall. On one occasion, when I was at NYU, I dated a girl and was walking down Eighth Street and spotted my mother half way down the block. I thought I would die of shame if my mother gave me a sweet greeting and called out to me, “What are you doing here, Darling?” I quickly steered my date across the street and lapsed into a morose mood. That killed that date for the future.

When my mother wasn't in a psychotic rage, she was a very loving person, very generous, and kind. She had an overextended sense of gratitude and gave generous tips to those who spoke kindly to her, or she gave gifts to those who did her a favor. In her good moods she would take us to bookstores, art stores, toy shops, and spend her meager money on us. She protected us from the rough behavior of the children in the slums where we lived. Most of the summer would be a round of trips to the parks, museums, zoos, and cooling off opportunities on steamy hot days with trips on the Staten Island ferry. She regularly took us to the movies, but many a plot was left unfulfilled when she heard whispers of conspirators behind her and whisked us out into the sunlight to escape her tormentors.

On rainy days she would join us in painting. She liked to paint in oil colors on small canvasses and she had a delightful primitive style. She would paint an upstairs neighbor sitting on a bench by the curbside. She would paint an Indian chief in headdress. She loved to paint vases of flowers. Although she was a dropout from sixth grade, she read newspapers and occasionally read travel books and cook books. When Roland and I were in our late teens, after the War ended, she began to travel. She would save up from her violin playing, purchase a one-way railroad ticket to Los Angeles, put some clothes in a cloth sneaker bag, take her violin and get on the train. When the train came to a scheduled stop for dropping off and picking up passengers, she would get out and play her violin, collect money for her meals, and get back on. She usually would arrive unannounced in Long Beach to stay with her daughter Sadie. After two or three weeks my

father would get a telegram asking him to send money for her to come back to New York. This happened two or three times a year. She would return with snapshots of her visit, and she would be in good spirits for a few weeks. Slowly, she would build up hostility and cultivated suspicion that a gang of Hebrew charity workers were after her to send her back to the nut house, and she would be readying for her next trip to California.



Watercolor of a Native American by my mother, Ida Charlotte Carlson, about 1948.



Silhouette of my mother about 1940.



Sarah (nee Nussbaum), daughter Ida, and husband, Morris Vogel 1893.

CHAPTER 3

ROLAND

My brother, Roland Charles Carlson, was born November 27, 1929. At the time my parents lived on Dahill Road in Brooklyn, but the birth was in Israel Zion Hospital, later called Maimonides Hospital. My mother said she thought her baby was healthy the day he arrived, but she was brought, the next day, a very sickly baby with discolored skin. She protested that this was not her child, but she was assured that indeed this was her child and that he was a “blue baby” because of a congenital heart defect. Her doctors told her that the baby had six months to live. I often wondered how Roland felt being told that he was not his parents’s child and that the real Roland was given to some lucky parents and the unhappy Carlson couple was given a sickly child. Such rare events do happen, but I am skeptical that this actually happened to us. Roland had features very much like his Swedish grandmother and I see some of his features in my own children.

Whatever my mother may have believed about Roland’s origins, there is no doubt she loved him and kept him alive in an era when children with his condition had a greatly diminished likelihood of living long. Roland was about two or three years old when he was playing in the front yard of the apartment and slammed a metal gate on his thumb. The distal digit of his right thumb was cut off and could not be reattached. He had a small root of a nail that stuck out from his shortened thumb, but it did not interfere with his ability to write or draw. Although Roland was 18 months older than me, we soon were physically similar in size and strength. His poor circulation slowed him just enough that by the age of five, I was able to keep up with him. We usually attended the same school, but in those days, there was a special ground floor room set aside for students with physical handicaps.

This was called a “sunshine class.” Roland and his fellow handicapped students would have a nap in the afternoon, and they would be exempt from recess when students played their rough and tumble games. His classmates included those with damaged heart valves from rheumatic fever, asthmatics, polio victims, and others who had difficulty climbing stairs or functioning in the normal schedule. Roland would sometimes come home crying because a friend had died of an asthmatic attack or heart failure.

Roland had an early talent for art and his drawings of galleons, airplanes, zeppelins, and other objects impressed me by their detail and his careful line drawing. He was also studious, like me, and enjoyed reading his homework assignments and took pleasure in the many books he began to collect. We bought Big Little Books with their flip pages that produced a motion picture effect of a favorite character such as Dagwood colliding with a postman. We bought the Disney books as they came out for Mickey Mouse, Donald Duck, and the early movies, *Snow White* and *Pinocchio*. Roland loved adventure superheroes in his comics, and I preferred the *True Comics* and *Real Heroes*. I may have been Roland’s physical equal as the younger brother, but he was far cleverer than me. If I read my comics and wanted to read Roland’s, he didn’t switch comics for an exchange of reading. Instead, he asked me to give him my comics so I could have the privilege of reading his. I had no will resist the pleasure of good comic books, so I gave them away to him. Later, when I would want to read his comics and had none left to give him for that opportunity, he prepared a “debt card” and put the date and how many comics I read, and he charged me a fee for reading them. This kept me pauperized whenever we received an allowance and I had to depend on those occasions when my mother would take us out and treat us each to an extra comic so I could have some of my own.

We liked each other and enjoyed scrambling up the rocks in Central Park, playing in the swings and jungle gyms, running to faucets, enjoying our ice cream cones, and playing “sock ball” in the apartment. Like most children, we had moments of sibling rivalry. On one occasion, I was so convinced my brother got a larger piece of cake than I, that I threw my own onto the floor in a rage, only to be punished by my father who said, “If

that's how you feel, eat your share off the floor." I learned quickly not to emulate my mother.

We slept in a double bed and carefully drew an imaginary line so that each of us knew whose territory was being invaded. Roland had an unusual habit throughout his childhood, which he maintained until he was of high school age. He liked to rock back and forth while stretched out in bed, rolling from left to right until he fell asleep. He also was not fully weaned until he was about ten years of age, having a nightly "buttey," as he called it, of warm milk, and I would hear him lustily smacking the rubber nipple and the gurgling of the air as it streamed through the bottle. I frequently listened to his enlarged heart and the loud thumping it made.



Roland loved watching baseball games or buying books on baseball. He sketched some of his favorite players. This, done about 1949, was of the young Casey Stengel.

Roland loved listening to the New York Giants on the radio and he was much more of a fan than I. He collected books on baseball and took an interest in history, especially the Civil War period. He liked to listen to music, especially Italian opera. His musical ability would have been excellent had he taken any lessons. In the Depression there was no money for such opportunities. He could whistle the entire Beethoven *Violin Concerto in D*.

Our mother made sure we kept our athletic activities to a minimum and I had to slow down so Roland would not be exerted to keep up with me. We never learned to roller skate, to swim, or to bicycle. We usually lived on the ground or first floor of our apartment building. We rarely lived more than a block or two from our school.

When we moved to Sheffield Avenue in Brooklyn, Roland went to Thomas Jefferson High School and came home crying after a few days in school. There were no Sunshine Classes in high school and he was not believed by the cleaning man, who ran the freight elevator, that he was handicapped. After Roland gasped his way up the stairs to fourth or fifth floor classes and was scolded by teachers for coming to class late, he quit school. He stayed home for the rest of the year and then resumed by going to the evening classes, which were less crowded, slower paced, and more accepting of the needs of older students. The rising cost of living after the end of the war led to financial hardship at home. There was a short period of time, while waiting for my father to have some money that didn't go to rent, utilities, or food, when my brother and I shared one pair of pants, I wearing them to school in the day and he wearing them in the evening.

After graduation from high school, Roland got a job at *Nordsjernan* [North Star], a Swedish-American newspaper. He was a printer's devil and enjoyed the opportunity to earn a salary and see the physical process of how a newspaper was put together. After two years there were not enough readers to keep the paper solvent and Roland was laid off. He became an elevator operator and worked in the City Hall area.

After our parents died, I asked Roland to come to California and work there. I got him a job at UCLA drawing illustrations for my TV biology

course. He was much enjoyed by my graduate students and if I criticized Roland, they would rise to his defense. He enjoyed playing chess with the students and they much appreciated his cartoons and help with illustrations for their articles. I had Roland draw all the illustrations for the books I wrote while in California. He had his own apartment but never learned to drive. On one occasion, one of the students began teaching him to drive and they were practicing on campus. Roland's car grazed a car operated by a student from China. Both were instantly struck with guilt and apologized to each other. Roland felt at fault and vowed never to drive again (and he never did). The Asian student was terrified he might be deported and wanted to know what he could do to pay Roland for the damages Roland's car inflicted on his own car!

Roland's temperament was that of a pessimist. He believed little good happens in the world. He expected very little kindness from people, especially bureaucracies of all sorts. He never voted, claiming that all politicians serve special interests and were not to be trusted. He never attended a religious service, but in his youth, he corresponded with the American Bible Society whose radio programs he listened to. He would send in weekly Bible lessons and get these returned with corrections and comments. They were Seventh Day Adventists and I looked on their literature with curiosity. I did not know fundamentalists still existed and could not believe there were groups that hostile to evolution. I once asked him to inquire how the Adventists interpreted all the fossil bones of extinct species we had seen at the American Museum of Natural History. They wrote back "Have faith." I concluded they were ignorant of science and Roland kept a modest faith that there was something other than atheism in this universe. At best I would call him a deist. In the years when we were apart, we corresponded. Roland's letters were usually short and formulaic. He rarely revealed his innermost feelings. He was a private person who shielded his own privacy. Only on a few occasions did he let me know his own turmoil in not wanting to date women he met in class, for fear he might get involved and his heart might not survive the emotional and physical passion of a romance. He had some male friends but, two of them he told

not to see him again when they made sexual advances. It was a disappointment to him that he could not enjoy a sexless friendship.

Roland returned to New York when I left my job at UCLA. He returned to the elevator job for a while but it was a dying occupation, one building after another becoming automated. The Union told him they might have to put him on porter work. This would have been too taxing physically for his health. He left and found a job as a chartist for the Nielsen rating company. There he prepared graphs and charts on the sales of different brands of products, which were sold to individual companies. He lived on 75th Street in Manhattan, across the street from our brother Benny and his wife, Blanche. Roland lived a quiet life. He used the weekends to shop for books, get his groceries, pay bills, paint in water colors, and go to occasional museums. He regularly watched the New York Giants at the Polo Grounds until they left New York and on the last day they played, September 29, 1957, he went to the home plate and pitcher's mound and swept dirt into a mason jar and sealed it. He would visit Ben or take the train to Stony Brook and visit us at our home. He was a much-loved uncle by our children, always bringing a treat or a toy. He loved playing chess and children's games. On his first visit to our Long Island home, he saw one of the children running into the back yard which was filled with some 40 trees, and he quickly alerted us, "The children are running into the forest."

Roland was told several times that he was suffering from congestive heart failure. He had tried in his youth to enlist in the Army and the physician who listened to his heart laughed. The 4F classification galled him. He said he would have willingly taken any surgery to repair his heart had it been available to him. Unfortunately such surgery was not available until the mid-1950s and by then Roland's heart was enormously enlarged and the vascular pressure would have been excessive had his heart defects been repaired. He had a ventricular septal defect and a defect of the pulmonary valves. He collapsed at work in 1973 and spent a week or two in Bellevue hospital where the diagnosis of his condition was made. He was given medication to regulate his heart beat and he managed as best as he could with his infirmities. Roland had suffered severe headaches all his life, possibly from the diminished oxidation to his brain. He would try Bromo-

seltzer and other over-the-counter remedies which would ease some of the pain but he rarely had a week go by without one severe “blinding” headache.

Roland collected books by the hundred on his favorite topics, baseball and the civil war. He also had a large collection of Mexican mint stamps and bid at mail auctions, especially through the Elmhurst Society, to fill his collection. He loved the history that stamp collecting taught him and he would research the events represented in commemorative stamps. After his attack I insisted that he get a telephone so he could call in case of an emergency. He did and this gave us an opportunity to talk on the phone between his visits. On May 31, 1975, I received a call from Nedra saying that Nielsen Ratings had called. They said Roland didn’t show up for work and did not answer his phone. I knew he was dead. I called my sister-in-law who had a spare key to his apartment, told her I’d be over, and drove to Manhattan. I called the police and when they arrived, they kicked in the bolted door. Roland was in his bed, looking very relaxed, his face blue, with a trickle of blood from his nose that dotted the pillow. I kissed him on the cheek and waited for the undertaker to take him away and for the police to seal his apartment.

Several weeks later I got his wallet at the police repository office and was surprised by its contents. He had several photos of naked women, part of my father’s pornography, collected from his merchant marine days. At least Roland had an opportunity to look.



My brother Roland (right) and I (left) in 1934. My mother said I burst out crying when this picture was taken by flash.



Cartoon by my brother Roland of man with oversize tie, about 1946.



Pastel portrait of Roland Carlson by his brother, Elof Carlson, ca 1949. It was the first (and only) pastel portrait I drew.

CHAPTER 4

MY FATHER'S HAPPY CHOICE

When I was born on July 15, 1931 the Depression had been in force for some eighteen months. People were being laid off, wages were being cut, and it was a time of great anxiety with little response by the federal government to change things. It would be another nine months before President Roosevelt would be sworn in as president. My father was relieved that he had the security of his job at 2 Lafayette Street in Manhattan as an elevator operator and the strength of the union behind him to keep him there as long as the building had tenants.

With my brother Roland barely eighteen months old and my unexpected arrival as an unplanned child, it must have been difficult for our mother to manage. My parents discussed buying furniture, a bassinet, perhaps, to make it easier to clean the baby. My father decided that wasn't a good idea. A baby grows up very fast and baby furniture rapidly becomes useless. He solved the problem by having me sleep in an open suitcase on the kitchen table and instead he purchased the *Encyclopedia Britannica* on the installment plan. Virtually no middle class people who respect their values would make such a decision. Baby comes first. But a baby does not know if it is sleeping in a suitcase or a cradle. It will feel as comfortable in either place. It can be washed as readily in a kitchen sink as in a bassinet. Cradles and bassinets are for relatives and friends to see the baby. But my father had no relatives here and my mother was ostracized by her relatives who, as Orthodox Jews, considered her dead. In their curious failure to live up to their middle class heritage my parents had become the most nuclear of nuclear families.



My father purchased the 14th edition of the Encyclopedia Britannica. It came out just as the Depression hit and it was a financial catastrophe for the company. I don't know how much my father paid for it, but it was a treasured investment for his children. I loved browsing in it.

Things may have been financially difficult for them at the time of my birth because my brother was circumcised and I was not. I suspect that they couldn't afford the extra charge. I never asked my parents why they chose not to circumcise me and it may have been, instead, that Roland's circumcision was an appeasement to my mother's father who was not won over. While Roland later on in life regretted his parents' decision to mark him Jewish, he was spared the painful inflammation I experienced growing up with a foreskin that harbored what one English physician in the 1890s described as "a sewer of filth." As an unwashed child who rarely took baths and whose mother was not fussy, I had bouts of painful irritation and festering infections of the coronal region of the glans and then my mother would provide the boric acid rinsing that cleared them up.

I don't remember the exact year when I began reading the *Encyclopedia Britannica*. I must have been six or seven. I would pull out a volume and look at the black and white photographs and with great pleasure see how the locomotive evolved from the tiny boiler on wheels, looking much like a giant clockwork of gears that was manufactured by Trevithick in 1803 through the more familiar models such as Horatio Allen's first American train of 1830 that resembled a whiskey still on a wheeled platform. Some of the photos reminded me in more detail of the wooden locomotive models I would buy at Woolworth's and glue together. The more modern steam and diesel locomotives would chug along in my mind as I savored each photograph. I wasn't old enough to look up topics of interest. I stumbled across these leafing through the volumes on a rainy day.

The universe opened up that way. I would come upon pictures of parasites and have “the happy horrors” looking at a kidney bursting with ascaris worms as I would encounter “Parasites.” I would look with awe at the “Bon-seki” or “Bon-sai”, those lovely potted plants that the Japanese and Chinese cultivated, especially the miniature trees. I would marvel at their graceful appearance, some wind swept, some designed as placid garden settings inviting me in my imagination to enter and nap under the trunk of a gnarled and ancient tree. I was fascinated by the line drawings. They were black and white and meticulously drawn, a richness of details bringing back a temple at Aswan, replete with palm trees and dhows. I looked with wonder at two almost naked youths, stripped to their shorts, held by their necks in chains to posts, waiting to be sent to their Maker in an article on “Auto-da-fe”. The Grand Inquisitor, enthroned and haloed, watched with pleasure at the heretics being prepared for punishment. I kept returning to the photos accompanying “Comets”. I saw the May 4, 1910 appearance of Halley’s comet and I would calculate its return in some 75 years to be about 1985 or 1986. Would I be alive? I wondered what it would be like to be 55 years old, a good 45 or more years to wait. Alas, all those decades of anticipation were for naught. Halley’s comet was a bust when it reappeared and I had to wait for the rarer visits of Hyakutake in 1996 and Hale-Bopp in 1997 to appreciate the “fuzzy snowball” with a tail that is one of the most gorgeous sights to see with the unaided eye and a breathless marvel when seen through binoculars.

I began to read the *Britannica* the way Thoreau encouraged his readers to walk. I meandered or sauntered through the volumes with no particular place in mind. The universe was filled with wonders and there was no single way to sample them. Browsing was always an opportunity for discovery. It was ferociously difficult to read the articles on topics I liked until I was in high school.

The *Britannica* was my source when I wanted to check out something I learned in class. During one history class at Thomas Jefferson High School, my teacher, Mr. Emil, mentioned that Popes were elected unanimously. This struck me as strange. How could a gathering of Cardinals pray and arrive at a unanimous vote? If true, that would make the universe work through

miracles and the deep skepticism and atheism of my upbringing resisted that possibility. I chased down the references from “Pope” to “Papacy” to “Conclave” (I learned that knowledge is not always organized the way we think). There I got my answer. The Pope dies; the Cardinals are convened and isolated from human contact. They are slipped food through a small portal. They deliberate and they vote. If there is no decision that day the votes are burned with damp straw and the public gets to see that yet another session must take place the next day and the process continues until a two-thirds majority is attained. Then the Pope is announced to the pleasure of those waiting to hear who will rule the Church for an indefinite future. I digested all this information and next day in class I raised my hand, “Mr Emil. Yesterday you mentioned that a Pope is elected by unanimous vote. I’d like to tell you what I read in the *Encyclopedia Britannica*.” I recited the facts triumphantly and rested my case. There was stunned silence in the class. I guess my classmates expected me to be put down for challenging the authority of their teacher. Certainly I had no such intention. I was interested in the truth and in correcting what sounded so improbable to my scheme of things.

“Class. Did you just hear what Elof said? Do you know what he did? Elof showed you what a scholar is like. Don’t take the word of those you hear when in doubt. Look it up yourself. That was wonderful.” After class he told me. “You should go to college, Elof. With a mind like yours, you could be a principal someday.” For Mr. Emil, that was the highest aspiration he could think of for a child of the slums.

Years later, like my father, I bought a set of the *Encyclopedia Britannica* when Christina was born. The representative I contacted tried to sell me the *Britannica, Jr.* as well. He said children can’t read the *Britannica* itself. I insisted on the *Encyclopedia Britannica*. My father made the right choice.

CHAPTER 5

EVERY YEAR A DIFFERENT SCHOOL

I attended school in every borough of New York City except Staten Island. I went to two schools in the Bronx, three in Manhattan, one in Queen's, and four in Brooklyn. There were also places we lived just for the summer where I didn't go to school. The constant movement occurred because it was the Depression and people did not sign leases and any landlord knew there would be few takers among the poor for a leased apartment. It also occurred because of my mother's paranoia. Whenever she felt the conspiracy against her was getting too thick, she would agitate to move.

We were too young to know that we were moving until we were about 10 years old. I would be awakened by my father and he would roll up our mattress and tie it with twine and get the apartment ready for the movers. The Santini Brothers usually moved us and often it was with an unmarked van, my mother being suspicious that the conspirators would call and find out where we were going. As my parents got everything organized I would try sleeping while sitting in a chair. It never bothered me that we moved a lot. I did not expect lasting friendships among my classmates and since this was an annual event, I didn't think of seeing my classmates again when the classes ended in June.

The earliest schools I remember attending were in the Bronx. We lived not too far from Yankee Stadium, on Brook or Tipton Avenue. It was a mixed neighborhood, and I remember a neighbor who was Dutch and we had to take our shoes off every time we went to their apartment where I had a chum. There was also an African American, Leroy, who was a year or two older than me and who lived on the block. I admired him because he could

make rings out of peach stones. He taught me how to rub a peach pit on the sidewalk, abrading it, first on one side and then the other, until it was the desired width. He then drilled a hole by banging a nail through the center and worked a rat file in it until it would fit.

The subway rides in that part of the Bronx were elevated and the passenger seats on those trains had rattan woven seats and backs. I would usually look out the windows, kneeling on the seat, and once lined up some toys and a nickel on the window sill and then promptly forgot to take them as we got off and I sobbed at my loss.

The next place we moved to was near the Grand Concourse, about 189th Street. It was a Jewish neighborhood. I remember on Fridays and Saturdays when some of the women would call out “Little boy, little boy, please turn on the light.” I did not know it, but I was considered by them as a “Shabbot goy,” serving a function for Orthodox Jews in doing what was not permitted for them during the Sabbath.

There was a candy store across the street from our apartment and I would enjoy sucking colored sugar syrup from tiny wax bottles, eating colored candy hemispheres glued on paper in rows that I would chew off like kernels of corn, and buying Fleeer’s double bubble gum whose waxed wrappers had comic strips and odd facts as well as baseball cards. The neighborhood was not too far from the Bronx Zoo and we frequently went there to enjoy the animals.

Our next school was in Queen’s in Sunnyside, not too far from the Queensborough Bridge. I recall the school yard and not too far from it was a candy store where I bought a bubble gum with an unusual piece of blue paper. If the paper was held to the light and then washed with water or licked with spit, one layer could be peeled off and a blueprint of a baseball player emerged. I thought that was impressive. I wish I could say the same for the school, but it is irreversibly expunged from my memory. I do remember later, when I was in junior high school, referring to the students in the school then as having a sympathy for the German American Bund. I don’t know if that was true or not. Children sometimes lie and sometimes misunderstand what they hear from their parents.

We shifted to 1397 E. 2nd street, the first apartment whose address I can recall. It was in Brooklyn about five blocks from an elevated subway line, the BMT, that took passengers to the beaches. Next to the station, I believe it was Avenue N, was a small baseball stadium in which minor league teams played. One team that impressed me was the House of David, whose members all wore long beards. The elementary school was on the opposite side of the train station from our apartment. I remember the apartment and its foyer. The foyer had marble walls and I loved looking at the fossil shells embedded in them. The apartment was more spacious than the others we lived in and I remember a living room with my father's bookcases and an easy chair. I also remember my father buying a fish tank and he had goldfish in it, messy fish that swam with long turds hanging out like bent pencil leads. I would stare at them for several minutes waiting for the thread to break free and deploring their awkward appearance.

I remember one teacher, Mrs. Nusskern, who used to ask the class what we thought of her hats. She also must have recognized an artistic talent I had because she decided I shouldn't draw with the rest of the students but should do more challenging things. She took me to a room filled with classroom props and materials. I recall a wasp's nest among other items. I think those would have been fun to draw but instead she opened a book to a meticulous Gainsborough landscape of trees beneath a castle covered with vines. "Draw this," she asked and I laboriously tried to copy it, hating every minute of the effort.

During that summer we moved to an Irish neighborhood in Brooklyn but since I didn't go to school there, the location hasn't lasted in my memory. I do remember it being what used to be called a "railroad flat." There was the bedroom for Roland and me by the front window, one story up, then my parents' room, then the kitchen, and then, like a caboose, the bathroom. I woke up one night with a distended bladder. It was unthinkable for me at night to travel through my parents' room while they were in bed, and even more unthinkable to do so in the dark. Being a logical little boy, I opened the window a few inches and peed out onto the sidewalk. Our apartment was directly over a bar and grill. A booming voice screamed out, "Who the

fuck is pissing out the window!” and I quickly slammed the window down and scurried back to bed in a fright terrified that I would be found out.

Our next place was in Manhattan, on 59th street on the Manhattan side of the Queensborough Bridge. We were next door to the Gnome bakery and their cat used to walk the window ledges and climb into our apartment. Roland and I called our cat Buddy. One of our favorite games was to put Buddy in a sheet and we would then flip him into the air and watch him alight on the sheet which acted like a trampoline. Buddy would bounce up and back until we got too exuberant and then he’d scoot off the sheet onto the window sill and to the more peaceful surroundings at the bakery.



We lived just below and to the right on this Manhattan side of the Queensborough Bridge on 59th Street. I was in fourth grade and the school was near the Lexington Avenue Subway on 57th street.

I loved that location and the school I attended on 55th street near Third Avenue. I learned there that I was the teacher’s pet, a situation that would be repeated until I entered college. I liked that status. What teachers liked was my ability to read and come up with unusual answers in class. I remember Mrs. Dematio and how sad she was when she learned we were about to move uptown to Audubon Avenue. She gave me a going away

present of a cigar box filled with brass buttons from her brother's uniform in World War I. She also gave me his American flag, nicely folded. That started me on a button collection, and I amassed all sorts of shanked buttons and buttons cut from mother of pearl and other oddities for my collection. My mother helped me with this collection because I asked her to keep an eye out for weird buttons and she obliged whenever she stopped in antique or notions shops.

I enjoyed the closeness of our 59th street apartment to Central Park and it was a delight to walk along that street. There were the auction houses with their knights in armor suits and other antiquities to gawk at in the window. There was the eyeglass shop where my father had gotten his tortoise shell framed reading glasses in the 1920s and where, years later, I got my first pair of eyeglasses. There was F. A. O. Schwartz, the toy shop. Roland and I would press our noses on their window, looking at the rows and rows of tin soldiers and stuffed animals. There was Bloomingdale's where we frequently would stop and accompany our mother as she would buy clothing. There was Woolworth's and its offerings of Big Little Books and toys that cost only five or ten cents. I was fascinated by a man outside Woolworth's with dysautonomia or some other cerebral defect who walked in a jerky fashion and spoke in a drooling manner, his head flopping like a rag doll. He sold sheet music. "Get your latest hits, only a nickel, buy it." His refrain repeated over and over as we walked down the street.

On Halloween, 59th street at the foot of the bridge came alive. There were bon fires. Many boys and girls would be in costume, and they often carried women's socks filled with powdered chalk and they would whack passersby on the back, leaving a cloud of dust and a white splotch on a jacket or dress. It was a joyous spectacle with parents discreetly on the stoops making sure their children did not get into trouble.

The Audubon Avenue apartment was in Washington Heights a few blocks North of the George Washington bridge. I remember the courtyard with its morning glories, climbing up white string, in the spring and summer. At school I enjoyed my classes and the school play where we dressed as Pilgrims. The fifth-grade text included pictures of the battles of

the Revolutionary War and one particular section that described Martin Kallikak and all the bad people he produced by not marrying wisely. It was my first introduction to eugenics. I was only 10 so it didn't make much sense to me, but I remember the cartoon drawings of the feeble-minded and the ugly children portrayed in his line of descent.

My family moved again in 1941 to 904 Amsterdam Avenue. We were on 104th street, not too far from the Cathedral of St. John the Divine. There was an old school across from our brownstone. It had classroom walls that slid along metal grooves and when four or more of the classes were consolidated, which was done once each week, the rooms became an auditorium. I was much loved by my teachers. One rewarded me at Christmas by giving me the class Christmas tree to take home. It was the first gift I gave to my parents. I was thrilled that my skills as a student brought material rewards to our home. The neighborhood was mixed, with lots of Irish, Italian, and Central European families. There weren't many Jews. One day I came home for lunch and had my key ready to go to our apartment one flight up. Two boys followed me in and knocked me down on the stairs. "Grab his cock," one shouted and I burst into sobs and fortunately a woman opened her door and the boys scurried off. They were Irish American boys and they thought I was a Jew and they wanted to see a circumcised penis.

My teacher's love for me led to grief in one class. The teacher asked me to help her move supplies in the store room. She stood on a ladder, and I passed her items dutifully. She asked for a wooden box of chalk and instantly I whipped it off the floor and smartly thrust it to her waiting arms. "Ooh!" went a tremulous voice, and a slight snapping sound hit my ears. I realized this frail bony lady had just had her arm broken by me. "I think you better return to your class," she said. The next day she appeared in class with her arm in a sling and I felt like a humiliated brute hoping that I would not be denounced in class.

We moved back to Brooklyn. This time to 213 Buffalo Avenue where I attended PS 220 (also known as the John Marshall Junior High School). We would take the train to the end of the Utica Avenue line and our apartment

was next to an elementary school. There was a garden in the back where the landlord grew mints and other salad herbs. The front of the apartment building faced a trolley track, and I would play with other boys, putting pennies on the tracks and waiting for the trolley to flatten and elongate the pennies. We also enjoyed playing games in the street. One of my favorite games involved wooden cheese boxes that had two or three notches cut into the rim. The box would be placed by the curb and the holes would be touching the asphalt. From the middle of the street we would roll marbles and some of the losing marbles would be put into the box. If you rolled a marble through the hole, you'd win the marbles in the box. Another favorite game was Skelley. I would collect soda pop caps and fill them with melted paraffin. These would then be shot by one's index finger from the ground on a chalked grid. The object was to land on the numbers in sequence and to knock off your opponent's caps.

At school I excelled in class and that finally got me into trouble. One teacher asked me to be a monitor and to report any kids talking. Foolishly I did. When I was in shop one student said to his neighbor, "Something stinks around here." I sniffed the air. "Is it the sal ammoniac," I naively asked? They turned their backs on me and I was shunned. A friend clued me in that I mustn't listen to the teachers and that it was wrong to inform on my fellow students. I was too dumb to even realize this. Until this moment I revered my teachers like gods. At the same time, I was astonished by the behavior of some of my fellow students. On one occasion, two of my chums were horsing around and one sat on the lap of the other and bounced on it. The student who provided the lap soon had an erection and was urging his friend to keep on bouncing. "Faster," he ordered, "faster!"

This nomadic existence from year to year had its benefits. I learned to be self-reliant and at each school I had to prove myself to both students and teachers that I was worthy of their respect. Each school had a different ethnic mixture of students and I appreciated the diversity I encountered. I learned that most of my teachers cared about their students and enjoyed teaching us. I also learned that my love of learning was a guarantee that I would win over my teachers and lead to friendships with the brighter students.



Self-portrait, pencil, about 1947.

CHAPTER 6

THE GREAT DEPRESSION

I did not know there was a Depression until 1938 or 1939. Few apple sellers on street corners were around and those most in need lived in the slums, under the elevated tracks along Third Avenue, or became street vendors. My classmates were also poor and teachers did not impose demands on us beyond what the school district required. All of us boys had to wear a white shirt and tie to school and most of us wore knickers until we were 12 or 13 years old and then we would wear pants. Girls wore mitty blouses that looked a bit like a sailor's shirt with a tied silk kerchief that went through the collar. We bought our own pencils and nibs for our pens but the ink was free and every day one of us would be given a large bottle of ink by the teacher and we'd fill the inkwells in the desks.

Few had refrigerators. If the neighbors did not have to shop each day for all their food as we did, they would have an icebox and the iceman came by with a large cake of ice held by tongs and this would be carried to the apartment. People waited for a vendor to come by to sharpen knives and scissors, repair pots and pans, or buy old clothes. As long as shoes fit they would be repaired with new soles or heels and many parents tried to keep these leather parts from wearing out by having metal cleats nailed to the areas most likely to be worn away. Socks were darned and a wooden object that looked like a small, deformed rolling pin would allow the sock to be stretched out and the hole sewn. When we couldn't afford to have our shoe soles repaired, we would stick cardboard in them to cover the holes.

At school, if we were lucky enough to have a few pennies we would buy a hot sweet potato or a knish from a vendor who set up a wagon nearby. In the summer we would buy Italian ices. These were produced with a metal

instrument held by the hand and the vendor would shave the block of ice and then pour, from a row of bottles, the type of syrup the child selected. On one occasion the vendor got too eager, and the metal scraper flew off the block of ice and landed in a puddle of horse piss. He wiped the scraper on his apron, smiled, and scraped away. We were too young to know there was such a thing as a germ theory.

The worst poverty we saw in the Bowery. Crowds of unhappy men lived under the elevated trains. There were flop houses, where they could sleep for a night if they got tired of sleeping on the streets. There were barber colleges where they could get their hair cut and a shave if they went looking for a job. They would sit in the door steps and in cold days some would huddle or sleep over the grates where warm air from the building basements would well up. Unemployed men were more visible in the winter. They sometimes set fires in the trash bins and warmed their hands.

At home we did not celebrate birthdays. We recognized they occurred but there were no parties and no gifts to unwrap. At most we could expect a comic book to buy that day or a trip to Woolworth's for a cheap toy. The only holiday that provided a gift was Christmas. Elevator operators received tips during the Christmas season and my father would come home and give us each a one-dollar bill. I would use the money to buy something I treasured such as a wind up pocket watch, a penknife, or a rubber Pinocchio doll.

We were proud we were not on relief. It was considered a disgrace and a sign of fallen status among the poor to be on relief. No one admitted to being on relief in school. No one in our neighborhoods went to college and none of the adults were college educated. I first learned that people went to college during World War II. Only a small portion of my high school went on to college. They couldn't afford it and the only free colleges were the city colleges and they admitted students from a city-wide competitive examination. There were only about a half dozen scholarships from NYU or Columbia for all the students who applied there. At school, we used texts until they fell apart. There were lots of patched pages. Cellophane tape did not exist and a thin rice paper dipped in a watery white paste covered the

tear and the letters could be read but had a slight grayish cast. The covers were often mended with a sturdy tape.

We adored President Roosevelt. We all called him FDR. His voice cheered us and encouraged us when he gave his fireside chats. We had mixed opinions about Mayor LaGuardia. He claimed to be one of the little people like us, but he was a Republican and not to be trusted. During his years as mayor he had a phobia about street musicians and made sure the police chased them off the streets. Their only safe haven was back alleys. I don't think my mother would have started playing her violin on the streets had his ban still been in effect.

I remember one summer day when we were walking down 59th street to our apartment. There was a Gristede's gourmet grocery a few doors past Woolworth's. Roland and I were looking at the window display of gorgeous fruits, especially large fuzzy Georgia peaches. A man in a white Palm Beach suit and Panama hat saw us and our mother. He felt sorry and thought he would do a good deed. He told us boys to come in and he wanted to buy two peaches. The proprietor said he only sold them by the dozen in the packed display boxes. Of course, he couldn't renege on his impulse, and he paid the dollar (a large sum then) and presented them to our mother and his face was flushed red with embarrassment and confusion. We thanked him and he briskly walked toward Third Avenue. I have often thought of that kind deed and wished whenever I was in the neighborhood to see him again and thank him. The peaches were as good as they looked; ripe, juicy, sweet, and worthy of presentation to the gods. His memory lingers on and I cannot walk in that neighborhood without the image recurring and generating a warm glow about the kindness some human beings have for others.

Another hang out for the poor was the Automat. These food stores that began in Philadelphia became popular in New York City and many dozens were scattered around the city. You would enter and approach what looked like a bank teller's window in a kiosk near the middle of the restaurant. If you put down a dollar bill two quarters and ten nickels would fly out of the teller's hands. The food was arranged by section in vertical rows of small

glass cages with brass knobs. If you put your nickels in and turned the knob, the door flew open, and you removed your beef pie or other choice meals. Frequently those who had next to nothing would spend hours in an Automat, nursing a cup of coffee and sometimes snitching the glass of ice intended for iced coffee or tea and filling it with free water and with sugar that was in a container on the table.

When we lived on Buffalo Avenue, there was one building about two blocks from where we lived where I and several of the neighborhood boys would visit. Three men in their 50s or 60s lived together in what used to be called a rooming house. Next to each bed was a pail of water in which the men would spit. They enjoyed having young boys around to talk about their lost youth. Sometimes, they'd send one of us to the candy store with a penny or two to buy loose cigarettes. The proprietor knew us and the men in the rooming house, and knew we were not giving him a line. One of the old men claimed he worked in the *Brooklyn Eagle* when he was a boy and that he would go swimming in the East River with Walt Whitman. I believed that story until my colleague Paul Dolan made a rough calculation based on Whitman's life and the probable age of the old coot and told me it wasn't possible. It was hard to give up a myth from my childhood.



Wash drawing and pen and ink by my brother Ben Weiss of unemployed men during the Depression in Central Park.

CHAPTER 7

EIGHT PAGE BIBLES

Until I was in the second or third grade, our father had a gate latched across the doorway to the living room which served as a library and had an easy chair. No doubt he put the gate across shortly after my brother and I, as toddlers, discovered his mint stamp collection and promptly licked them all and pasted them on the ice box. Long before the gate was removed, my brother and I learned how to unlatch it. It was a wonderful opportunity to take his books out one by one and look for pictures. Unfortunately, most of my father's books just had words. But the very act of exploring led to a wonderful discovery. Behind the books on one of the top shelves, that required our standing on a chair to reach it, were bundles of small booklets, not quite as large as postcards. They are sometimes called "eight-page bibles" and for those living in California, "Tijuana bibles". My brother and I, not knowing their history, quickly gave them a generic name—they were "fuck books".

In these tiny books were some of our favorite comic strip characters involved in naughty play: Orphan Annie obliging Daddy Warbucks, who gave her more than fatherly affection; Eugene the Jeep predicting Olive Oyl's infidelity with Mr. Geezle; Nancy and Sluggo getting very acquainted in Fritzi Ritz's bedroom; as well as puns on celebrities we didn't recognize such as Clara Blow or Greta Garbage. We also got to see Wally and the Duke and novel characters unique to this genre of pornography. There were several packets of these small booklets, each held firmly by rubber bands. My father began acquiring pornography in the merchant marine and he had no shortage of suppliers as an elevator operator when he came in contact with those who sold them.

This gave us an early sex education and from them we learned to associate dirty words and their functions. Once when my parents took us to the Bronx Zoo they sat down at a bench while Roland and I went looking at the animals fenced in around us. I came upon a sight that widened my eyes in wonder and delight and I ran as fast as I could to my parents's bench shouting at the top of my lungs, "Ma, Dad, come quick, look at the zebras fucking!"

Our parents discovered that we were reading these forbidden pleasures in various ways. If my mother wondered why we were so quiet in our room she might poke in while we were bug-eyed in our concentration, and we would be interrupted by a "Rolandska, Elofski, what are you doing?" There were other times she would hear a drift of conversation, "Now it's your turn to play the woman," and she would scream at us and send us scurrying under the bed out of harm's way. At that prepubescent age we would have erections reading the fuck books but didn't know what to do with our pleasurable discomfort.

We knew that what we were reading was forbidden and wrong which, of course, made it that more delightful. At the same time, I felt considerable guilt and shame and never mentioned to my friends in school that I read these. Years later, to my self-disgust, I came across one of these mementos of the past and saw that in pencil I had scrawled, "Ma, Roland is reading the fuck books." I was not only perverted, I was a snitch.

There was another occasion when we had our fun reading our father's secret cache and went to Central Park. While in the playground, swinging higher and higher, my brother shouted, "Spread your wings" and we were convulsed with giggles as the surrounding mothers beamed at the innocence of our imaginations as birds in flight while my brother and I were recalling Popeye, his yard long member in hand, asking Olive Oyl "Spread yer wings," as he took aim.

They were of course demeaning to women, inappropriate for children, moronic in plot, and illegal. They were usually well drawn, perhaps by cartoonists who needed to make a living in the Depression.

As a teenager I shifted my interest from these comic book adventures to another small bundle of treasure we had previously ignored. These were pamphlets about the size of paper back books and usually without illustrations. The soft cover had a lurid title and the last line on the cover read "Privately Printed in Paris." They made my heart race and I usually read these when my parents and brother were both out. By this time I was vigorously masturbating and on one cold winter afternoon, I must have done so three times. I looked at the offending document, which was corrupting my morals, and filled with guilt, I heaved the pamphlet on top of the coals in the kitchen stove. I watched it burst into flames as the pages curled into carbon sheets and then crumbled into flakes of gray ash disappearing among the orange glow of the coals. It didn't stop my masturbation, but it got rid of one of my favorite readings!

Years later, in the 1950s my father traded most of his 1930s vintage stock for some of the characters of the day, including one adventure of Plasticman sending his penis through a window slightly ajar across the street and into the bedroom of a girl of his desires. It was funny, but crudely drawn. The others were far worse in conception and artwork. We berated our poor father for his lack of taste.

When I was a graduate student at Indiana University, I got to know Alfred Kinsey in the Zoology Department. He was already internationally famous for the work he had done on human sexual behavior. He conducted tours of his sex institute. I went to one and hoped there would be assorted goodies for me to read, but alas, no. Kinsey talked about his scientific findings and the justification of his institute. He pointed out that his institute had the second largest collection of pornography in the world, the largest being in the Vatican. He said the Church likes to keep an eye on the Devil's work. The rest of his time he showed us his collection of sexual clay utensils and objects that he had obtained in Peru.

In 1987, while I was at IU as a Fellow of the Institute for Advanced Study, I was working on a sexual theme I picked up in the development of the eugenics movement. Masturbation was the reason used to justify the first compulsory sterilization of allegedly "unfit" males. I wrote a letter to

the director of the Kinsey Institute and got permission to read the history of degeneracy theory, frequently associated with onanism or masturbation. While walking through the corridor to the library reference volumes, I saw, like collections of arrowheads displayed in concentric circles on a Midwest farmer's walls, displays of eight page bibles, 1930s vintage, and I felt very much at home.



Roland and I called them "eight-page bibles" (or Fuck Books) but they were also called Tijuana bibles and were sold mostly in the 1920s and 1930s.



My mother, Ida Vogel Weiss Carlson (center) with her daughter Sadie Weiss Hobbs (left) and granddaughter, Maxine Hobbs, in San Diego, about 1950.

CHAPTER 8

SADIE AND BENNY

Although Sadie (later Sally) and Benny (later Ben) were my half-sister and half-brother, I know only sketchy information about their lives as they were growing up. Until they were about eight to ten years old they lived with my mother, Ida, and their father, Max Weiss. After their parents separated about 1924, they were placed in the orphanage for Jewish children in Manhattan. Both Benny and Sadie found it satisfactory but somewhat regimented. In those days children were considered old enough to work when they reached 16 or finished high school. Benny and Sadie completed their high school education but did not go to college. Sadie met a sailor, Delbert Hobbs and married him and was soon on her way to California. Benny also went to California for a year or two and he was fired when he participated in a failed attempt to unionize his fellow workers.

Benny returned and stayed mostly in New York City, worked as a sign painter for the railroads, and took art courses at the Art Student League with George Grosz. I knew Benny better than Sadie because I had seen my sister only a few times, once as a baby in the crib and she described me jumping up and down calling attention to myself. I have no recollection of that event. I do remember her and her husband Del visiting once with their children about 1938 or 1939. Del had been stationed temporarily in Norfolk, Virginia and he was now a Chief Petty Officer. I met their three children, Maxine, Benny-Del, and Joel while we lived on Audubon Avenue in Manhattan. There may have been an earlier visit when we lived in Brooklyn on East Second Street. The visits were brief and we hardly had time to play with our two nephews and niece. It did seem strange to be uncles to children almost our own age. When the war broke out, Del was

sent to the Pacific and we did not see them again throughout the war. Sadie raised the children mostly in San Diego, California but towards the end of the war she moved north to Long Beach, California.



Portrait of a woman in a cloche hat by my brother Ben Weiss; probably drawn at the Art Students League where he studied with George Grosz. The expressionist style is Grosz's.

Sadie and my mother wrote regularly to each other and I enjoyed her letters and the occasional photographs of her children. Del retired from the navy and was a compulsive gambler. He occasionally would have a good streak of luck at Las Vegas and this would generate more enthusiasm for gambling. In the long run it was ruinous and Sadie divorced him and started to call herself Sally. The absence of their father made it more difficult for the three children when they grew up and they found difficulties coping with school. Maxine ended up having five children with three different

fathers. For a while she lived on welfare then began to take courses towards a nursing degree and found immense satisfaction having a degree and an income of her own to support her family. One of her husbands was in trouble with the law and served time in prison. Another committed suicide after a history of depression.

Benny-Del (as Roland and I called him in our youth) or Ben as he called himself worked mostly as a factory worker for the air defense industry. His second wife was Irish and I got to meet her when I taught at UCLA. She had an inherited disorder of connective tissue that led to dislocated lenses (it was not Marfan syndrome) and several years later, while her children were still in elementary school, she developed a brain tumor and died. Ben raised his two girls himself and suffered in silence. He was a private person and I respected his privacy. Joel had two girls with his first wife and he became a sign painter and was quite gifted as an artist. His wife left him and he raised his girls while maintaining himself through his sign painting business.

Sally remarried a wonderful man, Andy Spring, who was adept at fixing things. They lived in Long Beach and when I was at UCLA we visited them frequently. Andy built a back yard garden with grapes, strawberries, and avocados (from a tree they started with a pit) available on a steady basis. Sally taught herself to play piano by ear and enjoyed that musical talent she got from our mother. Andy had a history of alcoholism and at one time lost his driver's license but most of the time he was sober. He was a smoker and died of lung cancer.

Benny married Blanche Zablodowski and had two daughters, Penelope and Margret. We visited them two or three times a year when we were growing up. Benny continued working for the railroads painting signs until the 1940s when he taught himself to be an engraver. He learned how to cut signet rings, presentation plates, award cups, and other silver and gold jewelry and gifts. He had the ability to look at a family crest, reverse it in his mind, dig out the gold or silver, and press the ring into sealing wax to make an image that matched the picture he used as a reference. I watched him work with his engraver's tools. He would fix the object in a vise, rub it

with modeling clay to give it a greasy film, dust talc on it with a brush to whiten it, trace the design he wanted, and then with his sharp engraver's tools dig out the design, rotating the object in his vise, and finally buff away the spurs and traces of powder and grease.

During the 1930s Benny and Blanche joined the Communist Party. They liked its ideals. It opposed racism; it advocated equality and a voice for all; it sought to eliminate the control bosses had over their workers; it opposed militarism and it believed wars were caused by profit-hungry munitions makers. This was the credo preached by the party leadership to its enthusiastic followers. During the 1930s Benny and Blanche could not conceive that this was being distorted in practice in the Soviet Union or that the American Communist Party was under ideological control from its Soviet counterpart. Benny was aware that every Party meeting had FBI agents enrolled and keeping tabs on its members. Benny used a pseudonym for the posters that he would draw for Party rallies and fund-raising activities but I'm sure his involvement was well known to the FBI. By 1948 those ideals were being questioned and Benny knew of my interest in genetics and was quite upset over the Lysenko controversy. He was too much an enthusiast for science and a regular reader of *Scientific American* to believe there was merit to the attacks on genetics launched by Lysenko and his Party-backed Michurinism. Benny and Blanche abandoned the Party and felt betrayed.

Benny was an optimistic person with a ready smile, wavy hair and thick eyeglasses, who enjoyed his family and his work. He smoked his own rolled up cigarettes as he pored over his engraving. He was a superb artist with a range of styles from realism to non-objective art. We greatly admired him on our visits and, as a child, I much appreciated the books he gave to me on evolution which I delighted to read.

I loved to go on walks with Benny to the United Nations. He said he did this every Sunday morning and it was like going to a religious service. We would sit in its chapel or along its spacious hallways and exhibit rooms. In those days it was open to the public and easily accessible. Those were days when there was little fear of terrorism and there were no guardhouses,

check points, metal detectors and other means to ferret out those who in their ideological madness would destroy symbols they hated. There, in the peace of this monumental architecture, he saw the idealism of his failed Communism revived. It was an organization dedicated to peace, to human understanding, to equality and justice. He believed in the worth of all human life and wanted so much to see a world where all could call each other brother and sister, one species, who respected each other.

Ben developed lung cancer in 1972 and rapidly went into a decline. In those days physicians did not tell patients they had cancer. His doctor told my brother and me that under no circumstances were we to tell him the truth. He was deceived but after several months, when his health did not improve, and his body was slowly melting away he recognized he was dying and that it was only a matter of months. Roland and I last visited him at Mount Sinai Medical Center in Manhattan. He was in a coma and did not open his eyes to see us or give any recognition that he heard us. He was hooked up to intravenous feeding bottles and his vital signs were being monitored by machine. He was alone in a dim room in the far recesses of the hospital. We hovered over his bed, wishing we had been given the permission to grieve with him and talk about his illness and the goodness of his personality.



My brother Ben and sister Sadie Weiss about 1930 in California.

My sister Sadie lived to her 70s. She was diabetic her last fifteen years of her life and had survived colorectal cancer with good spirits and without a colostomy. She lived in an apartment that looked out into the harbor where the *Queen Mary* was docked as a tourist hotel. She was terrified of dying and called me in a panic asking me to help her. I wish I could have. She had reached a stage of her disease where she was not responding to insulin. A few days after her call, she was dead.

CHAPTER 9

ROACHES AND BEDBUGS

Virtually all New Yorkers encounter roaches, if not in their homes or workplaces, at least in an occasional restaurant or place where they shop. When I was a child riding the subways I looked at Dr. Seuss's ads for "Quick Henry, the Flit;" and Flit it was that my father used in his never ending war on roaches. Our apartments teemed with roaches. Partly this was because my mother and I were slob. She cleaned in a vague sort of way but her paranoia gave her strange ideas. She thought soap was toxic so she rinsed the plates after scrubbing them with salt. Perhaps she was koshering the plates the way she did all our meats, including the pork chops. Contradictions mean nothing when habits are preserved. I piled my stuff every place and was a messy kid who belonged to the tradition of little boys who never took baths. My father would tease me by setting lyrics to the Santini Brothers commercial on the radio. Instead of their ad promoting their skills as movers:

Melrose 5-5300

Melrose 5-5300

Home of the five Santini Brothers

bum-de-dum-tum, bum-bum-bum

my father would sing

Melrose 5-5300

Melrose 5-5300

Home of the five little sloppy Elofs

bum-de-dum-tum, bum-bum-bum

I had no shame over my slovenly habits. Leaving messy piles of clothes and papers and abandoned art projects was my way of dealing with life. My mother didn't help. She didn't toilet train me until I was about six or seven years old. Until that time she'd just spread a newspaper on the floor and I'd squat and do my duty. She'd pick up the mess in due time and toss it in the toilet while I'd be happily ignoring my contribution to entropy. The roaches loved this arrangement. The food spills on the floors, the unwashed tables, and the unswept floors contributed to the happy population explosion of roaches. Fortunately we saved no food and every day we ate up what our mother bought and cooked. There were latkes [potato pancakes], saturated in the butter in which they were fried. There were calf's cheeks, a particular favorite cheap cut of the depression, boiled until they were tender when they virtually fell apart in my mouth. There were potatoes and meatballs, often cooked by my father. He favored a regular helping of boiled potatoes and sour cream but neither Roland nor I would touch such a horror, so our mother frequently had to cook separate meals for us and for our father. Our favorite was boiled chicken. In those days the chickens were bought from a live market, and I loved watching the chicken get its throat slit, its feathers scalded and plucked, and the disemboweling process that sent a wave of fecal stench across my nostrils. As bonuses we would get the undeveloped eggs (if my mother chose a hen) and the declawed feet. When boiled, chicken feet turn gelatinous and my brother and I would suck these like lollipops. We would eat at the table or standing up, or walking around, and I would leave a debris of crumbs, shreds of meat, and gnarled cartilage in my wake as I happily munched, played, and read. Roland, the fastidious one, made sure that even if I paid him to read his comic books, I would have to wash my hands and pass his inspection.

The roaches, engorged on these delights, would scurry like wind-blown clouds when the light was turned on in the morning. My father, in disgust, would reach the limits of his tolerance and a weekend war against the roaches would begin. There were first the Flit guns, those tubes of metal bearing a tank of Flit much like an enlarged beer can. The plunger would go down the shaft and the spray of Flit would stream out. My brother and I loved taking turns killing the enemy roaches and watching them go into

staggers as they wildly fled the lethal gas and mist that curled their carapaces, knocked them tumbling to the floor, and sent them into a shivering death. That was the fun part. The horror to behold was yet to come. My father would fill the bath tub with boiling water, and he would remove the leaves of the kitchen table and plunge these into the scalding sea. Hundreds of roaches would then float to the top instantly cooked. The leaf-less table would then be showered with Flit, and dying roaches dropped in droves to the floor as my brother and I would clomp them into floor-kill with our shoes.

It was no use. The roaches always came back. They hid in the spines of books and many a time I would be reading, and one would poke out and scurry across the page. They left black specks of defecation on the papers, paintings, books and magazines. When we opened an umbrella, it was never directly over our head because roaches were likely to rain into our hair. When we were in our apartment at Sheffield Avenue, my brother and I devised novel ways in our battles against roaches. I would catch a roach in my fist, toss it on the hot iron plate of the coal stove and watch the roach explode from the steam created in it as it sizzled and spun around in circles. If the roach was a female and had a sack of embryos protruding from her rear end, she would launch her dead embryos like a cannon ball. When we studied our roaches, we noted that they fornicated back-to-back. Occasionally I would discover a mutant albino roach.

There was a lull of about six months in 1946, when the roaches suddenly disappeared en masse. A red mite had discovered them and sucked the fluids out of the embryo cases and there was a curious emptiness in our apartment. The few roaches I saw had a dozen or so of these red mites clustered usually around their rear end. I was almost relieved after the respite when I saw a clean roach emerge to remind me that life goes on and the ways of the world are not so ephemeral.

Bed bugs were a menace for us until 1945. They would find their way into a crevice of my ear and I would feel a burning warm sensation and with disgust would dig out the half pulverized bloody carcass of a bedbug. Our pillows and sheets would be stained with blood spots when the unfortunate

bed bugs, bloated with our blood, would be pressed into oblivion. Our father would get rid of them by scrubbing the springs of the bed with kerosene and we would use good old Flit to spray the seam lines of the mattress. Bed bugs were more repulsive than roaches because they had an acrid smell, dead or alive. We never saw another bedbug after DDT became available. It was the most dramatic demonstration of the triumph of science I had witnessed growing up and was far more impressive to me than the atomic bomb, whatever that was, in Japan.

Roaches would embarrass me in school when I opened my notebook and one would run across the desk or when a roach crawled on my clothing, having hitched a ride to school. Sometimes I'd wiggle with the vigor of St. Vitus's dance as a roach crawled up my arm or leg and I'd try to shake it loose from my clothing. When I left New York, I left those roaches. There were none to be seen in my graduate dormitory or in the apartments I lived in when I was in Bloomington. I saw no roaches in Kingston, Ontario nor when we lived in Los Angeles. Partly this was middle class cleanliness. By then I had left the slums and was happily middle class in my habits. I learned to take a shower every day as a graduate student and joined the well-scrubbed "cleanliness is next to godliness" class of Americans that our teachers held up to us as exemplars in our youth. Growing up in New York, we never had a bathroom with a shower and taking a bath was usually a weekend activity and often it was done while standing up in front of the kitchen sink on newspapers and sponging ourselves with a towel. My brother, my father, and I often saw ourselves naked this way, but I have no idea what my mother did to clean herself and I can only imagine she did so when we were asleep or at school.

Years later, when I went to China, whether in Hong Kong, Beijing, Shanghai, or Kunming, I saw the familiar roaches of my youth. It was both a sight of revulsion and a transporting back in time. The first of these exposures was when I arrived in Hong Kong en route to Bangkok for a conference in Ho Chi Minh City. The plane arrived late after an unexpected refueling in Guam. All the local hotels were booked, and it would be another six hours before my connecting flight. I shifted from one waiting area to another until they were all closed, and a kindly policeman allowed

me to sit in a restaurant patio. I had no sooner put down my bags when roaches began to crawl to explore my belongings and I dared not sleep lest the roaches crawl into them and my clothes. The war on the roaches began again.

At Stony Brook I was reacquainted with roaches. There were two kinds. There were the familiar ones of my childhood and now they could feast on the delicacies a fruit fly laboratory provides – lots of molasses, corn meal, dirty vials and bottles, spilled food from preparing media for the flies to eat, and the nice warm water that carried these superb nutrients to the roaches. Stomp, stomp. Stomp. Every day for thirty years I have stomped on roaches along the floors of our laboratories. They are part of fruit fly laboratory life. I am amazed that, only once in those thirty years, did I bring roaches home and, good middle class slave to technology that I am, we immediately called an exterminator to get rid of them. Professional roach killers are expensive but effective.

The other roach was an import from Mexico or Central America. It was used for neurological research by a colleague who left the year I came. He had not received tenure, and in revenge, so the legend goes, he released these two inch roaches and they quickly multiplied. In the morning when I would flick on the lights these lumbering large roaches looked formidable and for the squeamish (I among them) they sent goose bump waves of terror as they dared me to stomp. One missed stomp and up my pants leg they'd go. Like a coward, I would shrink from my duty to stomp out roaches and allowed the monsters to escape. These roaches followed our move from the old biology building, now part of the Student Activity Center, and happily colonized the Life Sciences Building. I have no doubt they will flourish in the Institute for Molecular Medicine that was under construction and soon to be connected to the Life Sciences Building. I wondered, too, if they would emerge one day in the Student Activity Center to the great fright of the food service whose restaurant now occupies the spot where these roaches were first released.



It was not unusual to see roaches clustered like this when the lights were turned on or when my father took the leaves of the table apart.

CHAPTER 10

MY FATHER'S PASSION TO LEARN

I have often wondered why my father did not continue his college education in Germany or return to Sweden to attend college there while he was still young. He loved reading and his scholarly habits certainly influenced Roland and me. When we got past the limitations of early elementary school and could begin reading his books, we learned how much his passion for knowledge possessed him. He was particularly fond of Emile Zola and began collecting the entire Rougon-Macquart series of novels translated into English although he had some in Swedish. Zola appealed to him because he dealt with the common man and his naturalism described a world my father knew. It was the world of greed, militarism, a thirst for power, middle class pretension, and the indifference of the rich and the middle class for the poor. Zola explored the depravity of alcoholism, consumerism, and the lust for money. He revealed the corruption of local governments, the influence of vested interests in democracies on legislation, and the filthy conditions of the meat markets in Paris. To my father this was what life was all about. Zola also was one of the first to use raw sex in his novels and scandalized his readers, often finding himself at odds with censors. My father wanted the freedom to read the human condition in all its perverse and ennobling ways. That is why he liked pornography. It was funny, earthy, and filleted the soul of humanity.

He also liked D. H. Lawrence's novels and collected those. Sex and Freud were the hallmarks of Lawrence's writings, and my father shared his belief that sexual energy drove civilization. He also collected all of Theodore Dreiser, a more pessimistic observer of the human condition who did not hesitate to reveal the shallow values and weak wills that humans all

too often presented. He admired the wit of Sinclair Lewis's novels and the satire of middle-class culture they portrayed.

Both my father and brother were pessimists. My mother and I were optimists. Roland took an even more gloomy view of the world than our father. He was like Eeyore in *Winnie the Pooh*. I think this was reflected in our favorite baseball teams. The New York Giants had seen better days and went into eclipse in the 1930s and 1940s. "Are the Giants still in the league?" Leo Durocher asked. The Brooklyn Dodgers were "Dem Bums" and seemingly could never win the pennant or the World Series. I was the lucky Yankee fan. They were a juggernaut of success. "Joe, Joe DiMaggio; we want you on our side," the popular song proclaimed. I saw the world in the eyes of a Condorcet – unlimited progress. The more we learned, the more we could understand and change the world. My success in school reinforced my faith in the power of knowledge.

But my father did not see knowledge that way. He read to appreciate the ache in his soul. He had squandered his youth and was now trapped with children to raise and a wife who was psychotic. He had no future. Literature became his touchstone for appreciating who he was. His choice of authors favored those who brooded about humanity. He liked Balzac, Rabelais, Dostoevsky, and Tolstoy.

We would go with him to Macy's to buy books. He liked the Modern Library editions. They were cheap and they were scholarly. We would go to Stamm's sometimes with our father and sometimes with our mother. Stamm had a bookstore near City Hall. He did not find a parent bringing in children too often. He would give us free books in addition to the ones we or our parent bought. We became familiar with Book Row, that marvelous collection of used book stores that ran along Fourth Avenue from Cooper Union to 14th Street.

Sometime in the early 1930s my father bought a set of prints of museum masterpieces. Color prints were not that good in those days but these struck me as beautiful. I would look, week after week, year after year, at those gorgeous paintings of Medieval, early Renaissance, and modern masters, Rembrandt, Da Vinci, Raphael, Watteau, Ingres, Velasquez, El Greco,

Gainsborough, Van Gogh, Gauguin, Cezanne, Monet, Manet, Degas, Grant Wood, Stuart Davis, and Thomas Hart Benton. They were as familiar to me as my baseball cards or comic book heroes. This bundle of art reprints, on semi-stiff paper, about 100 of them, gave the title, painter, and museum where the painting was located. I have no idea where my father bought these. They were part of the treasure of knowledge that was mine to find as I grew up; one pocket of learning after another turned out to be among my father's passion.

About 1942 my father joined the Book of the Month Club. He rarely rejected a book, and we soon found his book shelves filling up with war year novels, political biographies, and accounts of battles. I read *The Raft*, *Guadalcanal Diary*, and *Thirty Seconds over Tokyo*. They supplemented his already ample collection of books from Manhattan bookshops. I read Henshaw Ward's biography of Darwin, Owen Clendening's *The Human Body*, and Karl Menninger's *The Human Mind*. I must have been about 11 when I read Menninger because we were still living in Manhattan. I was riveted by his case histories of disturbed personalities and as soon as I read about paranoia, I diagnosed my mother. Until that time I had accepted her view of the universe, strange as it was. In a curiously logical way she had constructed a world of persecution by those out to railroad her back to the insane asylum because she knew too much about their plotting and attempts to cover up their errors. Suddenly I had a label. Paranoid schizophrenia. The beast within her had a name. My universe was not crazy; my mother was.

My father dropped the Book of the Month Club a few years after the war ended and joined a new club, The Book Find Club. Those were marvelous books which brought to the reader less well know authors but more powerful fiction, like George Bernanos's *Diary of a Country Priest*, Roger Martin du Gard's *Jean Barois*, or Machado de Assis's *Epitaph of a Small Winner*.

My father's other passion was music. He couldn't hum a tune and I inherited or adopted his inability to sing. But like him, I loved to listen to classical music and opera. He would play WQXR, the *New York Times* station, and listen to classical music when he wasn't listening to the news.

Shortly before the war began, we went to a Davega store in lower Manhattan and bought a phonograph. We got 78 rpm records and played them using cactus needles which were good for about five plays, and which came in packets similar to those used for Burpee seeds. The popular melodies of that era, arias from operas, Fritz Kreisler's gorgeous renditions of Londonderry Air and Gypsy melodies, and Swedish folk music for hambos and schottisches, were among our favorites.



The portable phonographs of that era (1940s) often came in suitcase-like boxes.

After I went to college, my father would clip articles from newspapers and mail them to me. They included obituaries, book reviews, political and scientific news. Whenever he read a book he liked, he sent the blurb from the Book Find Club or from the *New York Times*. His letters were filled with musings, unlike my brother's whose written content I knew before I opened the letters. But Roland did draw little sketches and cheerful cartoons to celebrate the holidays or birthdays of those we knew.

I never realized, at the time, how much I owed to my father's passion for culture. He never spent money that was meant for food or rent, but instead of clothing, furniture and adornments, he plowed whatever he was able to save into books and culture. Engraved in my memory is him in bed, the radio on, and a book in his hands. In the often unjust and tormented world in which he lived; it was his treasured space to merge his mind with the universe.

CHAPTER 11

410 SHEFFIELD AVENUE

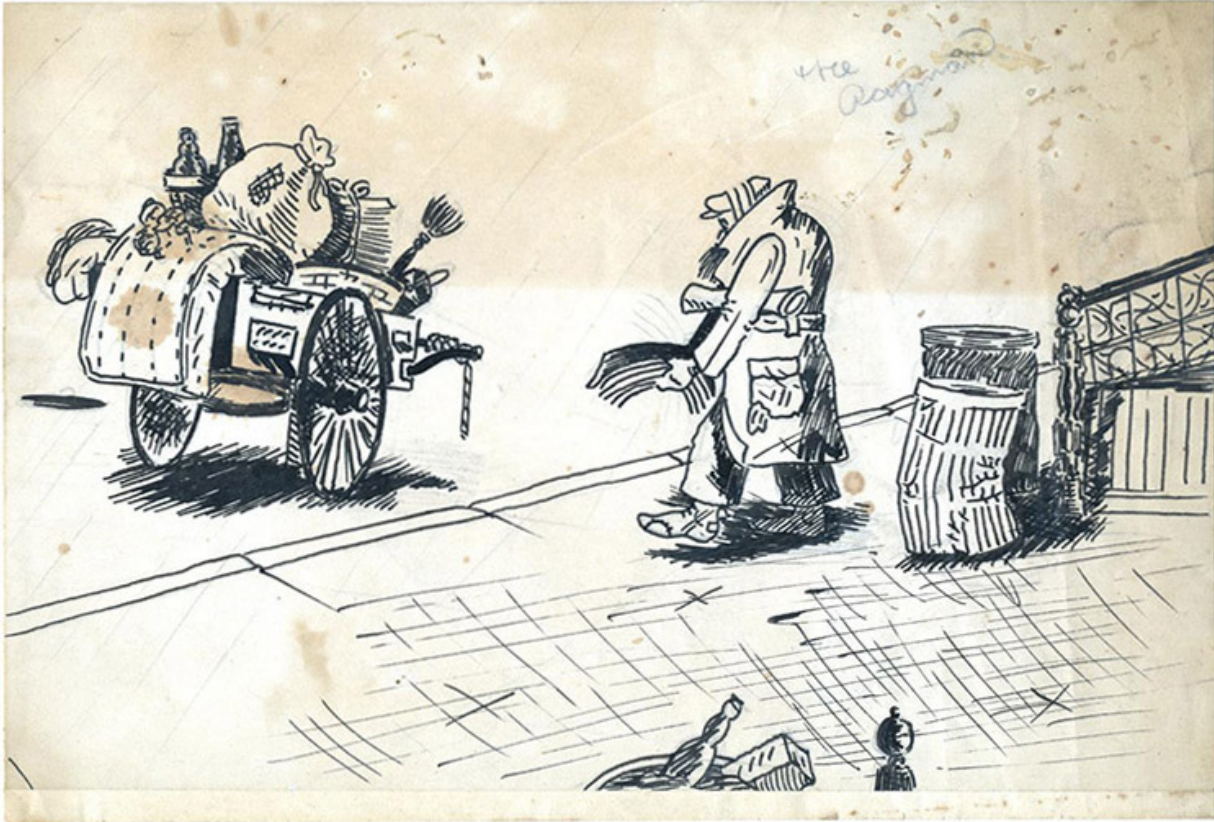
We arrived at 410 Sheffield Avenue in Brooklyn in the summer of 1944. The neighborhood in which it is located is called East New York and its neighboring areas are Bushwick to the north, Ridgwood (part of the Borough of Queens) to the east, Brownsville to the west, and Jamaica Bay to the south. It was then known for its poverty, its infamy as the birthplace of a criminal element known as Murder Incorporated, and its high density of Jews. The building we lived in was a brownstone house, about four stories, with a stoop and a back yard that was narrow and relatively shaded. We occupied the ground floor front.

The apartment was small. There was a front bedroom where Roland and I had our bed and our father's books, most of which remained in their boxes for the fifteen or so years we lived there. There was a small kitchen and a very small bedroom large enough for our parents' bed and a small wooden stand on which my father kept the radio. The kitchen had a coal stove next to the door of our parents' bedroom and a gas range next to the bathroom. The bathroom had a bathtub, a toilet bowl, and virtually no room to do much except stand and dry oneself. There was no living room. The kitchen became our living room in the winter because it was warm with the coal stove going. There was no central heat. The sink in the kitchen was held at right angles to the wall and stood on one leg. We had a makeshift clothesline we hung up between the sink and entry door to the apartment and that was used to dry our underwear and towels. Our laundry was otherwise done in a Chinese laundry.

We were in the middle of the block. To our North was Blake Avenue and at the corner of Blake and Sheffield was a candy store. It was my job during

the winter to go there and buy a bag of charcoal and a 25 pound bag of coal and lug these back in my arms to the apartment. After our bathtub became clogged from dead roaches and other debris, we stopped bathing in the bathtub and filled it with coal. It became our coal bin. There was a kitchen table but as the chairs broke from use, we used milk bottle crates for chairs. We had no china but each of us had a plate, a bowl, a cup, standard silverware (knife, fork, and spoon), and a glass for water. There was no icebox. We ate our food every day from what we bought on Blake Avenue.

To the South of our apartment was Livonia Avenue and to the east was Pennsylvania Avenue. We were across the street from Thomas Jefferson High School whose entrance was on Pennsylvania Avenue. Blake Avenue was a shopper's avenue. For a mile or more in either direction Blake Avenue filled up with pushcarts. The stores sold everything, but the pushcarts primarily sold fruit, vegetables, and small items such as socks, caps, gloves, and underwear. There were no supermarkets. There were dairy stores, green grocers, butcher shops, delicatessens, and many other Mom and Pop shops. I loved walking along Blake Avenue. One store had barrels of freshly souring pickles in brine. The odor filled the area around that block. A bakery would send wafts of warm delicious aromas of baking bread and cakes. This was particularly noticeable just before school started and I associated it with "back to school weather," the first snap of cold weather after a hot summer when odors neutralized each other.



Pen and ink drawing by my brother Roland, about 1943 of a rag picker by the stoop of our tenement at 410 Sheffield Avenue.

I learned to make the coal stove if I was first one up on the weekend. First came crunched newspaper then charcoal briquettes, and then the coal on top. I'd toss additional paper under the metal grill if the charcoal didn't begin to show a rime of gray ash at the edges. When the coals were at full glow, I would make a toasted cheese sandwich by using the small coal shovel and holding the slice of bread under the grate until it turned a golden brown. I'd repeat the process with a second piece of bread, put some American cheese on one of the toasted sides, got the cheese melted and bubbly, and then insert the untoasted sides to the glowing coals. Sometimes ashes rained on the cheese or toast. It didn't matter. I figured it would become part of my bones or disappear.

We used the gas range for frying and boiling. My mother had a fear of ovens exploding so she baked nothing. In the winter the gas range was used only as a supplemental source of cooking. I also used the gas range to heat

water on a wet towel to scrub my face and hands before going to school. Stand up baths by the sink were only done on weekends.



Water color, by my brother Roland, of the kitchen sink at 410 Sheffield Avenue, Brooklyn, 1945.

My father kept his personal papers and Swedish passport in a bundle in the single thin drawer of his radio stand. On my mother's side of the bed was a gruesome sight. She spat a lot and the wall was corroded with streaks of paint flakes, dried saliva, and hardened snot. I shuddered when I first figured out what the components were and gave it a distance. In the winter, I would use the window of their bedroom, which looked out into the

courtyard, for setting Jell-O or My-T-Fine chocolate pudding. My father kept the milk or cream there for his coffee. My father cooked the coffee in a sauce pan, tossing in a pinch of salt among the coffee grains to give it a flavor he liked. When the sump settled, the coffee was ready to decant and drink. In those days we used cream and lots of sugar. Coffee was a liquid dessert.

We had neighbors behind us, the Skolnicks. Above us were the landlord and his family, the Karabans. The other neighbors we referred to as “The Old Maid,” and “The Old Lady.” The Karabans were Catholic Poles. They worked hard to make their investment profitable. We liked the Karabans, especially their two sons, Joe and Walter, who were about ten years older than us. Once Mrs. Karaban brought down a plate of Polish ham. It was a heavenly treat—so tender, perfectly salted and seasoned.

When I was in Junior High School, I played sock ball with Roland when our parents were out. We’d roll up a pair of socks into a ball and try hitting it with a stick or with our fist when it was pitched underhand. Sometimes we banged around so much that Joe Karaban would come down and ask us to cool it a bit. In the winter we’d all be in the kitchen or seated at the edge of our parent’s bed. It was the only warm place in the apartment. My father might be arguing with my mother, Roland might be listening to the radio, and I’d be doing my homework. I learned from these conditions how to shut out the universe. I’d be focused on my work and the background conversation and noise ceased to exist in my head. It was a skill that was both immensely valuable for scholarly work and devastating for social relations. I can write in a subway, a crowded office, in a cafeteria, and happily ignore my surroundings. I also learned to think while on “automatic pilot.” I’d be walking and rehearsing a speech, outlining a lecture, planning a chapter and as I’d mull in this way people would say “Hi” and I’d walk right past them as if they didn’t exist. Often my students would try out my concentration. One student in my lab told me she and a friend played records of two different musical pieces, one to my left and one to my right, and I never so much as wavered in my concentration while working on my lecture or my data.

On weekends, my father, Roland and I would walk down Pennsylvania Avenue to Jamaica Bay. In those days, the Belt Parkway and high-rise apartments did not exist. Instead that area was a garbage dump by the Bay and a farm adjoining it. There were cows actually grazing and I would watch them being milked and I'd carefully navigate the cow flop that abounded in the fields. The fields were also famous for their wild crop of marijuana, in those days they were not so much of a hysterical threat to the middle class.

I once nearly burned out our apartment. I was playing with a roach in a match box and decided to give it a taste of flame. The box ignited, I dropped it and the left curtain caught fire. My mother was already running out of the house screaming while I was smashing the flames with my hands and remarkably put out the fire without burning myself. The flames had reached to the curtain rods. I am amazed the entire room did not burst into flames.

My mother fought with the Skolnicks. She considered them in cahoots with Hebrew charity organizations and that they were going to send her back to the asylum. Once she stormed their door and ripped off the doorknob. Fortunately the arrival of the police settled the fight, and we avoided the Skolnicks and they avoided us. Mrs. Skolnick was an immensely obese woman and she died shortly after the war. I remember the difficulty the ambulance crew had carrying her out on a stretcher.

My mother spoke in Yiddish to The Old Maid and to The Old Lady. The Old Lady was actually the grandmother of a girl I greatly admired, Frieda Denenmark, who was as sharp as I in school. In those days naming people by nickname was common. People would refer to "Yetta with the Schnitt" (the woman named Yetta who had a prominent scar). No doubt my mother was known as "The Crazy Woman."

After I went to Indiana University, I would visit Sheffield Avenue in the summer for a few days, especially after marrying my first wife Helen. My visits became even rarer after I went to Canada to teach. By 1960 the neighborhood had changed. The pushcarts were gone. The Mom-and-Pop stores owned by Jews were now "bodegas." A corner synagogue two blocks

from us was now an Abyssinian Baptist church. Instead of old Jewish women sitting on stoops there were old black and Hispanic women. Soon the Karabans sold their building, and it was torn down to make way for housing projects surrounding the high school. Roland, the last occupant, had to move and he found a place even smaller in East New York in a terrible neighborhood. It was after he was robbed at knife point that I asked him to join us in California.



Roland's pen and ink drawing of our Sheffield Avenue coal stove.

CHAPTER 12

CENTRAL PARK

A tremendous advantage of our having a paranoid mother was her obsession to shield us from harm. She knew Roland was vulnerable with his cardiac condition to excessive physical activity. This meant she did not let him or me out of sight. She had several objectives, all of them rational in her universe and very beneficial for us. She wanted to make sure we did not get in trouble by playing with neighborhood children. It is one thing for a mother to monitor a sickly child, it is virtually impossible to make neighboring children show the same care. She also wanted to divert us from those games that children play such as stickball, tag, hide and go seek, and other activities that would lead to horseplay and the rough and tumble sports young boys enjoy. She realized that hanging around the house and just telling us not to play with our friends in the block or from school would not work. So she took us out all summer.

We went to Central Park the most because at that time of our life we lived mostly in Manhattan. When we were in the Bronx, we went to the Bronx Zoo or Van Cortland Park or Crotona Park. When we lived in Brooklyn, we saw a lot of Prospect Park. When it rained, we painted indoors, read our comic books, or went to the movies. There were lots of things to do in the parks. I recall the pleasure of digging in the soil with a pail and shovel in Crotona Park and finding a porcelain doll's head and an 1809 half penny under the root of a large tree. They were probably buried there for more than a century and I wondered about the child who had lost the coin. I carried the half penny in my pocket for about five years and dropped it pulling a wallet out of my pocket when I was about 12 years old. The coin rolled under a bookcase in a used bookstore on Chambers Street.

The proprietor said there was no way he'd remove seven shelves of books and pull out a bookcase for a half-penny.

We explored virtually every part of Central Park. We loved the zoo it had with its sea lions that basked on their stone ledges and grunted to our delight. The keeper would throw fish at them and they would leap into the air and catch the fish on the fly. At one time they added a display of objects removed from the stomachs of dead sea lions as a way of warning the public not to throw coins, shards of glass, plastic containers, and other indigestible items into the water. Large bird cages surrounded the sea lions' pool. They housed gorgeous tropical birds with brilliantly colored feathers and elongated ornate tails. We avoided the children's petting zoo because we thought it was fake and not wild. A lamb or rabbit or piglet was not a zoo animal, but hyenas, jackals, apes, lions, camels, and elephants were.

One of our most favored spots was the sail boat pond a short distance north of the zoo. Children came to sail their boats. Poor children brought their Woolworth models and rich children came with their uniformed butlers carrying a long pole to push their boats out and let it catch the wind. These were magnificent models that we stared at with wonder and admiration. They would cut a wake and our tiny sail boats would bob up and down as these gorgeous schooners sliced through the water. We also delighted in the schools of minnows that abounded in the pond.

We would sometimes take off our shoes and socks to cool our feet on very hot days and this lasted until a policeman would come by and order us to put our shoes and socks back on. Not all the police were that kind. Once my father took Roland and me for a walk in the park and it was a hot humid day and we took off our shirts. A policeman stopped us and gave my father a ticket for indecent exposure because we were minors and could not be given a ticket. "If you want to take your children's shirts off, go to the beach; this is a park," he told my father, who was humiliated that he was charged with indecent exposure and that his name would be listed with the perverts of New York. He blamed meddlesome old people looking out of their Central Park West apartment windows for siccing the police on us.

We loved climbing the rocks and remnants of what were once the mountains that rose high many millions of years ago. We got to know all the playgrounds and headed for each water fountain as soon as we saw it a good distance away. We considered it a treat to eat a Melloroll, a cylinder of ice cream on a special wafered cone. We also had our fill of orange Creamsicles and Crackerjack. We followed the bridle paths and admired those who rode their horses, many of them dressed smartly in riding outfits. We longed to go on a canoe ride, but our mother was too afraid it would tip over and we would drown so that pleasure we never experienced. But it was wonderful to stand by the shore and watch the young lovers rowing out to the solitude of the middle of the lake.

Some forty years later I was taking a walk from the Museum of Modern Art to visit my brother on 75th street on the other side of the park. It was a nice day and I reflected on the places where we had played as children and saw few changes until I came to that rowboat lake and a particular site near the West side where a spit of land stuck into the lake. It had a granite rock that, as a child we would struggle to climb. What struck me was how the rocks had shrunk and the trees had grown. What were once graceful saplings and young trees were now stout and gnarled trunks supporting a massive foliage. The rocks that looked so formidable were now an easy climb along a relatively gentle slope.

When I was going to NYU I would often go to the park for peace of mind to relax, read, or meditate. I sought a region of the park where I would see none of the buildings and actually found such a spot not too far from where a merry-go-round used to stand. There were many trees and not too many paths in that area and I could climb into this secluded region and feel at peace with nature, like an urban Thoreau. At other times, I thrilled to the cityscape around me, the oppression of the city's crowding muted by the expanses of grasses, trees, and stone bridges.

I never fully appreciated what the well-to-do got for their expensive apartments along Central Park West or Fifth Avenue until I visited the childhood home of a colleague of mine at UCLA. Rod Gorney was a psychiatrist whose mother and stepfather lived on Central Park West. Rod's

stepfather was Yip Harburg, the lyricist whose well known songs included *Brother, can you spare a dime* and *April in Paris*. He also wrote the lyrics for the movie classic, *The Wizard of Oz*, and the Broadway hit, *Finian's Rainbow*. Harburg's apartment faced Central Park and the entire park could be seen from his living room window. I appreciated how this child of the slums of immigrant Jews went on to contribute to our popular culture and had the satisfaction of seeing part of his beloved Manhattan from the vantage point of the gods.



Central park is one of the glories of Manhattan. It was a refuge from tenement life and a place where my brother Roland and I could play under the watchful eyes of our mother.

CHAPTER 13

WORLD WAR II

The first time I saw my father cry was in June 1940. I had come home from playing in the street by the Gnome bakery on 59th street. I asked what happened. "Paris fell," he said. I was only vaguely conscious of the start of the World War. Few current events of national or international significance entered my consciousness prior to my 10th year. I recall seeing the Graf Zeppelin when it flew over the Bronx and the awe we felt seeing that huge aluminum ship silently sliding by. I remember listening to the radio with my father and brother as Joe Louis beat his opponents. A new comic book appeared called *War Comics*. President Roosevelt in a motorcade came campaigning in New York City and drove down 59th street and we waived to him. At school during recess my friends and I recited a campaign ditty:

The horse's tail is long and silky
Lift it up and you see Wilkie!

War Comics was real life adventure. We saw the white uniforms of the combatants on skis in the Russo-Finnish War and my father, left-leaning as he was, had enormous fondness for the Finns who put up stiff resistance to the Russians. He told us of his occasional trips through Finland with his father when he was a boy en route to St. Petersburg where his father would go on business. There were also undercurrents of preparation for war. I was not yet in the habit of reading newspapers except for the daily and Sunday comic strips, but I did go to the movies a lot and they had a newsreel filler between the main feature and other shorts. These newsreels I looked at with great fascination because I would see German Stukas streaking down the

skies and dropping bombs or strafing cars. There would be pictures of churches and buildings demolished by air raids. And most fearful to me was the precision goose-stepping of helmeted German soldiers with their Swastika armbands and banners. The thought of human beings being regimented into a common behavior was so alien to me; I felt frightened.

A year and a half later we were on Amsterdam Avenue and it was a sunny Sunday afternoon in December. We had been in the park all day with our mother and were finally up the flight of stairs to our apartment. My father asked us. "Did you hear what happened?" I thought he must be referring to a football game. "No, the Japanese bombed Pearl Harbor." It meant nothing to me. I had no idea where Pearl Harbor was and it did not register on me that the next day there would be a formal declaration of war. But in school we quickly learned what that war meant. We were issued plastic identification tags, round white disks about the size of a half dollar with our name and an identification number engraved on it. There was a hole pierced through it near the top of the disc, and a thick string ran through it. We were to wear it every time we left our house and we had to show our tags each day when we came to school. As the war sank into our being, we were asked to collect tinfoil, the inner wrappings that encased packs of cigarettes and kept them fresh. We brought in newspapers (but not our comics) for the paper drives. Our class made a huge ball of rubber bands to donate to the war drive. We even learned to knit, boys and girls together, six-inch squares that the teacher sewed into blankets to be used by the cavalry for the horses. I recall that Spring our teacher called the *New York Times* to find out if we still held Midway Island. We did, and our class cheered.

At home our mother had books of ration stamps. Red ones were for meats. Coffee, sugar, and tea were also rationed. Sometimes our father had to mix coffee with chicory. He hated it, even if Eleanor Roosevelt on the radio told us to use old grounds, a spoon of fresh coffee, and chicory to make a passable cup of coffee such as she made for Franklin and herself. We were taught to pull down the window shades in the evening and if there was an air raid, we had to follow the warden's instructions, making sure all the lights were turned off before we left for shelter. Sometimes the raids did

not involve our leaving and we had to prepare our windows for a blackout, hanging dark cloth over the windows and taping them to the walls or window fittings so that light would not show through. At school we had occasional air raid drills and we walked to a ten-story apartment building about three blocks from school towards Central Park West. I remember sitting in the halls and watching a roach scoot by across the skirt of a young girl near me.



Ration stamps were used for food, clothing, tobacco, gasoline, and other commodities in short supply because of military needs.

Once the teacher kept waiting for the all clear signal but apparently did not hear it. We were late getting out of the building and as I hurried to the corner of 104th Street and Amsterdam Avenue I saw a crowd and in the center of the crowd was a policeman and my mother. She was hysterical and moaning. "Where is my child? They won't tell me. Where is my child?" I stared at her in fright, and she was relieved as soon as she saw me. The policeman looked at me. "Shame on you for scaring your mother like that. Don't you know better than to play with your friends when your mother is waiting for you?"

On the radio I listened to programs like *This is the Enemy*. I learned about Pastor Niemuller's defiance of the Nazis and his martyrdom. The Book of the Month Club issued Steinbeck's *The Moon is Down* and I learned how the Norwegian resistance worked. We listened on the radio to war songs like *Praise the Lord and Pass the Ammunition*. We all laughed at Spike Jones as he sang *The Fuhrer's Face*.

Every few months the Germans and Japanese changed in appearance in the comic books. The Germans became more thick and stupid, rough and cruel. The Japanese shrunk, having larger heads and smaller bodies looking like tailless monkeys. No one thought it racist to call the Japanese Nips or Japs. Sometimes our own GIs were portrayed in unflattering terms, with some allegedly kicking the gold teeth out of dead Japanese jaws. Those were whispered stories, like dirty jokes, not something that anyone would print. Even if they wanted to, censorship prevailed in the press. By 1943 I was reading the newspapers and enjoying the wonderful maps of the major areas of conflict. The German occupied territories were in gray and the free areas were in white. The best maps were in *PM*, with even the mountains represented symbolically by lines of inverted V's. I loved seeing the arrows pointing toward embattled German troops and the pincers closing in on them. Month by month the lines moved westward from the Russian front as the Germans retreated.

We bought war stamps in class. They were a dime each. We would then paste them in a booklet. When the booklet was filled, we could turn them in for a war bond. It cost \$18.75 for a 25-dollar war bond. I was never able to

save that much. Sometimes our mother would take Roland and me to a Russian war relief shop. We bought a picture book on the Red Army. The ink had a linseed oil base and reeked of that odor. The photographs were very graphic. I was morbidly fascinated by a Russian with a shell sticking through his leg. I looked at a dead Soviet soldier whose brains were half blown out by a German dum dum bullet. They showed lines of civilians hanged by the Germans.

While at PS 220 in Brooklyn one June morning in 1944 we were asked to all leave our classes and fill the courtyard. The principal told us that at this moment the United States had invaded France. It was D-day, a long-anticipated opening of the Western Front and the last push to destroy the German armies and force the surrender of the Nazis. We were told to pray for the safety of our soldiers and then allowed back in class.

The war was still on when we moved to Sheffield Avenue. There was no question now that we would win the war. The Japanese were being pushed back out of the Pacific islands they had occupied. Italy had fallen and I looked at the newspaper pictures of Mussolini and his mistress hung by their heels after they were killed by partisans. The Germans were retreating back to their own borders. Victory was in the air.

VE day finally occurred in the late spring of 1945. Berlin had fallen. Hitler was dead and Nazi bigwigs were being caught at the Swiss border or managing to elude capture. On VE day there was a block party on Sheffield Avenue. Kitchen tables and card tables lined the middle of the block and were filled with bottles of beer, plates of hot meats, and lots of other food to celebrate the end of Nazism. People danced and the music played well into the night. I watched it from my window. Even our bitter enemy, Mrs. Skolnick came to my window, handed me a glass of soda and said, "Here, the war is over. Feel good. Drink it. Drink it." I did and felt like a traitor. I dared not tell my mother.

I was unaware that there was a Holocaust. That did not come out until much later. Its impact was much more apparent to my classmates at Thomas Jefferson High School. Many became Zionists and some worked out in military camps in New Jersey and hoped to be sent to Palestine to join the

guerrilla war against the British who still were in nominal control of that troubled land. Equally surprising to me was my ignorance about the atomic bomb. It was just a big bomb and didn't mean much to me. I didn't even think it had ended the war. For days, before the atomic bomb was used, there were reports of the Japanese meeting diplomats in Switzerland to end the war and false rumors that that they had actually surrendered. These were in all the papers and there was a feeling the war would end in a matter of days or weeks. When VJ day came we had another block party on Sheffield Avenue, equally happy, but in some ways an anticlimax. I was much more interested in the peace than the end of the war and loved the idea that there would be a United Nations (then called the UNO or United Nations Organization). The Cold War did not yet exist, and for a brief moment, it seemed that we had achieved what we had sung so often in our music class, the United Nations victory hymn composed by Dmitri Shostakovich:

The sun and the stars are all ringing,
with song rising strong from the earth;

The hope of humanity singing,
a hymn to a new world in birth.

United Nations on the march
with flags unfurled,

Together fight for victory
-- a free new world.

Together fight for victory,
-- a free new world



My brother Ben's response to Hitler in a doodle ca 1939.

CHAPTER 14

EAST NEW YORK JHS 149

I was put on notice my first day in class, sitting in the back of the room, as the new kid in the class. One of the tough kids leaned over and asked “What’s your name.” I mumbled an answer and the teacher spotted me. “Stand up young man. That sort of thing doesn’t help you here. You may have had bad habits before, but in this class we won’t tolerate talking without permission.” Suddenly, I, teacher’s pet extraordinary, had become a suspicious character to be watched. Fortunately, the cloud lifted quickly as I provided answers in class, turned in my homework, and once again brought a warm gleam in the eyes of my teachers.

The junior high, PS 149, was about a six block walk from our apartment. We would pass a Russian Orthodox cathedral en route, and often stopped in a delicatessen where I would get my lunch sandwich wrapped, put in a bag and then carried it to school. My mother walked me each way that first semester, making it awkward because I was virtually the only male student who had a parent taking him. Fortunately, she stopped doing that when I made a fuss. I loved going to class. The courses were more challenging and I started my first French lessons, took general science, enjoyed the history and literature courses, and felt comfortable doing algebra. My teachers were good. The A’s came easily. I took several art courses and by now had developed into a reasonably good artist for my age. At home, I would draw my face from a mirror if no one else was willing to pose. I loved doing portraits and kept doing them until I started college. I tried pencil, charcoal, pastels, and eventually oils. I loved art. The art teacher asked me to do the cover for the school magazine. I did so for both years I was there. In my first effort I drew a light house (years later some of

my friends, having just read Freud, told me it was really a penis). I wanted the beacon of light as a symbol of our knowledge. The second year I also did the cover and chose a more complicated pattern of a checkerboard and filled the outer squares with activities of the school. Both efforts, at the time, brought a lot of oohs and ahs from my classmates who thought it looked grand. The covers were also my first published work, so I felt happy. The magazine was distributed to all the students and teachers and was printed on slick paper.

I also loved science. Mr. Hugh F. Browne was my general science teacher. He quickly recognized my love for science and encouraged me. He asked me to grade the quizzes for the other students. He often talked about his family and sometimes I would walk him to the IRT train station. His father was a policeman. In the last quarter of the nineteenth century, the Irish were given the police department and the Italians took over the fire department. Mr Browne had two children who were about my age. He was an observant Catholic who had his youthful indiscretions. "Too much bathtub gin." He admitted drinking to excess during the Prohibition days. He was balding with gray hair still on the temples and the back of his head. He was witty and loved his job as a teacher. The more he talked to me the more he wanted to get to know me better. I was very guarded about my family and only volunteered the minimum of what he asked. He must have become suspicious. He said he would like to invite me to his home. He said he would pick me up at my place on a Friday and that I should "pack a suitcase, bring a toothbrush and swimming suit," and he'd drive me to his home on Cortelyou Road. I didn't tell him that I had no suitcase, had never used a toothbrush in my life (I brushed my teeth with my index finger), and neither knew how to swim nor owned a swimming suit. Instead, I told my parents. They said not to worry, and my mother met him when he came by. Mr. Browne never said anything when he came in to our kitchen briefly to pick me up. But what he saw was clearly something sad to his eyes and confirmed his suspicions about how I lived. I enjoyed my weekend and met his son and on Sunday my father came to pick me up. I was mildly uncomfortable there because I had not been away from home before and I felt uncomfortable participating in habits like saying grace at meals. Mr.

Browne thought I wasn't listening while playing with his son, but he asked my father if he could adopt me. He felt I was so talented that I would have many more opportunities in his household to get the education he thought I needed. My father, of course, thanked him and let him know that I was a much-loved child and would flourish even if we lived in so modest a circumstance. Mr. Browne sent me wonderful Christmas cards. One of them was in Latin, in which he said my parents could justly say, "exegi monumentum, perennius arei", which he translated for me "out of myself, I have crafted an enduring work of art."

Mr. Browne and I continued our daily walks until I had graduated. A few weeks after I began high school, I heard that Mr. Browne was sick. I sent him a card and a note, and I hoped he would reply. He did not. He died a few days later of kidney failure at the age of 45. His bathtub gin did him in. I respected him as a teacher and as a caring human being. He was one of several teachers whose habits would shape my life.

The first girl I felt a crush for was also in junior high school. Her name was Sophie Kurzon and she was Russian Orthodox. We got to know each well during the Jewish holidays. In those days the non-Jewish students and most of the teachers (except for the most observant) came to school. Since they couldn't give regular lessons they used the occasion to get to know the students better and to give the students opportunities to talk with one another, play board games, work on art projects, and similar activities. Sophie was blond and very attractive. I think she liked me too because she was a good student and we both did well in the classes that we shared. What distanced Sophie from me was my left wing sympathies and my godless view of the universe. I was now reading *PM*, or its newly renamed form, *The New York Star*, with great enthusiasm. It was my favorite newspaper because it covered intellectually exciting topics; it had a sympathy for working people; it had a muckraker's zeal in exposing faults with the city administration; and its comics were at a higher intellectual level. I particularly loved Crockett Johnson's *Barnaby*, a story of a little boy and his imaginary, incompetent, but affable fairy godfather whose magic wand was a cigar.

One of my teachers, Miss Dwyer, listened on the sidelines as I would argue with Sophie, justifying the Soviet position on Eastern Europe (“They need a buffer from being attacked again”, China (“Mao’s army is just a bunch of agrarian reformers.”); and Japan (“The Sakhalin Islands were stolen from them after the Russo-Japanese war.”) She got me alone in the room. “Elof, watch out. I know you are very smart, but your views will get you into a lot of trouble because they are Communist. You should try reading other newspapers for a more balanced view.”

My favorite friend was Kurt Kinzbrunner. His family had gotten out just before the Holocaust. Kurt had a European’s love for learning and I once visited his apartment. His father collected thousands of 78 rpm records and they were in a library of shelves that virtually filled the room. Kurt played some of my favorite operatic pieces that I had heard only on WQXR. We both enjoyed reading and cultivating the fine arts. I looked forward to being with him in high school, but his father would not let him go. They were suffering financial difficulties and he wanted Kurt to drop out of school and help the family in its time of need. It was a blow to me, and I am sure even more so to Kurt who was so talented and intellectual.

ENY JHS 149 was well known for two of its graduates, Danny Kaye and Phil Silvers. Both were comedians and their careers were just getting started when we were there. Danny Kaye already had become a household name for his movies and his radio appearances where he sang tongue-twisting lyrics that his wife composed. Phil Silvers became an early TV comedian and made his fame as *Sgt. Bilko*. The school was also well known for one of its infamous students, Lepke Buchalter, a major figure in Murder, Incorporated, who was condemned to die by electrocution.

The school had a reputation for toughness. Gangs were just beginning to flourish in the neighborhood. The tough kids were frequently put in special classes and the more talented students were grouped together. The two classes rarely encountered each other because they self-selected their friends. One of the teachers, however, had an emergency and had to leave the room and one of my classroom teachers selected me to be a monitor. I had learned my lesson from PS 220 and certainly was not going to be an

informer again but, I would try to keep order. The teacher brought me in, introduced me, and told the class to just read and not make any noise and they should raise their hand for me to recognize them if they had anything to say. No sooner had the door closed when I was surrounded by several students. “Why did they choose you?” “What are you going to do, snitch on us?” I quickly established that I was a meek individual who had no intention of bringing them harm and that I was quite incapable of telling them to do anything. I guess they liked my candor or my cowardice. One of them said. “If we didn’t like you, this is what we would have given you,” and he held out a hand with a bed of soggy tissue paper on which was a fresh glistening wet turd. As I turned assorted ashen shades, they burst out laughing and made so much noise that the teacher who brought me there returned and relieved me of my failed duty. It was my introduction to “how the other half lives.”

I had another friend, Luther, who was African American. He lived about midway between the junior high school and my apartment. I once went to a birthday party at his house and played darts and enjoyed the cleanliness of his place which was such a contrast to my own home. His father was a motion picture projectionist in a local movie house. Luther too did not go to Thomas Jefferson High School. He was interested in an engineering program and entered Brooklyn Technical High School.

The seniors who were about to leave junior high, would complete their last three years in high school. They would celebrate a few weeks before graduation with a field day. We were packed in school buses and taken to Alley Pond Park and there the students enjoyed all sorts of sporting activities and I and my friends would form small gatherings with our favorite teachers. Field day was festive and I imagined the celebrations that must have occurred in ancient Rome when heroes were honored and the community would turn out. It was a time to see track and field, athletes on the varsity teams at play, and our teachers dressed informally and enjoying soda, hot dogs, and watermelon.

At graduation, I received seven medals and awards, including a \$100 war bond, a Bausch and Lomb Science prize, some silver medals for

general excellence and French language, and many certificates of recognition. My parents and Roland sat in one of the front rows of the upper balcony in the movie theater where the graduation took place. I heard a bit of a commotion from that direction and soon my mother was on her way out, fleeing her imagined enemies, leaving my father and brother to smart with humiliation for the rest of the ceremony.



The East New York Junior High School on Sutter and Vermont Avenues was renamed for Danny Kaye, its most famous alumnus.

CHAPTER 15

THOMAS JEFFERSON HIGH SCHOOL

Thomas Jefferson High School opened its doors to admit its first class in 1924. It was not an elite school, but it had a generous share of talented students of immigrant parents and immigrant grandparents, most of them poor Jews. The neighborhood had changed many times, as I recall, from walking with one of my friends who lived near the end of the New Lots Avenue subway line. He was Arnold Koslow, and his father had a kosher butcher shop on the corner about two blocks from the train station. Along the New Lots Avenue line were Old Dutch names, like Van Siclen Avenue, to testify to a presence when New Amsterdam had not yet become New York. There was an Old Dutch Reformed Church with gravestones from the early eighteenth century bearing the names of these Dutch inhabitants. They were replaced by the English, and as Brooklyn became the bedroom for those who worked in Manhattan after the opening of the Brooklyn Bridge, hundreds of thousands of immigrants settled into these neighborhoods. By the 1920s, the Jews from the Baltic states, Poland, Russia, and the Balkan countries had filled the streets with their stores, their synagogues, and their culture.

I was comfortable with this high school. We lived across the street from its back entrances. Entering the school each morning of the school year was like entering a temple. I felt protected and I was enveloped by knowledge, teachers who enjoyed sharing their skills, and students who had fun being with each other. I quickly excelled in my classes which were then designated by the letter R for rapid advance. I entered in grade ten and the two semesters were labeled A and B. Thus, 10BR would be my spring semester of the sophomore year of high school. Ordinary students would be

in the 10B classes and those who had the most academic difficulties or behavioral problems were put in 10BS for the slow classes. Students quickly decoded any of the abbreviations used by teachers and administrators and knew where and what they were although they may not have known why they were assigned to such programs.

Assigning students to classes of their choice was relatively new and computers were still decades away. Mr. Cohen was in charge of this operation. Despite his blindness he had a remarkable memory and could keep track of the numbers assigned to each class. When I volunteered to work for him late in my junior year, I began as a board operator. Two large wooden boards about seven feet by ten feet each were aligned against a wall. I would have an apron with deep pockets in which there were metal rimmed key tags on which were written the numbers 0 to 9. If a student were added or dropped in a particular class during registration, I would lift off the old key tag from its nail, and replace it with the correct number. This way each class would be held to its state mandated maximum. I got quite proficient at this, leaping from one board to the other and switching tags, and doing it with both efficiency and speed.

Many of the students who participated were members of Arista, the student honor society for those with high grades. Elections were held each year and a senior would be designated Boy Leader or Girl Leader. For my senior year my classmates elected me Boy Leader and Frieda Denmark Girl Leader. There were separate organizations for service to the school and for various scholarly clubs. I enjoyed the Biomed club which we organized with the help of our science teachers, Mr. Lesser and Mr. Wunder. We had our own newsletter that was mimeographed and wrote up our experiments and placed them there. When I entered high school, I knew that if I didn't become a portrait painter, I wanted to be a scientist but I didn't know what kind. In the biology course that I took, Miss MacPherson had each student read aloud an item from a newspaper or magazine she read. On one such occasion, I read to the class an account of the Nobel Prize in Medicine that had just been awarded to H. J. Muller. As I read about the use of x-rays for introducing new mutations and speeding up evolution, I felt a shiver of delight. I was filled with a feeling of awe and joy as this new knowledge

resonated through my entire being. I knew that I wanted to be a geneticist and that I wanted to have the pleasure of making a scientific discovery like Muller.

Mr. Lesser told me how to write to Cold Spring Harbor and send away for some fruit flies. I then went to lower Manhattan with my mother and bought some Moldex, a mold inhibitor, and some agar. At home I cooked a pot of molasses and cornmeal, added the agar and Moldex, cooked it to a creamy consistency and poured it into half pint milk bottles for the stocks and glass vials that were available from our science storeroom. I plugged these with cotton I had bought at the drug store. I had made my first batch of fruit fly media. I carried out a cross of a normal and dumpy winged flies and obtained, in due time, the F2 generation (the grandchildren of the parental types I had crossed). Just before they hatched out of their pupa cases, I would look lovingly at those immature flies waiting for them to be born. I tried to hasten their emergence by incubating the vials under my armpits, feeling like a mother hen.

One of my friends, Norman Lapidus, carried out an experiment with a pithed frog, and I marveled at its beating heart attached by hooks to a soda straw that served as a fluttering lever to record the rate of heart beats as it was stimulated with different concentrations of saltwater. None of our stuff was Westinghouse quality and no one in those days in our school would ever have thought of working in a scientist's laboratory as a volunteer to carry out a supervised project. Yet these tiny crumbs of real science excited our curiosities and enflamed our hopes for careers as scientists.

I made friends with Marvin Freeling, Freida Denenmark, Herman Cohen (later Undersecretary of State for African Affairs in the first Bush administration), Donald Gelber (later Ambassador to Mali in the same administration), Jerry Grubin, Louis Greenspan, Leon Landowitz, Sam Fillenbaum and Arnold Koslow. Five of us in that small circle got our PhDs and went into universities to enjoy our careers.



With my best friend, Arnold Koslow, at Hylan Park, Brooklyn.

We had a great deal of fun reading literature in our class with Dr. Sper. He was a scholar with immense insight into the books we read. We put together a collection of satirical essays based on our readings and called the magazine *Sper Ribs* and surprised him with it. He was both delighted and touched by our love for his teaching. A few years later Dr. Sper was one of those fired from the high school for refusing to testify about his past association with the Communist Party. He never made his political life known to any of us. A similar fate befell Mr. Wallach, whose leftist ideology was well known to us. It was Mr. Wallach who took an interest in me when he learned I was going to be a geneticist. At the time the Lysenko controversy was in full eruption throughout the scientific world, with news of the “death of science in the USSR” widely publicized. Lysenko attacked “mendelism-morganism-weismannism” as bourgeois, racist, and idealistic while his own curious replacement of genetics he called progressive and Darwinian. Mr Wallach asked me to read and evaluate for him, Lysenko’s booklet, *Heredity and its Variability*. He also gave me a book, *Out of the Night*, written by H. J. Muller and apologetically offered his belief that “not all geneticists are critical of the USSR.” Neither he nor I had yet encountered Muller’s vitriolic blasts at Lysenkoism. When Mr. Wallach was

fired he tried to make a living as a bookkeeper and I accidentally met him once on 14th street as I was walking to NYU. Both Dr. Sper and Mr. Wallach later committed suicide. They were unrecognized casualties of the Cold War.

I had many fine teachers at Thomas Jefferson High School. I loved art classes with Mr. Bernard I. Green. He was a student of Robert Henri's and painted so much like him I could not tell his portraits from Henri's. I stared in awe as he painted an African American girl in our class, bringing out her smile and the inner grace he saw in her bearing. I adored Mr. Max Cantor's classes in French. For the advanced French class we read Rostand's *Cyrano de Bergerac*. I recall, to his amusement, the class' guffaws, and my humiliation, raising my hand and asking (in French) "what does *vierge* mean?" And with a puckish look, and a soupçon of a raised eyebrow, he crisply replied "a virgin." I enjoyed Dr. Edna Kramer's courses in trigonometry and advanced algebra. She was writing a book at the time and gave me a typed manuscript copy to read. It was a well received history of mathematics, *Mainstreams of Mathematics*. During one of the Jewish holidays when I was one of about 3% of the student body in attendance, I taught her how to play chess. I had fun with my history teacher, Mr. Jaffee, who was one of the most cynical persons I had met. One of his favorite sayings for us to reflect on was: "There's always hope for the human dope before he takes to the rope."

I was active in many school activities. I made posters for the science departments, showing, in one, the Solvay process for making aluminum. On another I drew a spiral of the time line of evolution and painted the extinct animals along their eras which I had measured and marked off. Students would gather in knots looking at these posters and I was very torn between being an artist and being a scientist. I made the decision in a methodical way. I took a trip to the Metropolitan Museum of Art specifically to look at techniques. I was interested in details. How did Rembrandt, Raphael, Memling, Hals, Romney, Sargeant, and other masterful portrait artists paint nostrils, eyelids, and the cupid's bow of an upper lip? I looked with immense interest how a daub of paint, a smear of color, first seen close up and then at a respectable viewing distance, became indistinguishable in my

eye from the reality of the nostril of living people. Each artist did this in a different way and yet each succeeded in creating an illusion of reality without painting an outlined cavern and filling it in with grey shades. I realized as I studied these techniques that none of this was effortless and none of it was accidental. To do this would take years of commitment. I did not want to be a Sunday painter, I loved science too much, and I abandoned art as a career.

I had one major failure at Thomas Jefferson High School. It was the first experience I had (there would be many others) where my loyalty to a principle resulted in being punished. I was always volunteering and filled many hours each day with my activities. Students were elected to Service Council based on the number of signed notes given by teachers that were placed in portfolios for the students. Over the semesters these would accumulate. I always asked my teachers to fill these out. My friend Herman Cohen did not. He volunteered a lot and enjoyed working for the school and was as loyal and full of school spirit cheering on our teams as I. He just didn't care less whether he was given credit and rather liked being an unsung hero, working without fanfare. When he was being considered, I rose in his defense and made an impassioned talk for his candidacy. The faculty advisor, Miss Touvim, pointed out that while this may be true, there was no evidence for it and that an organization had to abide by its standards. I knew, of course, that she was legally right. I saw it, however, from a moral perspective of justice. The students, of course, voted down Herman's candidacy. I brooded over this injustice and wrote a letter to Miss Touvim saying I wanted to resign from the Service Council because I felt, in good conscience, that I could not belong to an organization that turned down someone as worthy as myself. I included my Service Council pin.

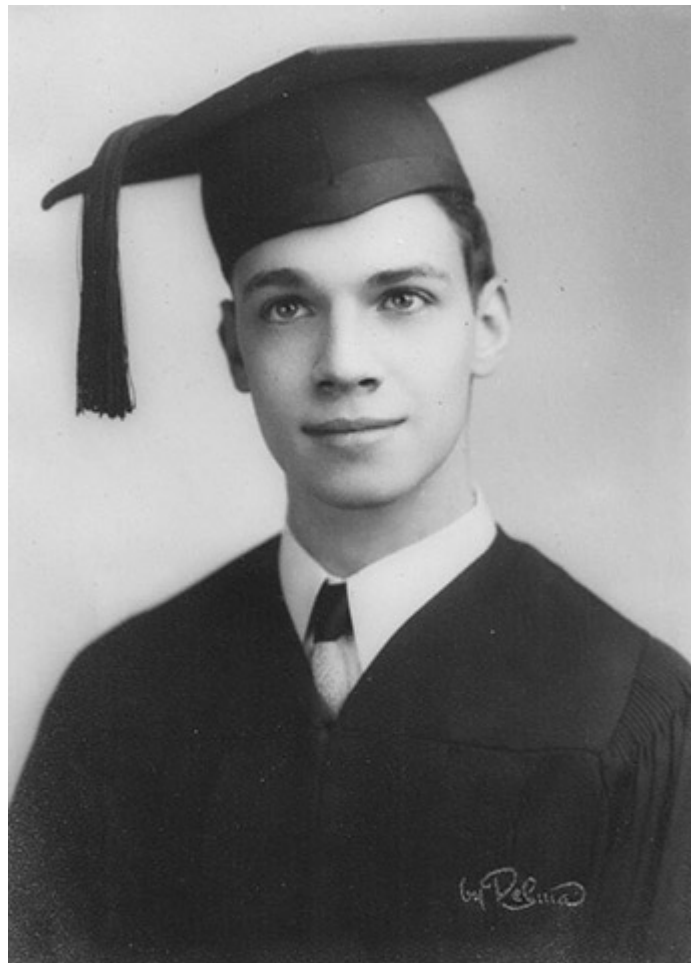
Miss Touvim was furious and went to Mr. Cohen who related her fury and suggested I speak to her. I did. "Who do you think you are?" she cut me down as soon as I walked in, "a little tin god?" She went into a tirade and said if I didn't apologize and take my pin back she would see to it that I was stripped of every award I was slated to get at graduation. I went to



Thomas Jefferson High School is at 400 Pennsylvania Avenue in the East New York section of Brooklyn. It is now a campus with several magnet schools for students with different talents.

Mr. Cohen and he tried to comfort me, admiring me for my principles but preparing me for a world that works in a different way. He told me to write the apology, that some people are easily offended and misinterpret the motivations of those who have high ideals. I did so, writing an abject apology for my deeds and asking her to give me the pin back. She did. I then walked down Pennsylvania Avenue towards New Lots Avenue to visit a friend, and as I did so, I saw a boy about seven years old playing on the street. "Hi," I greeted him, "Would you like a present?" I then pinned my

Service Council pin on his shirt and he broke out in a smile with delight at having a medal attached to his proud chest, and I happily moved on.



June 1949 I was graduated from Thomas Jefferson High School.



I am sitting in front with one of my Uncle Charles Vogel's neckties. To the left is Frieda Denmark, the Girl Leader of Arista (the National Honor Society). I was elected Boy Leader of Arista. Picture was taken at Thomas Jefferson High School cafeteria, about 1949.

CHAPTER 16

MR. COHEN

I first met Morris Gabriel Cohen when I was reading by an exit light in the back of an otherwise darkened auditorium. It was 6:45 AM and I had been at school for about 15 minutes. I was always the first student in because my father was my alarm clock. He would awaken me about 6AM just before he left for work. He would scratch my head and as I roused myself from sleep he would hand to me a hot cup of coffee with milk and sugar, the New Yorker's "regular". I glugged away until I was fully awake, hastily dressed, combed my hair, and I was gone across the street and a mere one block later walked down Pennsylvania Avenue and the front entrance of Thomas Jefferson High School. "Who's in this room?" The voice cried out and I jumped with a start. I recognized the voice. I knew of Mr. Cohen from some of my friends. He was almost completely blind and he was adored by students who took an extracurricular scholarship review course with him. He knew vaguely of me from my classmates who described me as a high achieving and nerdy student. I had heard from one of my friends that he had dismissed me as a grind without much original thought. It stung and I had only luke-warm feelings for him and scheduled other activities at the time his scholarship group met.

I told him who I was and what I was reading and why I came in every morning to read before classes. "Come to my office," the voice was calmer. "Elof, if you like to read, I want you to do me a favor. Years ago when I was at Columbia University, I enjoyed courses given by Carl Erskine and Moses Hadas. We read many wonderful books that defined our civilization. Would you like to read them aloud to me?"



Morris Gabriel Cohen, at Thomas Jefferson High School Office, 1949.

For the next five years, four of them while I was in college, I began each school day with a 45 minute session in Mr. Cohen's office. We started with the Greek plays in translation. We read *Prometheus Bound*, *Antigone*, and *Medea*. An incredible world opened up. I was learning the virtues of defiance against authority when principle is at stake; of the balance of reason and emotions; of the conflict between state and universal authority; of the brutality of vengeance. Forty years later I could make the president of my university laugh when I wrote a letter to him and described his actions as those of a King Creon. Reading aloud was a new way to learn. I did not know then that I was experiencing an education that only the wealthiest children in the eighteenth century enjoyed – I had a private tutor!

We entered Plato's world and Socrates became my hero as we read his trial, his condemnation, and his death. We discussed Aristotle's *Nichomachean Ethics* and his *Poetics*. We read Plotinus and Epictetus, roared with laughter when we did Aristophanes's *The Frogs*, and marveled

at the literary sensibilities of Marcus Aurelius. Throughout these readings Mr Cohen would point out modern parallels and he would provide the background to readings. He did it with great humor, often bursting out with laughter as I would miss the significance of a point, as when Rabelais described a spirited character as Tubals Holofernes. We must have spent a month reading Montaigne's essays and I was captivated by his themes ["How by various means we reach the same end"]. Montaigne made his reader feel like a guest at his dinner table.

I loved reading Dante's *Inferno* and portions of the *Purgatory* and *Paradiso*. We read *Song of Roland* and *Everyman*. We ended up with Freud's *Civilization and its Discontents*, a work that is often described as profoundly pessimistic, but which I found to be one of the most illuminating books I had read. I made sure when I taught my first course for the Honors College at Stony Brook that I would include that work and teach my students the value of sublimation for their discontents.

At his home, Mr. Cohen read contemporary works, with his aunt, an elementary school principal, reading aloud to him and his mother. He had never married, but he did have a girl friend he had met in England while he was overseas during World War I as a doughboy. She had died while still young during the London Blitz and he visited her grave whenever he made his summer trips to Europe. It was through Mr. Cohen that I first read Schrodinger's *What is Life?* He introduced me to the novels of Henry Green, Rumer Godden, Peter de Polnay, and Owen Dodson, contemporary writers whose novels appealed to his passion to learn how the human condition varies.

I learned that he had Leber's optic atrophy. He said he had inherited it from his mother and that he was glad he never married because he didn't want to pass it on. Ironically, he could not have passed it on, but that wasn't known until many decades later. It is a disorder of mitochondria, small structures in the cell that take the oxygen we breathe and burn the foods we eat to provide energy for the cell. Mitochondria have their own DNA and Leber's optic atrophy is due to a mutation in one of those genes. Mitochondria are transmitted from egg cytoplasm to child and not from

sperm to child. All of Mr. Cohen's descendants would have had normal vision. He told me his vision began to fail shortly after he entered Columbia University as a Pulitzer scholarship winner. He loved his education there and told me that he "majored in everything useless." Until his eyes failed he hoped to go on for a PhD in philosophy. He chose instead to become a high school teacher. He was at Thomas Jefferson High School, in Brooklyn, when it first opened in 1927, and he enjoyed working with the brightest students, encouraging them to major in fields and seek careers that were unconventional. He steered students into comparative literature, Oriental studies, philosophy, Dante studies, paleontology, theoretical physics, and he advised us "Don't get an MD or go to law school. There are so many bright people who enter these fields. The world of ideas needs you, get a PhD."

When I went to Indiana University, I wrote to Mr. Cohen and gave him a progress report on my work. He was always urging me to look for the big picture, to choose problems that had broad implications. Every Christmas I called him and it became a tradition. No matter where I was, I made that call. As soon as he heard my voice, he would utter a pleasurable "Aaaah" and we would catch up on his life and my life. I once arranged to meet him in Amsterdam when I was doing interviews for my Muller biography, and got to meet his aunt and mother. He wore amethyst colored lenses and he usually managed without a cane when I was still a high school and college student. He was protected by his colleagues and he chose teaching history to girls who had elected commercial studies. "That way I won't get hit by spitballs," he laughed.

Mr. Cohen had his flaws. He was a misogynist, as many males were in those days. Despite his biases about the inability of women to do serious scholarship, many of his female students proved him wrong. One became a world's expert on fossil crinoids. She too called Mr. Cohen regularly and he often praised her to high school students, male and female, as a scholar he respected. He also had me read aloud to him works of female authors, such as Hrosthwisa of Gondersheim and the unknown author of Shakuntala, an Indian morality play. Unintentionally, I demolished his sense of self-worth when I told him that I had seen a philosophy professor who was serving as my advisor at NYU. He looked at my classes for that semester and

wondered why I wasn't taking more courses in the humanities to broaden myself. I told him about Mr. Cohen. He asked what we were reading. At that time we were reading from the *New Testament* (we had read *Ecclesiastes* and *Job* from the *Old Testament* a few days earlier). "Humph," he grunted, "sounds like a quack." Tact was not one of my virtues. I held nothing back when Mr. Cohen asked me what I was doing and learning. There was almost a tremor of sobbing as he shook his head and fought to keep back his tears.

Mr. Cohen was not an observant Jew. He did not keep a kosher home. He went to a Reform Jewish synagogue and owed his Jewish identity to the prophetic tradition. His father knew Samuel Gompers personally and was a cigar maker and early union enthusiast. Mr. Cohen believed that Judaism's greatness was its conscience. It sided with the oppressed and sought justice in a hostile world. He was not political, rarely discussed political campaigns, but strongly believed that we should serve others and particularly those less fortunate than us. He felt so sad for the ignored and relatively meager lives his commercial student girls would face after graduation that he made two sets of grades, one passing them all, which went on their report cards, and the other a near perfect distribution that he made for his Social Studies Chairman who praised him for providing the distribution that he needed and requested.

His colleagues called him Gabe. We couldn't, of course; he was indelibly imprinted in our minds as Mr. Cohen, an address I used until his death. I dedicated my first book to him. I gave his middle name, Gabriel, to my first son. I loved my father, but Mr. Cohen was a second father for me.

CHAPTER 17

ELEVATOR OPERATOR

I began working in the summers after my freshman year at NYU. I first tried out for a job as a “runner” for the Wall Street brokerage firms. I sat in the waiting room all spruced up with my shoes spit-shined and my hair plastered and glistening. Even my finger nails were trimmed and white in the rims. “Over qualified,” was the verdict. No matter what my words were - my timing, looks, and academic record gave me away: summer job only. I asked my father what I should do. “Go to the union.” I did and was assigned to my first job, at 111 Broadway next to Trinity Church. That weekend I went to 2 Lafayette Street with my father. On the weekend there were virtually no tenants coming in. My father showed me how to run an elevator and I learned to move the lever in a semi-circle and the car would usually be three or four inches above or below the floor. It took lots of hours to train my reflexes to do better.



111 Broadway is called the Trinity Building because it is next to Trinity Church. It is on the North corner of Pine Street. The building is gothic in design with numerous gargoyles, figures, and ornate borders. Note the Trinity church cemetery to its left.

At 111 Broadway, Walter, one of the older elevator operators immediately told me to forget what I had been taught. “That’s for electric elevators. This one works on hydraulic pressure.” It is hard to believe that a shaft of some twenty stories had been drilled into the ground about the time that the Woolworth building was erected as the first skyscraper in New York City. Both 111 and 117 Broadway, its twin semi-gothic companion, had been built about the turn of the century. The shaft is moved by fluid pressure using Pascal’s principle and by turning the valve off or on, I would free fall or rise. Instead of a circular control panel, I had what looked like a gear shift. “Be very careful, junior” Walter warned, “if you let go while looking out the door you’ll be cut in half.” He then had me practice in a freight elevator and he told me to move up and down a floor at a time for a half hour, park the car, and turn off the lights so it wouldn’t confuse a tenant, and he would be back. I did as he requested and then parked the car, turned off the light, opened the door a crack, and waited, and waited, and waited. I decided to pull out a paperback and read by the light of the corridor coming through the crack. I would move the page of the book so it would catch the light and, as usual, found myself ignoring the universe and

entering the realm of ideas. Suddenly the doors swung open, and Walter bawled me out. “You’re not being paid to read, junior. Get back to riding the cab and don’t let me catch you reading again.”

The first full day of working the elevators was an amazing experience. The car would bob as it settled at a floor landing. That’s not a surprise for objects at sea, but Manhattan was a worn-down mountain. As I walked to the subway station, the sidewalk pitched, and I reeled like a sailor finding his land legs. For my lunch break I would grab a quick snack and then sit in the graveyard, often on tombstones of those city fathers who were privileged to be buried in Trinity Church. Once a week there was an organ concert and I would listen to it in the pews. There was an elephant folio bible which I would open to *Job* or *Ecclesiastes* and reread for the pleasure these works gave me. I discovered that running an elevator was hard and at the end of the day all I wanted to do was rest or sleep. I also appreciated what it is like to stand eight hours a day and I understood now why my father and brother liked to eat their dinner standing up when they got home. My brother said he enjoyed going to the union meetings for local 32B because no one thought it odd that they stood up most of the time, talking, snacking, drinking, or listening to the speeches.

The following summer I was assigned to my brother’s building, 217 Broadway, next to St. Paul’s Chapel where George Washington went to services. This was a smaller building, about eight stories high and it used to be the Astor Hotel in the mid nineteenth century and its marbled walls and floors still reflected some of the older elegance. It housed the *New York Law Journal*, an employment agency, and many small law firms. Besides Roland there were two other elevator operators, Jack Dougherty and Jack Horowitz. Dougherty was Irish and in his fifties. He drank a lot and so did Horowitz. Both had past histories of alcoholism. At lunch time Dougherty would make a bee line to the Irish bar and grill across City Hall Park and he would come back with a beery breath and a contented smile. He loved to tease and had the most fertile pornographic mind I have ever met. “Junior”, he’d say, “Pull the skin back, skim the cheese off, and show a Christian front.” He would describe to passengers on the ride up how much he enjoyed a plate of “beef rings” at the bar and grill; how they were simmered in brown gravy

and virtually melted in your mouth. One customer was gullible enough to go there and ask for beef rings and got a puzzled look. When he asked Dougherty about the beef rings, Dougherty replied, “Oh, you have to bring your own. You go up to some cows, take out your penknife, lift their tails and carve out your beef rings.”



217 Broadway in Manhattan was originally built by John Jacob Astor as a fashionable hotel. Photographer Matthew Brady lived there and philosopher William James was born there. Abraham Lincoln slept there during his campaign for the Presidency. To the immediate left of 217 Broadway is St. Paul's Chapel. About two buildings to the right of 217 Broadway is the Woolworth Building at 233 Broadway, one of the first skyscrapers of New York City.

Dougherty was afraid of the Mafia. He had some trouble in his youth and believed he was on the Mob's hit list. He always disappeared if a shady looking person came in the building. Once he thought his worst fears were realized when he was on weekend duty and had to make the rounds of the floors in the empty building. Some burglars managed to find their way in and he was held at gunpoint, tied to a chair, and nearly died of fright wondering if he would be shot.

Horowitz was then part of the still sizable population of poor Jews, those described in Mike Gold's *Jews without Money*. He was embittered about life and had an unhappy marriage and a sour attitude toward those who treated him poorly. He was also musical, like Roland, and could whistle any popular tune. He hated classical music and argued that if you couldn't sing it, or tap your feet to it, it wasn't music. Sometimes he would pull out a harmonica and play tunes for us. We were once complaining about the insensitivity of bosses for their workers and he offered an interpretation. “Their attitude is, how can you be hungry when I just ate?” It

was one of the more profound statements about the human condition that I had heard and throughout my life I have abided by its implications. Many teachers make the same mistake and assume that because they have a lot of acquired skills, students ought to have them too.

During the summer we did not have to wear a jacket and we only wore a cap, a white shirt, black tie, and gray pants with a stripe down the legs. At 111 Broadway there was no such compassion for us and we also wore our jackets and white gloves. When it would get to be 90 degree weather and high humidity, the crowded cab was miserable.



At 217 Broadway we had a locker and had to change into our uniform. Roland did this wash drawing of his taupe shirt. The pants had a stripe down each leg.

I got to know many of the passengers. They were always intrigued by my having a paperback book in my back pocket. I was particularly fond of the Mentor series of scholarly books. Passengers would ask me what I was reading and this would often spark short discussions that would be continued at intervals throughout the day as they would find themselves going up or down in my car. I enjoyed Mr. Downes who loved my range of interests and who apologized when he told me he was a Unitarian and thought I might like to see what they were like because, like me, he had no

personal god. I enjoyed Mr. Sterling, a lawyer who must have seen a Broadway show every week and who gave me a run down on the cultural life of New York. There was also Mr. Nichols. He was somewhat portly, chomped on a cigar, and grumped when he came on the car. I didn't know his name but since he was a passenger who got on or off on the fourth floor, I asked him, "Are you Mr. Goldstein?" He pulled the cigar out of his mouth, yanked his hat off, revealing a shock of white Protestant hair, and gasped, "Do I look Jewish!" He thought that was one of the funniest things that happened to him and roared with laughter.

I loved getting weekend duty even with the risk of burglaries and Jack Dougherty's horror story. I would take my favorite books to read and sit by the chair for nearly an hour in the lobby, take a ten minute break to look around the floors, punching in with a night watchman's clock, and then return to my chair and read for another fifty minutes. I was on a Russian novel kick and did Dostoevsky's *The Idiot*, *The Possessed*, and *The Brothers Karamazov*. This was heavy stuff and was getting to me and I remember one Saturday evening waiting for my friend Arnold Koslow to visit me at the building and when he was fifteen minutes late, I was convinced he had hanged himself! I decided it was time for a break from Russian novels.

Each floor had a marble cylinder in which was placed a pan of sand for cigarette butts and into which many a passenger, and the elevator operators, would spit. It was cleaned by one of the porters neither of whom was in a great hurry to do so. The butts would then begin to heap up and a ptyalin odor of fermenting spit would greet those who waited for the elevator. Whenever the superintendent complained then one of the porters would get busy and clean up. I decided this was not an efficient way to do it. So I tried planting a nickel and a few pennies in a few of the receptacles. It worked. The porter who made the discovery was afraid his partner would discover his secret trove of spilled coins and for a few cents a week I didn't have to smell dead cigarettes and sour spit.

While most of the passengers would just give me a hello and goodbye and a few were genuine fun to meet and engage in conversation, many of

the others were not funny. One passenger I dreaded to have in my car alone. He would like to slide his finger down my spine and goose me and I'd feel his finger poking away in my buttocks. In those days no one ever did anything about such sex abuse. Certainly, no one would complain to the police or to the superintendent. So I figured out what to do. When he came onto my car and began to approach me I accelerated and as his finger found its mark, I released the handle and the car stopped almost in an instant. For me it had little effect. For him it produced a monstrous cremaster reflex and his testes no doubt shot into his inguinal canals. "OOPS", I said, "I guess I was surprised." He never goosed me again.

Some passengers would think they were original and say, "I guess you're having your ups and downs today." I would reply "256." They'd be puzzled and say, "What?" To which I'd reply, "Oh, I'm keeping count. You're the 256th passenger who's told me that joke."

We changed our clothes in the top floor where there was an employee's room with lockers. Roland had his locker nicely illustrated with paintings of the New York Giants logo and other items that he valued. One day I left my keys in the lock and did not remember it until we got home. I returned that Monday and Jack Dougherty was in the room. I asked him if he had found my keys. As soon as he answered, I knew I was in trouble. Inside the leather case for my keys was a side pocket and inside the pocket was an aspirin tin, and inside the aspirin tin was a condom. I had worked up my courage at NYU to get a pack of condoms and put one in the aspirin tin "just in case." Well, "just in case" never happened and more than a year had gone by and I was no longer aware that I was carrying a condom until Dougherty discovered my hidden secret. "So," he said, "you've been lying to me." I protested that I wasn't sexually active, that I was still a virgin. Jack, ever the skeptic, harrumphed, "What are you using these for, chewing gum?" He then proceeded to tickle me and I was very neurasthenic in those days so I promptly collapsed on the floor in a gale of wild uncontrolled laughter. He then tossed me my key chain, condom included, and walked out.

About six months later I decided it was stupid to carry my “just in case” protection because it had absorbed so much heat and body sweat that I suspected it had corroded. So I took it out of my key chain as I passed the IU Auditorium and pushed the aspirin tin into the bushes. It stayed there, a faint suspended reproachment that I would pass by, wondering if anyone would be observant enough to see it, long after I had lost my virginity.

CHAPTER 18

COMIC BOOKS

I have always enjoyed reading comics and comic books and do not understand why parents take such dim views of them when a child is fifteen or older. Comics are an American art form, invented in the late 1890s, and have produced wonderful entertainment for children and are a mainstay of the advertising industry. There are purists who turn their noses up when they think of comics who are curiously inconsistent. One such person was David Randall, the Director of the Lilly Library for rare books and manuscripts at IU and author of a superb book on his life as a book collector, *Dukedom Large Enough*. He told me that he would never collect comic books for that library yet he collected dime novels and other popular literature. He did take the manuscripts and cartoons of Fontaine Fox who did the *Toonerville Trolley*, but that was because Fox was a Hoosier. Why not comic books? Superheroes are part of popular culture and led to numerous movies based on Superman and Batman. In some of the early comic books there were one or two page adventure stories, some of them written by Mickey Spillane. If the Lilly collected detective novels, why not collect these foreshadowings by one of its acknowledged authors?

We began with the Sunday comics and daily strips as soon as we were old enough to read. We each got to buy a comic book once a week and Roland usually chose the Superheroes and Disney, and I chose those that reproduced the daily strips such as *Famous Funnies* or *Sparkler Comics* and those that were factual such as *True Comics*, *Real Heroes*, or *How it Began*. Later I collected *Classics Comics*. There was even a series on the Bible. The comic books in 1939 and 1940 had just shifted to the 64 page format and sold for a dime. In addition to cartoon adventures they included a page

of puzzles, a page of jokes, some short stories, and a page or two of ads. The internal ad pages usually advertised stamps and children would get these on approval. We never did that because we had no money to do so. The back cover would advertise bee-bee guns, bicycles, Tootsie rolls, and the infamous athletic training program of Charles Atlas that would convert skinny kids who got sand kicked on them by bullies, into muscle bound he-men who would punch the bully in the nose.

True Comics was my favorite. The editors were respected scholars and included professors from Columbia University, an editor of *Parents' Magazine*, and noted popular historian Hendrik Willem van Loon. The artists were quite good, capturing the likenesses of famous scientists, generals, social reformers, adventurers, and unsung heroes who made contributions to our knowledge and civilization. From *True Comics* and *Real Heroes*, I read the story of Walter Reed and how yellow fever was identified with a virus that was transmitted by mosquitoes and not by soiled bed sheets or clothing of those who died of the disease. I read about Molly Pitcher and her efforts to fight in the battle of Monmouth during the Revolutionary War. Tidbits of knowledge poured from these pages and many of them stuck in my mind and became part of my knowledge that added to my answers in class much to the amazement of my classmates and the pleasure of my teachers who must have wondered where all this knowledge came from. It was a nice supplement to reading the *Britannica* and much easier with all the pictures to create the illusion that I was an eye witness to history.

Once, in the Honors College lounge at Stony Brook, some students were talking about submarines and my colleague, Terry Netter, raised a question about when the first submarine was used. I replied, "During the Revolutionary War." When I was asked how I knew this obscure bit of knowledge, I offered from my memory that I had read it fifty or so years ago in *True Comics*. They burst out laughing and no one believed me or considered that such a source could be trusted. I went home, dug up the issue (volume 1, issue 1, April 1941), and brought it to the skeptics the next day. It was David Bushnell, in September 1776 who offered his submarine, *The Turtle*, to General Washington and told him that it had a half hour's air

supply. Ezra Lee was the seaman who attempted to bore a hole through the hull of the British frigate, *The Eagle*, which was moored near Governor's Island in New York Harbor. The attempt failed because the hull was clad in copper, but Bushnell's use of a propeller to drive a ship and a conning tower to observe the horizon while partially submerged were retained by later engineers who produced submarines.

Whether it was *True Comics*, *Real Heroes*, *Real Life Comics*, or *It Really Happened*, I collected them all and learned about Louis Pasteur, William the Conqueror, Bernardo O'Higgins, Joseph Mazzini, Luther Burbank, John Marshall, or Thaddeus Kosciuszko. The stories entered my head and many of them stayed for life. Most of the stories after 1941 focused on the war and its heroes, but there was enough of the past and general culture to feed my curiosity.

I probably read Paul Berdanier's *How it Began* hundreds of times. He was an engraver and respectable artist who turned to editorial cartoons and then a comic strip which explored the origin of things such as giving a bouquet of roses to a date, the origin of stockings, the military medal, the first street lights, or forks. A good example of Berdanier's scholarship was the origin of Jack and Jill, the famous characters in the nursery rhyme who went up a hill and fetched a pail of water. I learned that they were derived from Norse mythology, which tied the phases of the moon to the amount of rainfall that occurred. The waning moon was called Hjuki (pronounced "juckey", from Jakka, to heap) and the spots or blemishes on the moon were thought to resemble a boy and girl carrying a bucket of water. The boy and girl were named Hjuki and Jil. The waning phases of the moon implied an impending rain because their bucket was falling or fading from view. The English turned the children's names into Jack and Jill. While this might make some of my classmates heavy-lidded with boredom, it was just the sort of thing that made me feel as astounded and as joyous as King George III on first hearing Handel's hallelujah chorus when *The Messiah* was played!

Roland had acquired my comics, of course, because my passion to read his comics outdid my common sense to keep mine. He preserved them and

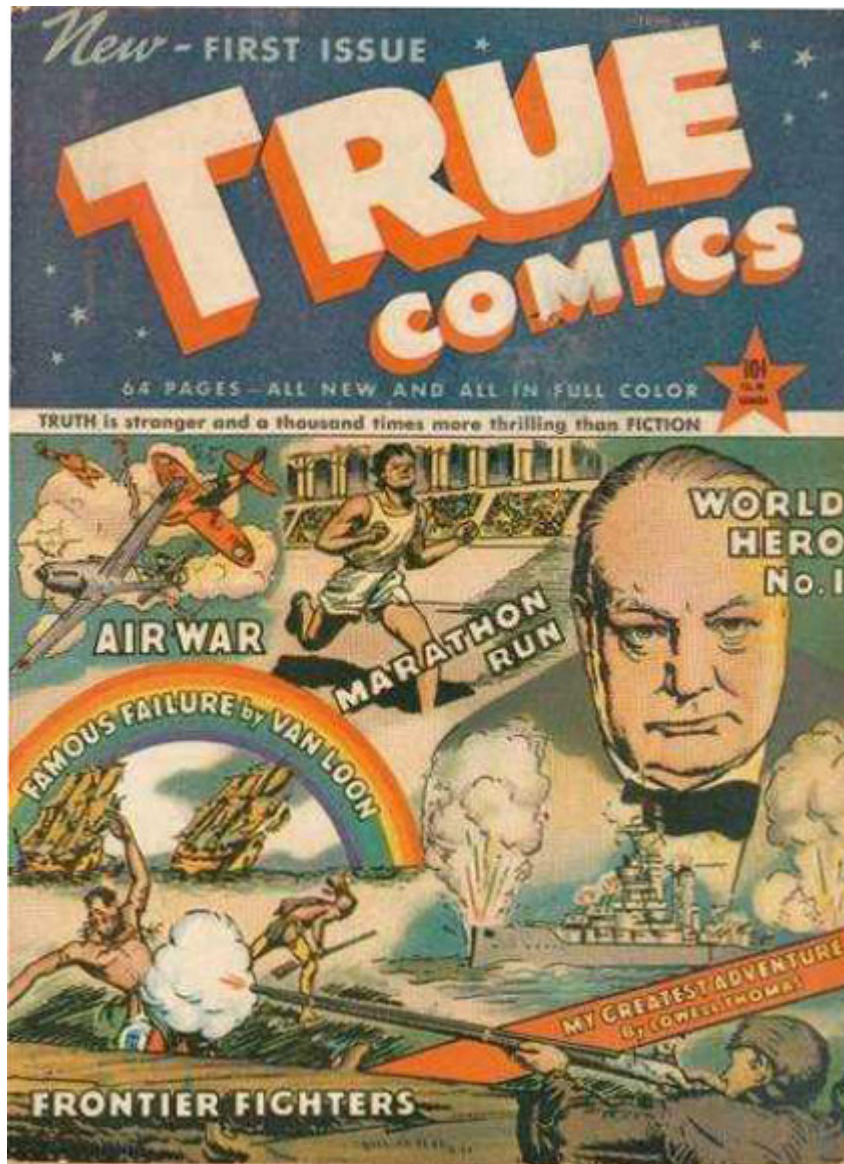
they went into boxes and stayed there as we entered our late teens and shifted our reading to hard cover books and adult literature. Our mother, fortunately, had neither desire to clean up the house nor any prejudices about comic books so they were always safe. In this we were quite lucky because there were two great enemies of comic books. One was mothers who saw them as trash to be discarded. The second was a psychiatrist, Frederick Wertham. I liked Wertham's books and his most interesting cases in *The Show of Violence*, but his diatribe against comic books, *The Seduction of the Innocent*, was unproven bias. He attributed to comic books violence, gang warfare, bad grades, bad manners, and virtually everything that was seen as a collapse of family values in the 1950s. The lament is frequent, and each generation has some reformer or politician talking about the collapse of family values. My fly-paper memory tells me that this is an old refrain, but it seems to resonate with a segment of the public that believes the new is bad. People have attacked, as they came into popular consumption, the novel, dime novels, adventure magazines, comics, radio, television, popular music, dancing, and rock music as the source of corruption that produces surly, over-sexed, or criminal youths. One thinks of "Trouble with a capital T," as *The Music Man* proclaims. Wertham was particularly upset over *Tales from the Crypt* which was certainly vivid in its depiction of mass murderers, sociopaths, and psychopaths. I would hate to think what his own writings, so much more explicit and filled with details (e.g., needles shoved up his perineum by a cannibalistic psychotic child molester), would have done to unstable readers if his claims were true! Few writings from the annals of the psychotic rivaled in sheer terror what I experienced reading Grimm's fairy tales when I was a child. Big Claus would hack the heads off his victims while they slept in bed, and I would have ghastly visions of him creeping by my bed in the dead of night with his ax raised above my innocent sleeping head and I would wake up in a fright with a pounding heart.

When my own children grew up some of them read comics, but they were not as popular as in my day, largely because of the competition from television. Anders, however, had a passion for two comics whose books Nedra and I would purchase whenever we encountered them at specialty

shops. One was *Asterix*, a Gaul with winged helmet whose adventures against the Romans was always witty and filled with Latinesque puns which made me admire the translators who converted the original French from this Belgian strip. The other was Herge's *Tin Tin the Detective*, also a Belgian strip. These were inventive and provided a wealth of detail in imagined countries and a great deal of pro-colonialist values, racism, and other prejudices of the day. Herge was complex. He was clearly supportive of the Chinese in their war against the Japanese, but he was, if not a collaborator, at least a docile tool for his Nazi occupiers during the war. Much of his anti-Semitic and reactionary colonialist writings in these adventures were cleaned up after his rehabilitation and the success of his Tin Tin stories which created an international market.

After Roland came to California, I offered to put his books in my library. We had added on to the house and one room was a large library which now had room for our father's books, Roland's, and my own. These found their way back to New York when I joined the faculty at Stony Brook, and after Roland died, they became part of my own library. I was worried about the yellowing of the pages and the brittleness of these comics. They were printed on acid pulp paper and slowly they would be converted to dust, as I knew when I tried to read some nineteenth century books in the I. U. library and the pages would crack and crumble as I would try to turn them. I went to a comic book convention and asked dealers what to do to preserve these. I bought the acid-free plastic slip containers for the comics, but I was told that even this would not help unless I got serious. I would have to interleave the pages with a neutralizing alkaline paper using a special press, and this required a lot of time and commitment that serious collectors were willing to do. About 1977 we had several children in college, and I looked through the Overstreet collector's guide for comic books. We had a lot of impressive comics *Walt Disney Comics*, beginning with volume 1 running for about four years; *Donald Duck Finds Pirate Gold*; early *Batman*; early *Superman*; the first encounters of *Submariner* and the *Human Torch*; and all of the early *Captain America* adventures. Roland had certainly chosen what collectors valued. I had chosen what few people wanted, and those prices were low. I took about ten of the highest

valued comics to a convention held across the street from Pennsylvania Station the following year. I moved from dealer to dealer to see how close to Overstreet prices they would bid. Most were way below. Word of mouth soon spread that there was a person selling comics that most dealers had not seen for sale in years. A young dealer and his wife were willing to buy my collection. I kept all the comics that were less than \$25 in value and sold the rest for \$10,000 which they paid in installments spread out over a year. It paid a good hunk of our tuition for our children at Yale and McGill. I liked the idea that comic books could support the cost of higher education.



True Comics volume 1 number 1 which was one of two hundred comics Roland and I enjoyed but which I eventually sold. The episode of the first submarine commissioned by General Washington is in van Loon's "Famous Failure" episode.

CHAPTER 19

DEVELOPING A CONSCIENCE

As a toddler and in my early childhood I had tantrums although I do not remember them. My brother and parents told me that this was so. I do know that I would fight with my brother over who was getting more of desserts and whether he or I cheated when we played card games. These were not over real card games but children's card games that were based on animal pictures or simple variants of Old Maid. I remember one baseball card game in which each of us considered the other a liar and no doubt I had counted incorrectly because I was the younger child and more likely to err. Sibling rivalry is as old as humanity and certainly Roland and I were not exempt from those bad feelings. At the same time we genuinely enjoyed playing together and cared about each other. I also greatly admired his many talents, and I am sure he took some pride in mine.

I was generally an honest child, but I can think of a few instances where I lapsed from grace. I was about five years old when my mother was in an antique shop, and I was attracted to a small coral necklace. I palmed it and walked out and wasn't noticed. I pretended later that day to have found it in the curb and gave it to my mother. I don't know if she ever suspected my theft. I felt guilty that I had compounded my crime with the sin of lying to my mother. It was my first recollection of the feeling of guilt and from it I learned that guilt does not go away. About two or three years later we were in City Hall Park and my mother was talking to a shoeshine man. It was a hot day, and I was leaning against his jacket and spotted a fountain pen. I swiped it. This time I kept it and said nothing. For years I would dread walking near the park and feared I would be spotted. I also had recurring

bouts of guilt in which I would imagine the shoe shine man crying that he had lost his pen.

Neither of these crimes led to any disaster that I knew of, but when we lived on E. 2nd Street in Brooklyn, I stole a nickel from my father's jacket pocket. It was his subway fare. He accused my mother of stealing it and they had had one rousing fight over it. I did not have the courage to say I had stolen it. That ended my thievery. I had learned that thinking of only one's own gain and not thinking about consequences was foolish. I did not know I was acting on Kantian principles but later in life when I first read Kant, I immediately admired his attempt to build an ethical system on reason and not on authority.

Unfortunately, my repudiation of theft did not end my lapses of moral judgment. I once found a wallet at NYU in the cafeteria. It had the person's identification and a ten-dollar bill. I walked to the Eighth Street bookstore and promptly spent the ten dollars on books. For a week my conscience nagged me, and I couldn't stand it, so I put ten dollars in the wallet, went to the registrar, got the student's schedule, waited by the door and recognized the student by the photo that was in his wallet. I asked him if he was that student. He said he was. I told him I found his wallet and handed it to him. He didn't even say thank you; he grabbed it out of my hand and moved on. I thought that was what a just world should be – restitution, no guilt, no rewards, and no need to express regrets to the person who, in all likelihood, did not know I had switched his ten-dollar bill.

NYU was a very tempting time for me because I was running into a lot of moral choices and not always handling them effectively. A friend of mine told me he could get me some scholarly books at considerable savings from a friend of his who worked in the campus bookstore. I told him I wanted a book on logical positivism by Van Mises. I paid half price for it and thought it was a terrific bargain. Then I reflected on it and realized his friend had stolen the book. I felt so bad that I had contributed to a theft that I never read the book! Guilt does strange things. Much worse was a favor I did for a friend of mine who was having a rough time doing a paper in one course. He was afraid he'd flunk and have to leave NYU. I liked to write so

I told him I'd do it for him, free. I did. I didn't feel guilty at all at that time. Another of my friends heard about this and asked me to write a paper for him and he'd pay me. He was an editor of a hobby magazine and was too busy to write a paper on Mark Twain's *A Connecticut Yankee in King Arthur's Court*. I knew this guy was smart and I knew he was a scholar. I told him I couldn't stand the book and found the plot and satire simplistic. He said write it anyway. I did. It got a C. I thought that was funny, especially when his teacher had written, "This is one of your worst efforts. Try putting more time into your essay next time."

I later did some research for the student who had asked me to write his paper on Twain's novel. He had a cigar box full of cuneiform cylinder seals and I went to Columbia's library to get out some volumes in the Bollingen series to try to classify them. It was not an easy task because I knew no cuneiform languages and my knowledge of minerals was dismal. But the Bollingen series of monographs had thousands of illustrations and I tried to match up as many of these to type as I could. I was also pleased that I did not swipe any, despite my fascination with objects that were carved by humans some four thousand years ago. As a reward for working on this, my friend opened another cigar box. It contained Roman signet ring seals. Most of them were heads of deities or Emperors or empresses. I chose instead an oval stone on which was engraved a man sitting on a goat and holding an object in each of his hands, perhaps one is a knife or dagger and the other a whip. The gray symbolized my moral ambiguity and I carried it in my wallet for about five years. After I was divorced from Helen, I took our two gold wedding rings and had these made into a ring holding that stone, using a Roman design. I commissioned an artist in the Indiana University Art Department to make it and I have worn it since as a reminder that I had a capacity to fail, a capacity to atone, and that I could convert the baser side of my psyche into a thing of beauty.

After I had the ring made, I looked up an article on gemology in the *Encyclopedia Britannica*. I learned about the lapidary's art in the history of ancient Rome. The zenith was in the first century BC, when the most artistic and prized stones were cut. The art went into a decline, reaching its nadir in the fourth century AD, when carving techniques were crude and

gems were mass produced. It is known among gemologists as “the age of idiocy.” I couldn’t think of a more appropriate reading for the stone that adorns my right ring finger.

It did not make me feel better, years later, when I read that Hugo Black, a Supreme Court Justice had ghost written papers for other students when he was a student. What it did do to my conscience, however, was important. First, I learned that atonement is a very positive virtue, something I always felt was important in the lessons of Yom Kippur that some of my Jewish friends celebrated. Unlike those who use scapegoats to carry away their sins, or seek an expunging of them through forgiveness, I felt it was important to compensate for my wrong doing. We cannot always help those who we have wronged, but we can help others, and I have made a lifelong effort to do so for the guilts that never go away. Second, it taught me the importance of redemption. I want those who do wrong to feel they have a reprieve, an opportunity to make amends, a respect for the decency that does reside in most of them and that can be cultivated in all but a few. I have given students chances to redeem themselves when I have caught them cheating. I remind them of why they are in college and of the better sense that they themselves have within them. I make them use their shame to improve their lives through better study habits and through reflection on what kind of world they wish to live in. In this I resonate with the kindly priest in *Les Miserables* who allowed Jean Valjean to leave with his stolen candlesticks. Like him, I look for ways to make the potential goodness in people fill their being.



The Schaeffer pen I lifted in Park Row I used for about ten years until I lost it. I still cannot look at an old Schaeffer pen without a feeling of guilt, as if atonement cannot wash away the stain of childhood compulsion.

CHAPTER 20

GROWING UP ATHEIST

I took after my father when it came to religion. He lived his life, after rejecting religion as a fake, without a belief in a God, soul, or life after death. This was the only life he had and like his marriage, it was for better or for worse. I never heard him pray nor invoke God for help no matter how much he was in despair or in pain. He was a decent man, very loving, and loyal. He sacrificed the potential for his personal happiness so that Roland and I would find opportunities closed to him. My mother was always aware she was Jewish. She abandoned its kosher laws and most of its rituals but she could not and would not deny her Jewish identity. She loved speaking Yiddish with those cousins who still spoke to her, with strangers, or with those neighbors with whom she was still on talking terms. She occasionally lit candles in memory of her parents. She saw in kosher salt a magic powder that purified the *traif* that abounded around us. She did not mind buying pork chops and feeding us ham sandwiches with milk. But she preferred buying her beef and chickens at kosher butcher chops. She believed there was a God and invoked God frequently if only to curse her enemies. She was proud that her father was a descendant of the high priests in Jewish tradition.

I grew up without a direct knowledge of God or religion. If it were not for my friends who celebrated Jewish or Christian holidays, I would have had no idea that religious identity and a belief in God and a soul was almost universal. This widespread faith never bothered me because I had early trusted my own reason to figure things out and I shied away from the irrational. The local churches and synagogues, to my childish eyes, were just small-scale museums that I had not visited. In my later childhood, I saw

them as places that other children were forced to attend. I wondered what it was that my Jewish friends learned there and when I did ask, it didn't make sense to me because they said they were learning to read aloud, in Hebrew, words that they did not understand. I shuddered when I saw my Catholic friends smudged on the forehead on Ash Wednesday and until they filled me in on what they were doing I would tell them in innocence, "You have dirt on your head."

I first got curious about religion as an academic subject when I encountered books in my father's library. I read the Bible stories in Henrik van Loon's *Story of the Bible*. He wrote in an engaging style and his pen and ink drawings had a sketchy simplicity to them that allowed my mind to imagine in more detail the stories he told. In elementary school when we had library reading periods, I would often pull-out books on Egyptian, Greek, and Roman mythology. It was slow reading and the names of those gods and goddesses were not easy to absorb, let alone pronounce, but I kept at it, charmed by the stories of Icarus and Daedalus, the labors of Hercules, the images of Pegasus, fauns, and minotaurs. I loved the depiction of hawk-headed humans, the sacred cat, Bubastis, and the image of the sun in a boat or a chariot being driven across the skies. My library teacher was not impressed. She counted the number of pages I recorded on my reading card and told me that she was giving me a D, because if I read that few pages each week, I must be spending all my time chatting and wasting time instead of learning. "Maybe this will teach you to read." Her admonition did not teach me to read faster, nor fake the number of pages I read, nor switch to picture books with fewer lines of text and less difficult words to read. Instead, it made me think of her with contempt and it introduced me to another of the injustices the world metes out to the innocent.

Those books and van Loon's Bible stories were one and the same to me. I learned to regard living religion and ancient mythology as superb works of the imagination. When I entered my teens, I began receiving invitations from my Jewish friends to attend the bar mitzvahs of their younger brothers. In those days there were no special ceremonies for the girls who turned 13, just as there was no tradition of gift giving or celebration of Chanukah as a rival of Christmas. My friend Arnold Koslow invited me to his middle

brother's bar mitzvah in an Orthodox synagogue on Pennsylvania Avenue. The women sat upstairs, and the men and boys sat below. It was a very democratic ceremony, with people talking while the shamos or reader of the selected prayers and scriptural commentary attempted to make himself heard. He would sometimes slam his book on a wooden rail to bring the congregants back to attention. It was when the torah was brought out that a hush fell, men in the aisle would stand and touch the scrolls with their prayer shawls, and the bar mitzvah boy would have his moment of triumphant reading, suppressing his stage fright and fears of forgetting his lines. At the end of the ceremony the women upstairs would shower down wrapped candies and the little boys seemed to emerge in a wild eruption, heaping on top of one another near the alter as they gathered the bounty of this manna from Heaven raining on their heads. The adult men went to the back of the synagogue and drank their shot glasses of schnapps.

I sat there like an anthropologist, drinking in the details and rituals and in awe at the variety of ways people found happiness through their religious practices and their connection to a distant past. A few years later, when I was at NYU I had an apostate Catholic friend, Lou Wall, who mocked his background with the pain and rebellion of a James Joyce. He revealed his ambivalence by telling me that Protestant ministers were a joke because their seminary training was inadequate compared to what a priest had to study to become ordained. At the same time he felt that effort was foolish because the Church was the antithesis of all the freedoms he loved. We were once walking in the West Village and came upon a Catholic church. "Come on in. I'll show you what it's like." Lou was only mildly drunk with a few bottles of beer in him. We sat there for a while in the pews, and I looked at the old women lighting candles and every once in a while someone would go up to the altar, kneel, and make a sign of the cross. Lou began to mock these worshippers in a low voice. One of the priests was rolling a heavy object down the aisle; it may have been a stand on which a prayer book was placed. As the priest rotated the heavy base, Lou would let out an audible grunt. Soon the parishioners began staring at us and I finally told Lou we had better get out fast or the cops would soon be descending on us. It would be many years before I saw the beauty of a Catholic service.

I began reading a variety of books about religion. I got interested in this through my courses on Medieval and Renaissance history. I read Saint Francis's *Fioretto* and was astounded by Brother Giles' greeting of King Louis IX. They embraced and kissed, each looking into the eyes of the other and seeing the universe within. This amazed me because I was reading, about the same time, the *Biography of Sri Ramakrishna* by Vivekananda, one of his disciples. In it I recall shivering with delight at the image of the baby Krishna whose mother looked into his mouth as he yawned and saw the universe. I realized that just as there were common events and deities in Greek and Roman myths, there was very likely a connection among the mysticism of Saint Francis, the mysticism of Sri Ramakrishna and the Hindu myths he told his disciples. I wondered if this mystical feeling was one that was universal and evoked by will or if it was limited only to a few holy persons. Whatever mechanism was involved, I did not believe this was revealed by a state of religious grace.

My opportunity to experience a mystical happening came to me at 217 Broadway where I was working one summer as an elevator operator. To keep all the elevators from moving up or down at once, we followed a procedure to prevent this. If I reached the top floor, I would not take on customers but would move up to a holding position with my lights off and I would look through the bronze gate and wait for the elevator car next to me to be just one floor below the top. I would then start my descent. During the active hours when people come to work or go to lunch or go home, there wasn't much of a wait. But in the off hours I had to wait two or three minutes before a car next to mine would begin moving its passengers up. On one such occasion, I felt my fingers fuse with the bronze of the gate and I had a sensation of being at one with the universe. Like Ramakrishna in a state of satori or Brother Giles embraced with Saint Louis, I had what I thought was a mystical feeling. The car next to me, however, had arrived, the vision dissolved, and very quickly I was again taking in passengers and enveloped by a more familiar material reality. I felt like Scrooge dismissing his Christmas dreams as so much undigested gruel.

I first learned about Unitarians from one of the passengers, Mr. Downes. He invited me to a service in midtown Manhattan. It was a curious

experience because at the base of the lectern in front of the altar was a bust of Gandhi. The service was essentially that of a philosophy class with occasional hymns. I wasn't very impressed and wondered why Mr. Downes wasted his time that way when he could just as easily take a course. Except for Lou Wall's curious presentation of his church, I kept away from church services during my NYU days. I much preferred reading about religion than experiencing it through group observance, which made me as uncomfortable as watching soldiers march. Anything organized and carried out by mass obedience or acquiescence struck me as stifling to freedom. I had even felt that way in the auditorium sessions in elementary school when we had an obligatory prayer and heads bowed all around me and I would be standing erect and unbowed, like William Tell, unwilling to doff my hat to authority.



William Blake's portrayal of Job and his "comforters."

I genuinely loved reading the book of Job and Ecclesiastes because I thought these works raised fundamental themes about the human condition. I admired Job's questioning God himself in asserting his innocence and lack of arrogance. I disliked God intimidating him with one-upmanship, asking

Job “Where were you when I created the leviathan?” It takes guts to confront God appearing in a whirlwind. It was just foolishness for Job’s acquaintances to assume that Job in some way had irked his God and thus suffered catastrophic losses. Whoever authored the book of Job realized that most people were ready to conform and feared questioning the most important issues of our life. I disliked the tacked on ending of Job being rewarded (certainly not compensated) with material and personal happiness for the deaths of his children and the physical and psychological torture to which he was submitted.

At Indiana University I was immediately at home with my mentor, Hermann Muller. He was an atheist, an active humanist, a person committed to addressing the injustices of society, and a scientist who did not fear criticizing governments for policies that harmed the health of humanity. I felt like the ugly duckling that discovered he was a swan.

CHAPTER 21

AMERICAN MUSEUM OF NATURAL HISTORY

My favorite museum was the American Museum of Natural History. I probably went there hundreds of times during my childhood. It was free, fortunately; no voluntary guilt-inducing recommended donations were asked of the public. It served the poor and the rich as well as the out-of-town visitor. We went there almost every week usually taken by our mother. I loved every part of the museum and even as a child did not develop museum fatigue. I loved the dioramas. There was Peter Stuyvesant in lower Manhattan in the late 1600s standing with his peg leg and cane. There were the ice age mammals protected against the blowing cold with their shaggy fur. I looked at these dioramas with wonderment at the artistry of those who made the foreground fade into a painted backdrop.

I looked at the minerals in their darkened rooms, glowing and showing off their brilliant greens, reds, and oranges. The crystals were so sharp edged, looking handmade rather than a natural formation. At the South entrance there were many large meteors, long since removed and shifted elsewhere in the museum or stuck in hidden storage. I sat on one large pock-marked meteor that had been retrieved from glacial ice in Greenland. It was like a nugget of iron, and I thrilled that it traveled millions of miles in space before it was drawn to our planet and blazed in some night sky before it smashed into earth. This piece had survived.

When we were about six or seven, I remember our being greeted by a person we called Mr. Smith. He was white haired, and elderly and he seemed to always be in the museum when we came. He may have been an

employee but decades later when I inquired from a curator I knew there, no one seemed to know who he was. Mr. Smith liked to tell us about the exhibits, and he had a grand-fatherly way of relating to us as children and fed our curiosity with his lore.

In the main, West entrance, Teddy Roosevelt was charging on his horse on the steps, and inside there were bronze lacquered statues of stalking lions sculpted by Malvina Hoffman, about whose life I read years later in high school in a book about ten modern Americans. Facing these lions, spear in hand, were pygmy sized black hunters, brave, skilled, and ready to let loose a lethal hurl that would find its mark. A few corridors away were the trophies of Peary's trips to the North Pole and I looked at the snow shoes, leather clothing, sleds, harpoons, and fishing gear of the Eskimos he met on his route North. Long before I traveled to other continents, I was traveling in my mind, seeing a world without politics, without written history, without cities, and filled with exquisite works of craftsmanship and exotic utility.

One exhibit used to give me moments of terror. It was a pearl fisher whose leg was caught in a giant clam. I had visions of him, drowned and slowly dragged into the mantle as the fluted shells slammed shut and his body would slowly be digested. The old dinosaur exhibit was also a pleasure for us as we would look up to the towering skeletons and imagine their dagger-like teeth slicing into the flesh of less fortunate reptiles they encountered some seventy or more million years ago. I roamed through the exhibits of mollusks and insects and treasured each new fact I gained. This was the *Encyclopedia Britannica* in three dimensions, and the black and white photos and line drawings I had lovingly examined at home were now there before me separated only by the glass in the cases.

Years later I would bring students from the Honors College to see new exhibits at the Museum and while I was teaching at UCLA and made an occasional visit back to New York, I would try to find time for at least one visit to the fount of knowledge that had nourished me as a child. The most sobering of these trips was an exhibit on Zaire. My class had read Conrad's *Heart of Darkness* and we also read King Leopold's letter depicting himself

as a bringer of the gifts of civilization to a savage continent. At the exhibit those items were displayed along with Mark Twain's satire on Leopold's letter. It was a painful exhibit. The Museum had been given special privileges by King Leopold, who donated thousands of Africans to serve as porters and guides as the museum staff amassed hundreds of boxes of artifacts and brought them back to the Museum. Now, some 75 years later, those objects were being returned. The religious icons and carvings, the gold jewelry, the local domestic deities that watched the households, and the musical instruments that celebrated the rituals of daily life were brought back and in exchange information on their history and photographs, then and now, reminded us of the indifference we felt for those colonized and the ease with which we plundered what was not ours to take. The hidden history of natural history hit me, and an innocence of my youth yielded to the bitter-sweet world of guilt and atonement that is so much my own life experience.



An early (post card) view of the American Museum of Natural History about 1920.

CHAPTER 22

IQ TESTS

I took IQ [intelligence Quotient] tests at least three times when I was in public school. The first was about second grade, the second, about fourth grade, and the last was about seventh grade. Each time my IQ went up from 116 to 135 to 149. My brother Roland's IQ was 147. How do I know? I looked it up. This may seem strange because the IQ was considered confidential and even parents were not given the IQ scores by teachers. The IQ was supposed to be a guide for teachers who could use it to judge how fast a student could learn. It was also used to place students in faster or slower classes. Conscientious teachers could then give added work to challenge those with high IQs and extra help and time to those students with lower IQs who found the work too fast paced or too difficult.

I remember taking the second IQ test. Our teacher told us this was a very important test, which would not appear on our report card, but that it would follow us for life so we should do our best. I remember the weirdness of it. There were black and white line drawings with incomplete pictures of faces, blocks heaped up in unusual patterns, rows of objects in which we had to identify what did not belong. These were mass IQ tests and the teacher graded them using a stencil under which she placed our answer sheet and would determine our scores. We never knew what happened after the test and any students who were absent that day had to take the test anyway in a special setting when they came back.

The assistant principal in our high school would select the brightest students and we would sort the record cards of the incoming students by IQ. Those with 130 and up went into the R or "rapid advance" classes. Those with IQs below 90 were placed in the S or "slow classes." The rest of the

students were assigned regular sections. We were never instructed to look for contradictions based on performance, and I did not know if that was done separately, after our first cut, by the assistant principal himself. A few of us were allowed to file the records alphabetically in the main office. We immediately looked up our own IQs and those of our friends.

Mr. Cohen told me that in his department there were a small subset of truants who were assigned to a special class that never met. Instead they went to the basement and played billiards. The teachers called the course, "Problems in democracy." It helped keep order in the other social studies classes because these were students who were disruptive when they did come to school and the school could not legally expel them. I was well aware from my traumatic encounter with such students in ENY JHS 149 that these students existed.

At NYU when I took an introductory psychology course, my second semester instructor was an enthusiast for IQ tests. He believed we had a general intelligence and the evidence for it was incontrovertible. He felt every human behavior could be measured quantitatively by use of multiple choice or true-false tests and true to his beliefs all of our examinations were true-false tests. I had little reason to doubt him. In the early 1950s the belief was virtually universal in and out of the academic world.

My doubts grew in the 1960s. I learned that some students with very high IQs did poorly in school. One of my colleagues at UCLA felt inferior because he too had looked up his IQ in high school and discovered it was 108. I had access to all my students' IQs because it was entered on their application transcript, and we got a copy of it. The student did not see the second page of the transcript, which included the IQ score, that was sent to the university. I learned that there was no correlation between the IQ score and the quality of research work my graduate students did. I also learned, when I was premedical advisor, that the best indicator of who got into medical school among the students I interviewed was their IQ score. I had prepared a report at the end of my first year as premedical advisor to see what factors led to success and what led to failure. It told me that what IQ measured was academic success, not genius or creativity. Medical schools

selected then, as they largely do now, for students who are likely to do well in medical school.

I read Lewis Terman's books on the *Genetic Studies of Genius*. He had followed these gifted children for decades and long after he died the students were followed by later generations of psychology graduate students at Stanford University. It didn't make sense to me that Da Vinci had a lower IQ than Francis Galton or that the author of *Pilgrim's Progress*, John Bunyan, had an IQ of 105. If Catherine Cox's study of these "Palaeo-IQs" got approval from Terman, it made me question the legitimacy of his California study of the 1000 most gifted children in that state selected from the class of 1910-1911.

The clincher for me was the profoundly insightful book of Victor and Muriel Goertzel, *Cradles of Eminence* (1965). This study of eminent American individuals (those who had two or more biographies written about them) convinced me that creativity and success in a field had less to do with high IQ and more to do with focus, intense commitment, creativity, and the idiosyncratic way these people entered and developed a field. People with high IQ ended up in Phi Beta Kappa, but the nerdy geniuses who became household names were often sour on school, lost in their own dream world, unhappy with their family lives, scarred by the traumas of their upbringing, and driven into compulsive behavior.

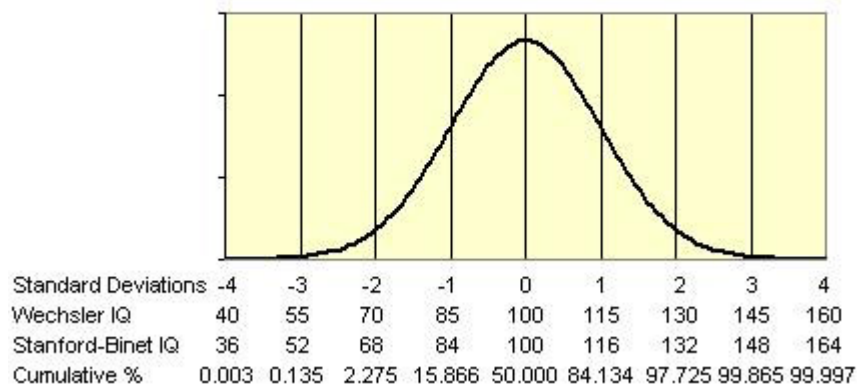
This was brought home to me during the stormy late 60s at Stony Brook and students were in revolt over racial discrimination and a stupid war waged by old men with young men's lives. I was confronted in my office by a delegation that included one faculty member, several graduate students, and a few undergraduates. They saw on my syllabus for biology 101 that I included a discussion of IQ tests. They wanted to know what I would cover. They wanted "equal time" to present their view. I gave them half my lecture. After I introduced them to a somewhat hostile class feeling inconvenienced by an oncoming political diatribe, I listened to an African American PhD candidate who was writing her dissertation in the Psychology Department. She told us how her mother came to school with her when she was in second or third grade and refused to allow the school

to assign her daughter to a slow class. Her mother was told that her daughter's IQ indicated she was retarded (below 75). She told us that her mother said, "My daughter is not retarded. I know my daughter and I know her skills." This young woman was grateful that her mother had the courage to fight for her rather than to submit meekly to authority and the tyranny of a test score. Frequently, slow classes became warehouses of failure rather than classes designed to bring students back into the mainstream.

There is a long history of abuse of IQ testing. It has leant itself to racism with a significant portion of white humanity looking on black humanity as deprived of sufficient numbers of those genes that give the whites their alleged intellectual advantage. At best the attitudes of those who believe this are condescending or reflect a fatalistic reliance on bad news that is truly measured by these tests. It may be a fallacy that there is a single general intelligence that can be summed up in a single number. It may also be a fallacy that the differences in IQ scores are largely genetic in origin. It is not a fallacy that people differ in their accomplishments or that tests can be used to predict, with reasonable accuracy, academic success.

IQ Comparison Site
 www.iqcomparisonsite.com
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IQ Normal Curve



The IQ scores of a tested population form a bell shaped or normal curve (sometimes called a Gaussian curve). These are subdivided into standard deviations (vertical lines). Assigning verbal ratings to these deviations vary with the psychologists using them. Some start genius at 130, others at 145. Normal IQ is 100 + or - 15 (i.e., 85-115). I was pleased seeing myself on the outer limb of the curve although I rarely considered myself a genius. I always considered creativity separate from IQ scores.

CHAPTER 23

NEW YORK UNIVERSITY



I applied to Indiana University, Columbia, NYU, CCNY, and Brooklyn College in my senior year in high school. Indiana University accepted me and gave me a \$200 scholarship (good enough then to pay the tuition) but I declined their offer because I could not pay the dormitory costs. Columbia accepted me but I did not get a scholarship covering full tuition so I declined, much to my regret since that was my first choice based on all that Mr. Cohen had told me about his experiences there as an undergraduate. NYU offered me a full-tuition scholarship, the Charles Maxwell McConn scholarship and I withdrew from CCNY and Brooklyn College, which were my safety schools, if I hadn't gotten a scholarship to a private school. I didn't know anything about the McConn scholarship until my home room teacher mentioned to my class "I thought you should know something about Elof. It is rare but not out of the ordinary when a Jeffersonian wins a full tuition scholarship, but Elof won the Charles Maxwell McConn scholarship to NYU. In today's *New York Times*, it cites Elof's award as going to the student who heads the list of the entering class." I was thrilled by that good news and so was my family. Years later my brother Benny told me that he

carried the clipping in his wallet so he could pull it out and have bragging rights for his little brother.

I took a battery of tests at Washington Square College for the orientation week and lined up my courses. My advisor told me that my psychological testing score indicated that I was very insecure. I had no doubt that was the case because I would answer the questions truthfully and if it asked which would I prefer doing, go out with my friends or walk alone with the wind and rain blowing in my face, I unhesitatingly chose the latter, although I knew this would mark me as a nut case, but I was curious about what I really was thought to be on such a personality test. I also delighted to see an IQ score they assigned which was sixteen points higher than when it was last measured when I was about 12 or 13. The 165 was upside down and, of course, not revealed to me, but I was used to reading things upside down. The only fakery I did was where it listed religion and I was afraid that declaring myself an atheist might not sit well in a society that sometimes ranked atheism close to murder among the major evils of the world. I put down "Lutheran" and, of course, received in the mail an invitation to meet the Lutheran pastor. He was a wise old man, and when I explained why I put Lutheran down when I had not an inkling of Lutheran beliefs, he told me not to worry or feel obligated to meet other Lutherans, but I was always welcome to come.

I quickly discovered that my habits at Thomas Jefferson were not sufficient to do well at NYU. In high school, I would listen attentively to the teacher, and I had an excellent memory so it took only a modest review before the exams to score high. Except for my math course, where I would do the homework when it was due and procrastinate otherwise, my other high school courses were minimally demanding. I soon found myself writing an essay a week for the NYU composition course. That was fun. I was paying attention in history to the lectures on Medieval and early modern European society, but I left reading the text for the night before the exams. In calculus I figured I'd wait a day or so before the exam and since there were few homework assignments to turn in, I trusted my memory and power of concentration. I did the same for chemistry and zoology. On my first calculus exam I got an F. It was a new feeling. My face felt numb as I

looked at the grade. It was as if I had received a slap. I went to my teacher, Dr. Johns, and told him. "I need help." He looked at my exam and then offered a prescription. "Do these two examples from your text. Instead of just solving them, I want you to write in complete sentences what you are doing for each step in your solution". I did so and turned these in to him. He read them and smiled. "There's nothing wrong with the way you think. You're lazy. Do your homework and you'll be all right."

NYU was a commuter school. A few out of state students lived in apartments the University located for them. At noon on nice days we would head to Washington Square Park and eat our lunch sitting in the fountain. Some mornings I would see Eleanor Roosevelt walking her Scotty, Falla. She lived on the West side of the park. Along the North end I would pass the lovely brownstones that still remained from the mid nineteenth century. One eccentric and well-dressed old man used to walk along pulling tufts of cotton from a cardboard box and blow them into the air. Chess players loved to sit in the shade on the benches and challenge the students to play them. We would buy our sandwiches in an Italian delicatessen and then relax munching and talking until it was time to leave the fountain and return to class. Once we watched in horror as a woman had her infant crawling on the fountain basin and sucking up dirty puddles of water. We shouted at the mother. She told us to mind our own business and that she was building up her child's immune system!

I loved my history and English courses. I majored in biology and minored in history and was an ex-officio English second minor. I soon joined the NYU literary magazine, *Apprentice*. There I met an Irish American poet, Lucius Wall. Another biology major, a premed, Norman Cohen, had introduced me to *Apprentice*. He sat next to me in the Comparative Anatomy class, and he always saw me reading unusual books and we took an immediate liking for each other. Helen Zuckerman, Leonard Michaels (the only one of us to succeed as a writer), Tom Reed, and Bruce Bendow were humanities students, most of them majoring in English. The *Apprentice* was an annual magazine, and I soon became managing editor and learned how to proof read, how to work with a printer, and how to put a magazine together. We wrote to Ezra Pound and William Carlos Williams,

and they wrote replies about what we needed to do to become successful in our writing. We got free tickets to the uptown YMHA which had a poetry series and got to hear Dylan Thomas read poetry and put on the first performance of *Under Milk Wood*. Thomas passed us in the entry way as he came in, roaring drunk, and held by the arms by two of his drinking buddies.

I was, as predicted in the orientation psychology test, immature. Once, Lou, Norman, and I went to hear a talk in the Physics Department on Galileo. The invited speaker discussed Galileo's experiments on falling bodies and mentioned the mythic story of the leaning tower of Pisa. As soon as he said that Galileo never dropped his balls from the edge of the tower, we cracked up and went running out of the room. Worse yet, we were sitting in the front row and could not escape the glares of the faculty who didn't find that funny.

I was virtually the only biology major who was not a premedical student. This was frustrating because there was both a premedical club and a biology club. The biology club was putting on films showing appendectomies and I was frustrated that genetics, development, and evolution were not being discussed. I was hopelessly outvoted when I tried to bring a change and only went to an occasional meeting after that, such as one put on by the NYC coroner who did a slide show, "Death in all its gory (sic)," showing photographs of suicides and murder victims as they were taken at the time the police arrived. He showed one couple who tied the husband's suspenders around their necks, rolled off opposite sides of the bed and hanged each other. He showed a mob figure riddled with machine gun bullets. He showed a body fished out of the East River with its soft parts eaten away by crustaceans. He gave us close-ups of throats that were slashed by razors, the suicides producing several "hesitation marks" before they went through with their ordeal. These weren't the art pictures like "L'inconnu de la Seine;" these packed a wallop of reality.

I sometimes went to Lou's house. He lived with his brother Jim who followed him to NYU from Colorado a year later. They saved their beer bottles and lined them along the baseboards of their room. They lived on

Horatio Street. I once stayed over and got drunk for the first time in my life and was making scuffed arcs on the wall with my shoe as I flopped around on their bed. Bruce would get violent when he was drunk and once the police came when he threw a flower pot from the fire escape. Lou wrote magnificent poetry and quickly a feud broke out between Lou and Norman on who was the better writer and who should be the editor in chief. The arguments were long and ferocious as student passions often are over minor things that seem so important at the time. They decided to settle it by renting a boxing ring in an athletic club near the university and they got into their trunks and put on large boxing mitts and for three rounds pounded away at each other, finally collapsing in each other's arms like Gilgamesh and Inkidu, some five thousand years earlier.

I enjoyed my four years at NYU. I had many great teachers, got a first-rate liberal arts education, learned that I hated chemistry, loved biology, found every history and English course a joy to take, and ended up discovering that I had an emotional life and a social life outside the classroom. To the great disappointment of my family, my teachers at Thomas Jefferson, my teachers at NYU, and, perhaps, to those who awarded me the McCann scholarship, I ended up with a 3.1 average. But I had a life!



The Washington Square arch is behind the fountain. On the right are the buildings housing the Washington Square College campus of NYU when I was a student there in 1949-1953.

CHAPTER 24

TEACHING AND LEARNING AT NYU

When I first saw Mr. Davis, I didn't know if he was white or black. His hair was tightly curled but his skin color was a light tan, like a southern Italian's. He transcended race in the classroom. His voice was richly resonant and his mind brilliant. He was a graduate student finishing his PhD in English. Charles T. Davis was a gifted teacher. He made composition come alive through the works we read and the themes, as we called them, that we wrote. Mr. Davis made each of our best efforts sound like the great short stories we read. We would sit there in amazement as he analyzed one of our own writings. "I did that?" He made us feel like celebrated writers and he took our best efforts and had them printed up in a small booklet, *Good Themes*.



Charles T. Davis got his PhD at NYU and became a founder of black studies programs at Princeton and Yale.

Mr. Davis liked my themes and encouraged me to write. He would ask about my progress whenever I ran into him at the university. If I was looking harried or depressed, he would ask me what was wrong and take me across the street to Chock Full O Nuts and we would have coffee and he would find words that would once again inspire me. He invited another student and me to visit his family in Harlem and we went to one of the projects near the East River about 126th street. He had just become a father and I brought a gift of a silver rattle, which he and his wife were so pleased to have for their child. I was happy, too, that some books he needed on Strindberg were in my father's library and he borrowed those to read.

In my junior year I was very disappointed with the quality of my courses in the sciences and the lack of interest in any of my fellow students in the

fields of biology I adored – genetics, embryonic development, and evolution. I loved what I was reading in my English and history courses and when I ran into Mr. Davis I told him I wanted to switch and become an English major.

“Elof, what have you been reading lately?”

“I read George Gaylord Simpson’s *The Meaning of Evolution*, Hermann Hesse’s *Steppenwolf*, and Harold F. Blum’s *Times Arrow and Evolution*.”

“I don’t think you should switch. Most of your reading is still in the sciences. You love science, Elof. Stick with it. When you get to graduate school, you will find your experience is very different. All your fellow students will care for science the way you do.”

Mr. Davis was right. I admired his skill in helping students who were troubled. He realized that students were frequently confused and needed the insights of those who had seen a lot. I learned from him to reach out to my students, to take them to lunch, and to share the failings and insecurities of my youth so that they would know that I too felt as they did now.

Very different in style was Professor Wallace K. Ferguson. He taught the first semester of the European history course. I loved his methodical lecture style. He made the past come alive. I signed up for his advanced course, “The transition from medieval to modern society”. He was a Renaissance scholar, but he felt the word was misleading. The Renaissance was not a rebirth of the past; it was a transition period between two civilizations. He smoked his pipe as he lectured, usually sitting down at his desk. He was silver haired and had a trimmed mustache; he spoke with a slight Canadian accent. He had us read two books a week and we would compare them, finding how they connect to one another, in our papers. He was very precise in his standards, and I remember receiving an A minus minus, on one of my papers. Another he liked so much he asked me for a copy to keep. Ferguson never taught from a text. He drew out of a lifetime of scholarship as a historiographer, a scholar immersed in medieval and renaissance history

and literature. He brought recordings of medieval music for us to listen to in class. He took us on a field trip to the Cloisters to see medieval art. He knew of my interest in the history of science, and he invited me to go with him to the history of science meetings that were held at the Metropolitan Museum of Art and I heard George Sarton speak. Ferguson lived history. When he talked about Chartres Cathedral or Brunelleschi's domed cathedral in Florence, he was there, and he gave those added insights that no text provides. I learned from him the pleasure of scholarship for its own sake, the joy of interpreting the past.

None surpassed Davis and Ferguson in my undergraduate experience, but I had many excellent teachers along the way. In my first-year zoology course, I had as my teaching assistant, Thomas J. King, then studying embryology for his PhD. He saw me hacking away at a cat's body and I would call him over whenever I ran into something strange. I opened the esophagus and called him to my desk. "What's that?" It looked like a bunch of detached varicose veins. "Ascaris worms," he replied. The happy horrors would engulf me, and I would go on dissecting hoping the formaldehyde did its job and I would not end up looking like the illustration I had seen in the *Encyclopedia Britannica*. Finally, I was done. It was a loathsome job. I was almost as squeamish as my father, who said he was never able to put a worm on a hook when he was a child. Suddenly I felt a tap on my shoulder. Mr. King smiled. "Elof, the girl at the end of the table is uncomfortable doing this dissection. Will you go over and skin her cat?" He knew his students. I much appreciated that he tried to make a scientist out of me. We talked a lot about science and he was happy to see someone interested in a PhD. Later King would team up in Philadelphia with Robert Briggs and they would work out the techniques for nuclear transplantation in frogs and shift cloning into a reality. Their work was the basis for the mammalian cloning that would not take place for another thirty years.



Thomas J. King (1921-2000) was my laboratory teaching assistant for my freshman biology course at NYU. I enjoyed his gift for teaching (personal attention to his students) and his love for basic science. I was pleased he teamed up later with Ralph Briggs and did pioneering work in nuclear transplantation (cloning). I am sure his recommendation helped my getting into Muller's laboratory.

Not all my teachers were good. For every Professor Middlebrook in English that made a class come to life, there was a Professor Mouquin in organic chemistry who mumbled incoherently, often drunk, with a hip flask in his back pocket. When he got angry at our noise level or opacity in understanding him, he would fling an eraser at us. His highest curve was 35. His lowest was 8. We laughed when we took his exams because neither an A nor an F student would have a clue what grade they would have. I was ridiculed by my chemistry teaching assistant for the laboratory reports I turned in, and on one he wrote "And as the sun slowly sets on lovely Tahiti..." reminding me that I should suppress any vestige of my personality and pretend that what I saw and wrote was the objective truth stripped of all human feeling and values. I knew that my results were my results and not universal results because all my classmates got slightly different data whenever we did our experiments. The law may be true, but the variation is real and I didn't understand why he wanted to ignore it in our writing. Another teaching assistant recognized my loathing for organic

chemistry in several ways. Once I left a Bunsen burner under a flask of ether and he left, rightly so, a note “Lovely F, for idiocy.” Later that semester, as I dragged myself around the room, despising cook book experiments that seemed so pointless, he called me aside and said he was concerned about me and wondered if I should go to the student counseling office and see a psychologist. I denied that I was on the verge of becoming non-functional, despite the reality of his assessment, and made an effort the rest of the semester to look busy and engage in small talk with my lab partners.

I sometimes found more pleasure learning off campus. My friends from Thomas Jefferson, Arnold Koslow, Sam Fillenbaum, and Leon Landowitz would meet me on a Sunday morning at a museum or the New York Public Library or at their campuses (Koslow and Landowitz were at Columbia and Fillenbaum was at CCNY). We would find an empty room and have a meeting, each of us taking a turn on a given week, to discuss what we were learning or what good book we read. We called ourselves the Palimpsest Society, Leon choosing that name because we liked to think we were going to rewrite the past through our efforts to discover the new. After our meeting we would go to the Automat and have coffee and cake or pie to enjoy our company. Sometimes Arnold or Leon would invite a faculty member from Columbia to join us.



Ten years apart. On the right I was visiting the Bronx Zoo with friends about 1950. On the left I was about to begin a position as an Assistant Professor at UCLA.

Genetics was the field I wanted to go in. Professor Morris Harnly was near retirement, lectured at 6 PM on days when I would be up before 6 AM and it was right after dinner. My pen would trail off a few minutes after lecture began. He had a flat delivery, and his notes were old. I depended on my text to pass the exams and pulled a B. He was the only one teaching a genetics laboratory course, so I took that, too. I loved it. He gave us our stocks of fruit flies, a booklet of instructions, a key to the laboratory, and we were free to come in 24 hours a day whenever we needed to. I did the experiments with pleasure and enjoyed isolating an unknown mutant and mapping it. I wrote up my results in detail and turned them in. He rarely showed up. Once in a while, a teaching assistant came by. I was usually the only one there. Many of the students told me I was a fool wasting my time for a professor who didn't care about his own course, and they used a slide rule to estimate the results for their experiments. Eventually I got to see Harnly, and he was surprised when I told him I wanted to be a geneticist. He was also pleased when he finally got to read my laboratory experiments

and I am sure his letter helped a lot when I finally applied to Indiana University and sought to work with Hermann Muller.

GOOD THEMES

Volume 2, Number 2

December, 1949

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GOOD THEMES is published twice a term by the English Department, Washington Square College, New York University, for the students in English 1 and English 2. Manuscripts are selected by the instructors of these courses.

My English instructor, Charles Davis selected one of my themes for inclusion in NYU's Frosh English journal "Good Themes". It was my first publication since high school. My critique was a humorous review of Albert Halper's essay on Chicago and New York City.

CHAPTER 25

MARRYING HELEN

I first met Helen Zuckerman (1932-1975) at the *Apprentice* office and she was one of Lou Wall's girls. Helen was a committed poet and like me she had grown up in Brooklyn where her parents lived. She had started at Midwood High School but hated it, especially when a school psychologist told her that normal people don't fantasize that they want to become poets. Her parents sent her to Woodstock High School in Vermont. Her father, George, was a failed engineer who had started out as a Cooper Union graduate with a great potential for the oil industry. An oil market crash in the 1920s made him leave Oklahoma and return to New York. There he tried his hand as an inventor and came up with two children's inventions, a Monkey Marker to keep tab of children's heights and an Upsy-Daisy toilet seat that was convenient and connected to the back of the toilet lid. Those royalties kept them reasonably middle class during the Depression years. Helen's mother, Rose, was a school secretary at the time Helen was going to college.

Helen was attractive and petite with black curly hair and a somewhat brooding personality. She was also partially deaf from an inherited condition, otosclerosis, that also affected her father. In those days hearing aids were ungainly and very noticeable so Helen did not wear one. I liked Helen and thought she was a very talented poet. She read poetry voraciously and had an immense collection of books by poets. Lou was juggling two girls at the time. One was Phyllis who worshipped him and who was very jealous of Helen. Helen tolerated Lou. She was her own person and I believe her main interest in Lou was through his poetry

because Helen was not fond of Lou's madcap humor, his male friends, or his constant boozing on beer.

All of us in the *Apprentice* were friends as well as rivals and we admired as much as we envied each other's talents. Our passions ran deepest when we elected the editors each year and there were sessions in which we would scream at each other and accuse each other of incompetence or treachery until four in the morning. The lady who looked after the activity office told me this was not at all uncommon; it had to do with our age and our passions.

Lou enjoyed pranks. Once he seduced Tom's girl friend while Tom was under the bed. It was a scene out of Petronius's *Satyricon*. I learned that Lou was planning to trick me. He told me I should undress in his closet while the lights were out and that I could crawl into bed with one of his girls and pretend to be him. I may have been horny and a frustrated virgin but I was never that stupid. His plan was to open the door, turn on the lights, and have the *Apprentice* staff applaud me in my nakedness and sing "Here we go gathering nuts in May."

Lou came up with plans to play a prank on Helen. He noticed that Helen would often meet a woman on the park bench in Washington Square Park. He sneaked up in the bushes behind them and eavesdropped and learned that they were having an affair. He also learned that Helen had attempted suicide by slitting her wrists over that affair. Lou hoped to surprise them with a trick in the Fall when they would be back in school, but he didn't tell me what it would be. At the time I felt both sorry for Helen and attracted to her. I also admired Lou as a potentially great poet and felt immense friendship for him. My conscience, or more likely, my sexual desires, won out.

I knew Helen would never believe the crazy stories of Lou's adventures. He would easily talk her out of her doubts and convince her I was just a jealous competitor who should be pitied, not believed. But I had one trump card to play. I had kept a diary for the previous year and all of Lou's adventures and his conversations about Helen were in it, including what they did in bed together. I told Helen I had something for her to read and

she took the diaries home. It was already the start of the summer vacation, so Lou and his brother were back in Denver. Helen wrote a blistering letter to Lou breaking off their friendship and I began to date Helen who was grateful that I had spared her from humiliation.

Our dating was only fated for two months because in late August I would be heading out to Indiana University. But we did date every weekend and I got to meet her parents and began feeling very much in love. We agreed to correspond.

At IU Helen and I wrote to each other every week. I told her of my love for Indiana and how much I enjoyed being a graduate student. In the Spring of 1954 she asked me if I had considered marriage. She wanted to join me at IU and asked me if I could get an application for her to become a teaching assistant in the English Department. I did so and then wrote to my father that I planned to marry Helen. He fainted. Roland and my father knew of the *Apprentice* stories because I told them everything that was going on, much to their amusement. Suddenly it wasn't funny. Helen wrote wonderful letters, and I am sure she thought the same of mine. We knew more about how we wrote and thought on paper than how we behaved or cared about each other as two human beings.

The marriage took place in a Jewish temple on Ditmas Avenue. My friend Arnold was best man. Roland got sick and threw up. My mother was on her best behavior and spoke Yiddish with Helen's grandmother. My father was white as a sheet throughout the ceremony. We took a plane from LaGuardia airport and arrived in Indianapolis and then took the bus down to Bloomington. I had rented an apartment about ten blocks from campus near the Monon Railroad tracks. We got in late that night and to my relief and to Helen's surprise, I consummated my virginity. She had been so convinced by Lou that I would be incapable of intercourse that she still believed him.

Helen got the teaching assistantship, and we gradually grew apart. She became active in her department and loved being with her fellow graduate students as much as I was active in Muller's laboratory and enjoyed being with my fellow graduate students. Few of our two circles of friends had much in common. About six months into our marriage I came across a diary

Helen was keeping. She described me as loathsome and that her marriage was a mistake. I told Helen I had read her diary and she was stricken with guilt. We reconciled and tried to find ways to share our very different worlds. We did this through two friends. Sara Frye was a geneticist with a wide interest in the liberal arts, a marvelous sense of humor, a gift for playing piano, and a woman who believed in herself before there was a feminist movement. She and Helen hit it off immediately. Helen had a poet friend, also a graduate, Jack Hirschman, who was brilliant, scatterbrained, earthy, and a poet whom all the other graduate students admired. He was like Zorba the Greek. He could talk about anything, and I found his company stimulating and friendly.

Sara's husband was a philosopher, and he did not want children, but their contraceptives failed and they had a delightful child, Mark. This made Helen desirous of having a child and for the first time since we married, while vacationing during the winter break at her parent's house in Brooklyn, we had unprotected intercourse and Claudia was conceived.

The marriage deteriorated after Claudia's birth. Helen began to feel trapped with parenting duties. I was often in the lab working on my experiments and this put a strain on our time for ourselves and as a family. Graduate school can be a powerful destroyer of marriages. Twice Helen asked to separate and twice I talked her out of it. Finally, I got a call at lab and Helen asked me to come home. "Is it about us?" "Yes." It was the end. She wanted out and said she was slowly stifling in a lifeless marriage and that if her ability to write poetry died, life would no longer be worth living.

I moved out and got an upstairs room in a gloomy house on Henderson Street. I bought a Picasso blue period print that had a woman to the left and a man with a child next to him on the right. They were on the beach with a gulf between them. I tacked it so I could see it as I went to bed or rose each morning. I promptly came down with the flu and ripped apart the sweat-soggy bed sheets as I twisted and turned in agony. I felt like Raskolnikov in his worst hour of guilt. I was recovering but was still floppy and weak when my door opened. My mother came by on her way back from Long Beach.

She had learned from Helen that I no longer lived with her. I had not yet the courage to tell my parents. I was a wounded animal still licking my wounds.



*I put this on the wall of the bedroom of the apartment I rented after Helen told me to leave. Picasso painted it in 1903 during his blue period. It went with my emotional feeling at the time. It was called **The Tragedy**. I got the print at an IU bookstore sale.*

CHAPTER 26

DIARIES

My first awareness that people kept diaries came from Dr. Sper in my high school English class. He had me read excerpts to the class from Samuel Pepys's diaries, especially his account of the great fire in London that followed a year of devastation by the bubonic plague. I was so excited reading Pepys describing day to day activities in the 1660s that I made a trip to 59th street and visited a used book shop where I thought I might find a set of Pepys's diaries. I got the eleven volume set, a Wheatley translation, nicely illustrated with portraits and etchings of that era. I had to buy it on lay away, paying the proprietor each week until I could lug home the set in a cardboard box. It was my first major used book purchase and I thrilled to reading gossipy passages of Pepys's marvelous life in Restoration England.

On January 3, 1949, I began a diary in a composition book with speckled covers. I learned to put down a richness of detail. Thus on January 4, 1949, after being elected Boy Leader of Arista, I wrote "After the others were sent outside, Mr. Lewittes said that I should improve my appearance and that I should have pressed my pants (which I did the night before, but it seems they refuse to crease) and in general that I ought to look neater, with a suit, etc. However, I shall tell him tomorrow that I had no alternative. All my wardrobe is with me when I put on my clothes, so how am I to appear in a suit with new shirt, shoes, and tie?" Or January 6 "...listened to Roland talk about the little one-eyed violinist who visited here. He calls him a filthy dog, because he has sores, came in rags, and mooched food and coffee from Momma. Sterilized the knife, forks, and spoons over the gas flame, but Roland was still skeptical."

I had about nine such composition books by the time I was a sophomore at NYU. I then got too busy to keep it up. When my NYU friend Norman Cohen discussed diaries with me, he said mine were worthless because I didn't try to explore my interior or emotional feelings and what I was putting down was just superficial junk, like what I ate, that no one was interested in. So I began keeping one that reflected my moods, recorded my masturbatory habits, my repressed homosexual erotic feelings, and dwelled on my fantasies and sour feelings for others. Lots of detail, of course, went into those and it was these diaries that I handed to Helen to break her relationship with Lou Wall.

The first visit I had back to New York from Indiana University, I visited some of my friends from *Apprentice* (those who had opposed Lou's candidacy for editor) and there was a fire going in the living room fireplace. I had taken my introspective diary along to this gathering because it had caused a lot of consternation for Lou, Norman, and others that my words might harm them with their present partners. I tore out the pages of that diary (except for a few dozen that I had saved as a reminder of my depravity) and tossed them into the flames and handed the empty covers to my hostess. I then decided that keeping a diary is dumb because it can have material that is too emotionally charged for others to read and can be damaging to me if it fell into the wrong hands.

I regretted that decision because my graduate years with Muller were filled with anecdotes and first-hand phrasings and ideas I could have used when I later did Muller's biography. I could have been his Boswell, in spirit if not in talent. I did not resume a diary for ten years. It was Kennedy's assassination that made me put on paper the emotional feelings I was going through and I kept that journal going for about a year. From then on, my diaries shifted. I wrote them when I was on sabbatical leave or traveling abroad. When we were at Woods Hole on sabbatical in the spring of 1965, I used the book to record what I was reading and what we were doing until I suddenly realized my ideas and readings had reached a critical mass and a book was emerging. The more I wrote up my notes the less time I had for the diary, and it served as a weaning instrument.

I resumed the diary on a regular basis on June 9, 1978 and have not missed a day since. There are now some 108 such volumes in my shelves, most of them 300 page journal books which I find easy to slip into a briefcase or tote bag and carry with me so that if I have a snippet of time I can write up the day.

My friend Norman, of course, was wrong. What makes a dairy live is the richness of detail of the past. It gives us both a historical perspective and a respect for change. These are less evident in mood dairies which read alike whatever season in which they were written and give less of the context of a person's life. Years ago I read a marvelous book on women's dairies, *One Day at a Time*, which gave a history of such dairies. I learned that in the colonial days women kept dairies to describe births, deaths, baptisms, and sermon topics. They were logbooks. These were followed by pioneer diaries kept as the families headed West and they all ceased upon reaching the destination sought by the Conestoga wagons as they slowly passed through hazardous passages and the threat of confrontation with Indians pushed from their lands. They were intended as memorials for the dead if the writer failed to reach her future homestead. The introspective dairies began after the Civil War, when a translated Russian diary became the rage. It may have been a fake, a novel written in the form of a diary, but it generated the still fashionable introspective journals that appeal to teenage girls. One additional journal, a sort of amalgam of introspection and narrative, emerged in the late nineteenth century. Women began writing their feelings about their miserable marriages and the beatings and infidelity they took from their husbands.

I use my dairies to record the day. This includes summaries of lectures I attend, lectures I give, discussions with students and colleagues, conversations with visitors, ideas for books and articles, and whatever seems interesting. Sometimes the routine of the day is itself interesting. A diary has no plot and no objective for an ending or even how it ought to be written. It evolves. Sometimes I can write eight or nine pages on something I found highly interesting. Other times I am so busy that I may only write a half page or less. About twenty-five years ago I started to keep an index in

the back of each journal. I can now look things up. It will take years after I retire to index all the volumes I have written.

I now find the diary part of my life and not writing up the day makes me uncomfortable. It's something I owe to myself. It puts the day in perspective. I don't think of it as therapy because I don't write it to find myself. It has made writing as effortless as eating or breathing and I never have to worry about writer's block. I write in ink, and until the end of the 20th century I used a fountain pen. I know some who use a computer to enter their daily thoughts. I suppose I could, now that I have learned to put my thoughts on a screen and write books with a word processing program which greatly facilitates editing. That would tie me to a computer and a specific time of the day to record my narrative. A portable blank book or journal is far more useful to me because I have no set time to write. I have learned how to use snippets of time and it doesn't matter if I'm waiting for a lunch guest, a LIRR train, or sitting on a bench in a museum. Any brief moment of time allows me to open the journal and write.

Diaries cannot cover everything because a day is filled with repetitive acts and acts that are of such universal occurrence that they don't add much to what a day is if repeated all the time. How often does one pee? Or sneeze? Or ritualize the day with habits? Mentioning such things on occasion may create the image of one's personality and habits but overwhelming the pages with such cluttered detail would be too time consuming and defeat the convenience of a diary as a summary of the day. I don't dwell on my privacy either. Whatever modest sex life I have had I largely keep private. It's not that I don't talk about my sexual habits, my fantasies, my repressed feelings, or my relatively rare, remembered dreams. Sometimes I do, but it is not the focus of my life and should not be for the summary of the day I intend for myself. For Kinsey's Sex Institute diaries had a very different purpose. He sought out those who kept sexual diaries and encouraged people to record everything, when and how they had intercourse and with whom, when they masturbated, or what aroused them. I'm sure it is of immense interest to an Institute for Sex Research. Most diarists are not preoccupied with such habits but anyone whose life is intensely lived, whether as a glutton, a compulsive liar, a fornicator, a self-

confessed thief, a cheat, or an unrepentant racist would be interesting to read. Most people are none of that and the diaries of ordinary lives reflect ordinary happenings.

I am sometimes forced to go back to look at my dairies but rarely read them otherwise. I was once listening to my daughters discuss my high school diaries which they had read. They said I was a disgusting grade grubber. I told them they were crazy; I loved learning and wrote about what I was learning. Sure enough. They were right. I was preoccupied with my grades and would calculate my average and speculate about my grades and a lot of my high school chums were discussing grades along with me in these diary entries of 1949. It made me realize that we forget what we were like. It also made me aware that for students, grades take on the significance of money in the work day world.

It gives me satisfaction that someday a historian for one of the universities where I have taught, will make use of these diaries and recreate some of the imagery and concerns of the past. I am a historian of science and appreciate the correspondence and notebooks of the day that scientists wrote at the time they were shaping ideas, carrying out experiments, or writing their major works. In this era of cheap and accessible telephones and e-mail where the printed record gets rarer and spontaneity is lost forever, minutes after it occurs, a personal sense of that history will be missing from future accounts.

①

January 3, 1949, Monday

aroused early at 6, saw Daddy off, and had to use cold water to wash in, holding the wet towel over the gas-flame to warm it up. Searched like mad through the boxes of junk to find the Physics homework assignment. After eating a bowl of Wheaties, to school at 7:30. The lights went on in the auditorium, + I was forced to read in the entrance ^{which} that was very annoying to me as I had to stand. Freeing came about 8, telling me he didn't finish his English report, and had comparatively little homework over the holidays. It was soon getting crowded, and then the lights went on.

A few seconds later, Mr. Foker called us to bring in the table and chairs for the

My first diary entry started a habit that has extended past 100 volumes. The first dozen were in speckled composition books. Most of my diaries are in 300 page bound journal books.

CHAPTER 27

MY TEPID SEXUAL LIFE

Freud bashing is popular among scientists, political conservatives, and those who feel a religious moral restraint is undermined by a Freudian rationalization of sexuality. I am no fan of Freud's Lamarckian theory of the inheritance of the oedipal complex. It competes with original sin as a genetic myth. I do appreciate his effort to pay attention to what we know goes on in our heads when we let our minds wander. There's a lot of sexual nonsense that festers and bubbles away. Freud made an effort to understand why this happens and I admire him for that insight and his courage to pursue it in an age that was even more hostile to sexual understanding than our own.

I like to think of my sex life as reasonably private. I am not a prude, however, and when I see students struggling with their sexual identities, I try to ease their guilt and anxieties by relating my own struggles in my youth. When I read of Zola's prodigious sexual appetite, I feel quite tame by comparison. I have never admired the Casanovas and Don Juans whose exploits inspire operas if not envy among men who would be otherwise than what they are.

I am a biologist and sexuality is very much part of what biology is all about. Reproduction is our contribution to the continuance of our species, not that we think of it in that sense when we are swept up in our own emotions. It is a function essential for evolution but not for individual life as any self-chosen celibate can attest. I concede, as do virtually all biologists, that much of our sexual behavior is programmed. We still don't know answers to basic questions like the heritability of homosexual behavior or individual variation in the frequency of sexual activity at

various stages of our lives. When I was accompanying pediatric fellows on rounds at the University of Minnesota, I learned that one teen age patient with mannosidosis, an inherited metabolic disorder that rendered him mentally retarded and grossly different in his appearance (the older term was gargoylism), regularly masturbated in his room.

I learned how to masturbate from Roland. I like to think I would have learned on my own without having to mimic the behavior of others, but as a conscientious scientist, I have to counter my beliefs with my ignorance of evidence for them. It's not that he was caught at it the way my father was as a teenager. I figured it out because he would be doing something under the sheets, and I knew this was an activity I had not seen before. I remember the first time I tried it, also in bed under the sheets. I did not know its consequences and was so startled by my first ejaculation that I thought I had damaged myself, at most as if I had bled profusely after cutting myself. We never acknowledged each other's solitary habits and kept them to our privacy. As a budding scholar, I went to my father's copy of Iwan Bloch's text on sexual pathology written in the 1890s. It scared the wits out of me. Bloch was still part of the culture that flourished for more than a century that was convinced that onanism (the medical term for compulsive masturbation) was the cause of degeneracy. This was reinforced when I read a Boy Scout manual I picked up in a used book store. Self-abuse, the euphemism then in use, was not only "unmanly," but it led to mental defects. I felt quite guilty over this pleasurable habit but just as boys learn to live with their lies, bullying, cheating, and other imperfections, I learned to isolate this shameful habit and equate it with my delight in reading pornography. This was not a religious sin in my mind because I was not raised in a religious tradition. I assumed the Baden-Powells and the Blochs of this world knew what they were talking about.

I was girl shy and did not date in high school, but I did have crushes on girls from junior high on. I did not have the nerve to ask them out for a date because the effort was beyond my skills or circumstances. I could not treat anyone to dinner or even lunch. What minimal allowance I had went for school lunches and if I was lucky, a dime or so for a comic book. I had no good clothes to wear. I wore what I had until the clothes wore out. It also

seemed pointless to me. What would it lead to? How can going out on a date beat reading a good book? If I went out, my father would consider me a fool for thinking of sex before completing a degree. He did not want his sons to be like him. In his own pessimistic assessment, he considered marriage a terrible failure and a man was better off leading a sexless life. My mother had Roland and me tied to her apron strings until we were about 17 years old. She would have gotten hysterical if I was not home precisely on the minute I said I'd be back. Dating was a heavy-duty production effort. Besides, I was scared. I didn't know what to do on a date.

I did have female friends and liked them. My favorite was Frieda Denmark. She was Girl Leader of Arista and I was Boy Leader. I admired her as a scholar, and she was witty and fun to be with. There were always seven or eight of us together, including Frieda, at the lunch tables at Thomas Jefferson High School. The closest to a date was after graduation day when Frieda came by and knocked on my door. I was naked, under the sheets and about to go to sleep. In those days I slept naked. I had heard her voice outside the stoop. "Let's get Foley [that's Elof backwards, the nickname I had in high school] and go for malteds." I panicked. What to do? I told my father. "Dad, there's a girl coming in. Tell her I'm asleep." My voice carried and she heard it and she was forever convinced I had snubbed her. I was just mortified to be caught naked by a girl, even if she was on the other side of a wall. Later that week, when I saw her and learned of her unhappiness over my slight, I was also too embarrassed to tell her the reason why I used that phrase in speaking to my father.

Roland and I engaged in sex play as children, often after reading the pornographic eight-page bibles. I remember very little of that play other than it being broken up by our mother who would get upset at us for what we were doing. I do not know if that is a likely consequence of sleeping together in a double bed or a consequence of reading the pornography. It did not change my primary heterosexual identification, but it made me aware I was capable of homosexual feelings and arousal. This became more apparent to me in high school when I would also feel aroused in the presence of some of my male friends. I once asked them if they felt that

way too. They said no and to their mirth, I responded, “Does that mean I’m a fag?”

Those ambivalent sexual feelings also followed me to NYU and I would shift my attraction to Norman or Lou when I wasn’t focused on Helen. Perhaps one of the attractions to Helen was that her own ambivalence made her more approachable. I felt less of a freak. It was not until I read Kinsey’s *Sexual Behavior in the Human Male* while I was still at NYU, that I realized that a sexual scale was more likely to be encountered among the men he interviewed than an all-or-none heterosexuality. It was a great relief to read that some 40% of the males he interviewed had at least one homosexual experience in their sexual history. I consider myself fortunate that I did not have any homosexual friends up to that time or it would have greatly complicated my life and I do not know if I would have repressed my feelings with such a contact. It also told me that while going to school in the vicinity of one of the world’s largest homosexual communities, I did not express those feelings to any homosexual classmates that might have sought a friendship with me. I suspect that if I had opened up to those feelings and they really reflected my sexual needs I would have been just as productive a scholar. It would not have been sexuality that limited me; it would have been society’s attitude toward my sexuality that I would have had to fear.

In fact, the first such solicitous contact I had was at Indiana University. I was walking back to Rogers Center about 1 AM from the library. A shadowy figure approached me. I couldn’t make out his face. “Hello” he said. “Hello” I answered. We stopped. I thought he might be a student from one of my classes or a student in the laboratory where I was a teaching assistant. Suddenly his hand shot out and he had my genitalia in a grip. I let out a yelp and leaped into the air, and tore off at a ferocious pace, leaving him standing there perhaps as terrified as I was. I told this incident to my hall mate, Vincent Tarantola, who berated me; he thought I handled it in a crude and ineffective manner. I was developing an erotic feeling for Vincent and he told me of an incident with another graduate student who was gay and who was so disturbed he invited him into his room and let him stay in bed with him but would not allow him to engage in any sexual act. Vincent and I were soul mates, but we never engaged in a sexual act. He was a

troubled individual. Some of his relatives were involved in the Mafia. He fell in love with one of Muller's students and she wasn't in love with him. He left disappointed and kept coming back and she kept saying it wouldn't work. He drove to the Ohio River, parked his car, took his wallet out, and left it on the seat of his car, entered the river and swam down until he couldn't hold his breath anymore and drowned. For years Muller's student was terrified that the Mafia would blame her and seek her out.

I never had any doubts about my heterosexuality in my marriages with Helen or Nedra. I'm not sure how Helen felt about me as a sexual performer, but she did tell a mutual friend that as our marriage failed, she dreaded Friday nights when I would be aroused and free from classes and teaching duties. I liked my sex whether it was returned in kind or not. That is not atypical for men. I knew towards the end of our marriage that she felt a lack of warmth towards me and after our marriage was over, I ran into Jack Hirschman. He asked how I was taking the separation and Helen's filing for divorce. I told Jack of my feelings and thought Helen might be incapable of feeling love for a man, a thought more shaped by anger than by reflection. Perhaps out of guilt, Jack denied this and confessed to having had an affair with Helen and that she performed very well. Suddenly the horns of a cuckold were planted on my forehead. I did not know if I felt worse over being betrayed by Helen or learning that she responded to someone else with the enthusiasm she lacked for me.

I have learned over the years that people have lots of sexual stories bottled up within them. Perhaps that is why they seek the help of psychiatrists because they have no one to tell their tales and hope to learn that they are not crazy or depraved. I have always listened to people, and it is no surprise that those who seek a sympathetic ear will discuss their inmost secrets and fears. It has happened to me traveling abroad. At the Tate Museum in London, a guard discussed, in that curious British way of keeping his poise as proper as being at a tea party, the history of his anal and oral fixations. On Semester at Sea one passenger came to me and wanted to know about the genetics of homosexuality. He told me his story, from his initiation as a boy by an older man visiting his town, his college days where he confirmed his homosexuality, his professorial days when he

rejected the advances of his chairman (“We had the wrong chemistry”) and how he maintained a relation over several decades with a married man who came once a week to satisfy him. I have listened to sobbing students who are terrified about their own sexual ambivalence, and I would not be surprised that a major cause of suicide among teenagers in high school and college is their realization that they have homosexual tendencies, guilt over their sexual needs, or an erroneous belief that they are incapable of holding the love of someone they like.

How sad. Sex is enjoyable and it is part of the life cycle of all living things. For almost all of us it is an intimate act. As humans we have our customs and our values and one of them is privacy. I once asked a student who did not doubt his Catholic identity, if he confessed masturbating to his priest. “Never,” he replied, “It’s none of his business.”

CHAPTER 28

INDIANA UNIVERSITY: MY FIRST YEAR



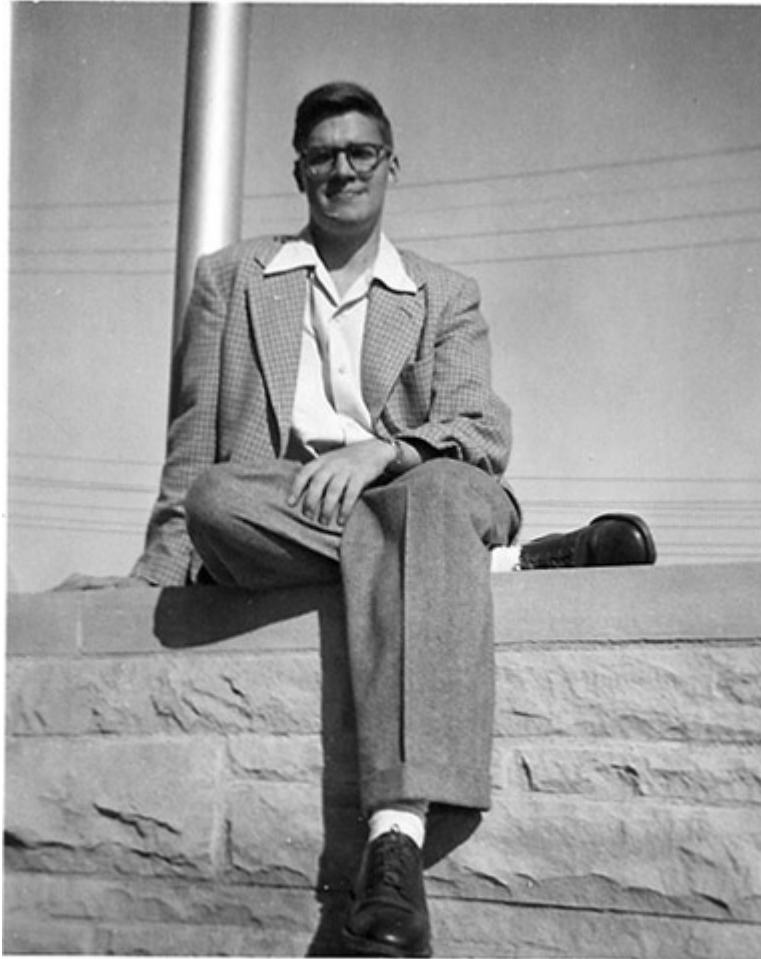
I wrote to H. J. Muller and told him that I was interested in being a student in his laboratory and that I was applying to Indiana University for admission. I also applied to Columbia University and to the University of Illinois, the latter because one of Mr. Cohen's students was on the faculty there, although in the English Department. Columbia rejected me, which did not surprise me with my 3.1 average. Illinois offered me a one-fourth time teaching assistantship, which was inadequate to support myself. Indiana, my first choice, gave me the works – a half-time teaching assistantship and tuition remission. Muller had written back, in a handwritten letter, that he was interested in me but that I had to test myself, for and him to see if I would fit into the laboratory.

The week before my departure, my father handed me a letter that came earlier that summer to 2 Lafayette Street. It was from Lou Wall. He wrote an angry scrawl, accusing me of being a treacherous rat, claimed (using Hitler's phrasing in *Mein Kampf*) that I had the sparrow brain mentality of a grubber for crumbs, and that when he and his brother got back to New York, they would find me and beat the shit out of my pea-sized brain. I don't know if my father read it or not. If he did, he would have had to unseal and reseal the letter and it didn't look as if it had been opened earlier. The letter threw me into a panic, and I had visions each day, until I left, that I would be pounced on as I walked down Sheffield Avenue or went to visit Helen. This was not altogether fantasy on my part because while I was on such a date that week, Lou and his brother showed up at Sheffield Avenue and my brother told them I was not home. They sat on the stoop waiting for me until it got dark and then left.

The day before I left, Arnold Koslow's father gave me a kosher salami to snack on for my train trip. I packed a trunk with papers and books as well as a suitcase I had bought, and I was ready for my trip. Roland saw me to the New York Central railroad station, and I was soon seated in a coach, waving goodbye and departing west for the first time. I was glued to the window and watched the houses and farms, the Adirondack mountains shrouded with rich green trees, the oases of grazing cows, and rural America unfold before my eyes. I ate nothing but salami for some twenty hours and only had a few inches left. I used my penknife to hack off pieces and down the greasy chunks went. Around me a cloud of exhaled garlic floated and passengers going down the passageway between the rows of seats would look strangely at me. I changed in Cincinnati and got the branch railroad which took me to Bedford, in the limestone belt of Indiana. There I had my first food other than my salami, a rich vanilla malted. I took the Monon to Bloomington. It was a brilliant cloudless day and I asked directions to the university. It was some eight or nine blocks to campus, and I thought I'd save my meager money and I lugged the trunk and suitcase, stopping every half block to switch hands because of the heavy weight of the trunk. When I got to the Kirkwood entrance to campus, I learned that my dormitory, Rogers Center was on the opposite side of the campus, a

good mile away. I started to lug my burden and was suddenly hit with the drastic urgency of an oncoming diarrhea. I stopped at the first building I came to and rushed down to the men's room, dragging my possessions into the toilet cubicle, and exploded. As I walked out, much relieved, I saw a sign on the door, H. J. MULLER, in simple black capital letters. I felt that I had arrived at the Promised Land. I knocked on the door and a secretary answered. She told me Muller was on sabbatical leave in Hawaii and wouldn't be back until next year.

I got to my room in Rogers Center and unpacked. I was alone for the first time in my life. I walked around the grassy lawn with its small creek and wooden bridges. I gazed lovingly at the crawdads in the creek and that night, for the first time in my life, I gazed heavenward and saw the Milky Way as my father had described it. I felt reborn, as if I had molted and shed the old chitinous exoskeleton of my New York life and was now plunged into the next phase of my life cycle.



Vincent Tarantola in 1953 took this picture of me sitting on a limestone wall at Rogers Center, which was then the dormitory complex for IU graduate students.

My first year was wonderful. I wrote home, to Helen, and to my friends every week. I went to the wonderful operas that IU put on with its fabulous school of music. I took courses in Hagan's plant physiology, Crowell's invertebrate and vertebrate zoology, Sonneborn's Genetics of microorganisms, Cleland's cytology, and Ebert's Developmental biology. It was a different experience. The graduate education was thrilling even if the lecturers were uneven. Sonneborn taught with excitement about the genetics of algae and protozoa. I even asked him to let me audit his seminars for his graduate students while Muller was away. Crowell was hopelessly disorganized and rambled without ever putting things together, but his laboratories were enormously exciting. We cut up obscure organisms like sipunculoid worms, and had to use reference sources to do so, since these were not the things found in laboratory manuals. Crowell even took us to

May's cave, and we crawled on our bellies to enter the main cave to behold thousands of bats hibernating on the ceilings. We plucked these and stuffed them in paper bags. When we got back some 50 feet from the cave, we'd warm some of the bats in our hands and watch them fly back to their cave entrance. We smuggled a few back to campus and stuck them in the desk drawers of the student's laboratories so that the bats would fly out when they tried to get their dissecting equipment.

Cleland spoke in a nasal monotone, and he taught his class right after lunch so that we began dropping off a few minutes into his lectures. He knew this and told us that Jim Watson used to tilt his chair while listening to him lecture and once fell asleep and fell to the floor. Cleland was still dressed in the fashion of the 1920s and wore pince-nez glasses. He was elected a member of the National Academy of Sciences for his work on the evolution of primroses (*Oenothera*). He was also a deacon of his Presbyterian church and a very kindly man. When it rained, I would sometimes look out the library window and see Cleland, in his shirtsleeves, rolling up the windows of the cars parked behind the Old Biology Building.

Ebert was our favorite teacher. He was brilliant in his lectures and polished in delivery. He had his notes on one small square of paper and at the end of the lecture he would crumple it and drop it in the trash. He was witty, encyclopedic, made marvelous connections across the disciplines, and always gave us the latest experiments in developmental biology. He had been badly burned by kamikaze hits on his ship during the war, but we had to look for his scars to see them.

Every entering graduate student felt like a fraud. We were required to attend all the student and guest presentations. The journal club was held each Wednesday. When we listened to these talks, we understood nothing or close to nothing. It took two more years before we could listen to anyone present a talk and follow it with good understanding. Critical listening and reading was a saturation process. I took notes. I was a compulsive note-taker, and this turned out to be very useful when I tried to retrieve what was said years earlier.

We were also required to make a presentation of our own during the second semester of our arrival. I had read Blum's *Times Arrow and Evolution* and liked the idea that time moves in one direction and that evolution is not reversible. I thought I'd look at the literature that explored this theme. Since Muller wasn't around to advise me, I went to Sonneborn. He listened to me, and I showed him my outline. He frowned. "Elof, the last student who tried to do this topic ended up cutting meat in Chicago." I was devastated. It was too late to come up with another topic and my talk was scheduled some three months away. I soon found myself in the library whenever I wasn't in class, doing my teaching assistant duties, or running errands. I stayed until midnight, turned off the lights and locked the door. I read dozens of books and articles on the theme. I even found articles by Muller, and the Zoology Department chair, Torrey, on evolution's irreversibility. I practiced my talk in front of a mirror. I talked to myself in the empty library and paced furiously as I would reject one approach after another.

My best friend at the time was Vince Tarantola (we sometimes called him "Spider"). He was encouraging and listened to me go through my panic syndrome. He was a deeply cynical and pessimistic person and I immediately liked him because he showed the scars of an unhappy upbringing in New York City. He told me to steer clear of the philosophy and hit the audience with as much biology and evolution as I could dredge up. I had already figured that out and by the time I was ready to make my presentation, I liked what I had outlined for my talk.



The entrance to Indiana University in Bloomington, Indiana, is the Sample Gates, on Kirkwood Avenue, with the old Student Union building (with red tile spire) as part of the older campus. Most of the buildings are constructed from local Indiana limestone. The gates did not exist when I was a graduate student.

On the day of my presentation, the students and faculty were there. Kinsey, Cleland, Sonneborn, Crowell, Torrey, and a dozen or more faculty from zoology and botany showed up. The room was full. I was introduced and I shot forward and my heart was thumping wildly. Suddenly I found my jaw was frozen. I couldn't get the first words out and I was in a full stage-fright collapse. I quickly breathed in, pushed my knuckles against my lower jaw and began talking. I developed my arguments, backed them up with what I read, pulled in things I had learned in my classes, referred to Muller's and Torrey's work much to the surprise of those listening to me, and did so with excitement and the pleasure of scholarly discovery. I handled all the questions tossed at me and was given a thunderous applause. Sonneborn was the first to congratulate me on a job well done. I had defined myself as

a scholar-teacher to my fellow graduate students and to the faculty who would judge me.



*Tracy M. Sonneborn was a **Paramecium** geneticist at IU who served as my advisor during my first year (1953-1954) while Muller was in Hawaii on sabbatical leave.*

CHAPTER 29

LEARNING TO DRIVE

Few of those of my generation who grew up and lived in New York City learned how to drive a car. Why should they? The city has marvelous transportation. Buses and subways are available with rarely more than a three-minute wait and they cover almost all parts of the city with the exception of Staten Island and outlying regions of Queens. I enjoyed getting around the city and I could usually estimate within minutes when I would arrive at a destination. It was very different for those who attempted to drive in the city. There was the problem of parking in crowded streets, the inconvenience of gridlock and bumper to bumper traffic during the busiest times of day, and there was the frustration of having a car or taxi make a left turn from the lane on your right passenger side.

But as soon as I left New York City, I realized that's not the way the rest of the United States works. People use cars, streets are designed for cars, and some destinations are nearly inaccessible without cars. Fortunately, students don't have to worry that much when they are in a university because it is almost a self-contained community. My first year at IU was carless and I didn't have the slightest interest in learning how to drive. Some of the graduate students would give me a lift from Rogers Center if they spotted me on the sidewalk, but most of the time I walked and didn't need to hitch a ride. Parking was difficult enough on a large campus with some 30,000 students and staff.

Helen, quite properly, saw the universe in a different way. She felt a car was essential, a point I had to concede when Claudia was about to arrive. It's one thing to hoof it on your own but with a baby there are doctor's visits and lots of shopping off campus. We bought a used Chevrolet, and I paid

the monthly payments for it out of my Fellowship stipend. Helen had learned to drive in Brooklyn because her father had a car and he parked it in front of their Brooklyn apartment building. He taught her how to drive.

I took driving lessons at IU and hated them. I was trained on a standard shift and kept stalling. My instructor was pessimistic about my passing the test. I couldn't afford any more hours of instruction. I took the test and the examiner told me "I should flunk you. You can't park, you don't turn your head to look when you change lanes, and you lack confidence behind the wheel. But you're married, have a child, and you need a car. Keep off the main streets until you get more practice." I drove home with my license and the next morning parked in front of the Administration Building in a lot on Kirkwood Avenue. Perfect. I finished up the day and backed out. OOPS. I whacked the fender of the car next to me. Dent. I left a note apologizing to the owner and gave my telephone number. I called the insurance company, and they were very friendly. No problem. The dented car owner complimented me for my honesty. I told Helen I was through driving, and she could do all the driving. I'd walk.

She did the driving until we separated, and she found a job in Pennsylvania. She told me she would be getting another used car, that I had paid for this, so it was mine. I began driving again and took lots of time. I tried parallel parking on one street and must have kept turning in bizarre ways because someone stopped, got out of the car, told me to get out, and then in one motion inserted the car between two cars to my utter amazement. I tried driving to the center of town and got confused and soon found myself entering the on-coming traffic. I was stopped by a policeman and instead of a ticket he said, "You need practice. Keep away from the main streets and you'll be fine." No ticket. I smiled and thanked him. I parked the car in the back of my apartment and let it rest. When I had finished my dissertation, we all got ready to go to the International Congress of Genetics in Montreal. This was perfect. I would learn to drive on the highways and I'd car pool with some of the graduate students. All went well until it was my turn. Somewhere near Pennsylvania, I nearly rammed a semi-trailer because I was afraid to pass. Seymour told to me pull

over. "Get out," he ordered. Sheepishly, I surrendered my seat. He drove the rest of the way.

After the Congress ended it was evening with a setting sun. My car had been broken into and the radio I had purchased to avoid paying more in Canada was stolen. I got into the car and started driving West. I discovered the Queen Elizabeth Highway was under construction and there were detours coming every few miles. I was bothered by the glare of headlights coming at me and figured that must bother the other drivers, too, so whenever I saw a car coming, I turned off my lights, plunging my car and the road into utter darkness, much to the puzzlement of those drivers who discovered that their "brights" weren't on. I was shaking like a leaf with terror and my knuckles were white as I gripped the wheel. My heart raced and I felt this must be what Hell is like. It lasted for hours. I drove about 25 to 30 miles per hour. There were no blinkers in those days. Cars kept passing me and they would kick up clouds of dust because most of the highway was still unpaved. I drove by dead reckoning through these dust storms expecting death at any minute. Finally I got to Kingston, Ontario in the dead of night. The distant city lights lifted my spirits and I felt I had arrived at the Emerald City of Oz. I drove to campus, found the Theology Building where the Biology Department was housed, parked in the middle of the front row of faculty parking spaces, and locked the door.

Except for removing my belongings the next day and putting them in my office and laboratory, I didn't touch the car again. Winter came. The snows covered my car, and it soon resembled an igloo. It remained that way as I courted Nedra, taking the train to Chicago or meeting her at the train station when her train pulled in. We used the cab. In March we got married. We located a room in a house about three miles from campus. It was too far to walk. We needed the car. The car was partially protruding through its cocoon of ice and snow. It had four flat tires. I managed to get the door open, slid into the seat, placed the key in the ignition and it immediately started without a burp. I called a service station and asked them to pick up the car, put four tires on it, and check the battery and oil.

I needed an Ontario license. I called the motor vehicle bureau and the examiner told me that he was sick and couldn't get to the testing facility so I should drive to his house, and he would test me in his neighborhood. I carefully drove to his place, parked, and rang the bell. He looked at my Indiana license. "Well, you've been driving for a year, you got here. You know how to drive. I don't need to test you". He promptly signed the papers, and I had my Canadian license.



The Old Theology Building at Queen's University in Kingston, Ontario. My laboratory was in the basement (the dark window at ground level to the right of the lamp). In the back of Old Theology, I parked my car and did not use it until I married Nedra.

CHAPTER 30

MULLER'S LABORATORY

Although Muller was away in Hawaii, I began to work in his laboratory. At that time we were in the basement of Kirkwood Hall. It wasn't wise to do much research because I was taking three courses and serving as a teaching assistant in two sections of introductory zoology. I used the time mostly to know my fellow graduate schools and to learn what Muller's lab was doing. The laboratory was run by Irwin Herskowitz who had been hired a few years earlier to supervise his research projects because Muller was being overwhelmed by the demands on his time. Herskowitz was a former high school teacher who went on for a PhD and he had good organizational skills and tried to help the graduate students when he first came to Bloomington. I did not know then, but gradually learned that a laboratory revolt took place, one faction demanding Herskowitz be fired and the other faction being sympathetic or at least tolerant of Herskowitz in this needed role. Some of those who led the revolt left after Muller backed Herskowitz. One of the backers of the anti-Herskowitz movement, Irwin Oster, was a graduate student who made sure he was on a year's leave in Edinburgh while Muller was away.

Of those who were there when I came, Seymour Abrahamson (whom we called Sisi) and Abraham Schalet were already heavily into their research work. Shanta Iyengar and Jim Telfer were less active but had a year's experience. The stock keeper was Sara Frye. There were several full-time research workers who were not graduate students, including Helen Meyer and Margaret Edmondson. Herskowitz taught me some of the basic techniques used in the laboratory and put me in a room with Seymour and Abe. Seymour came from New Jersey, and he was sharp and ambitious. He

had a natural aptitude for leadership, and I thought of him as the one who knew the most. But it was Abe for whom I felt the most affection. He had a vulnerable quality I liked. Where Seymour exuded self-confidence in his abilities without being cocksure, Abe was full of doubts and steeped in inferiority. Seymour grew up comfortably middle-class, but Abe grew up in a troubled home and like me, felt incomplete. Abe thought he had a harsh or raspy voice with an inarticulate delivery and as a youth he fell in love with the singing of Jussi Björling, the Swedish tenor and he would stand in the peanut gallery at the Met to listen in awe at the flawless flow of notes that made his arias so memorable. While I had as much insecurity as Abe, I hid my insecurities, and he was impressed by my self-confidence, my wide reading interests, and my gift for expressing myself.

I met Muller for the first time at a party held when he returned from Hawaii. He was only five feet one inches tall, bald except for a rim of hair that went from his ears and connected in the back of his skull, and himself an insecure person. He was somewhat shy, and stood alone at the party, so I went up to him and introduced myself. He welcomed me and hoped my first year was a good opportunity to get acquainted with his laboratory. He told me that next year I should begin working on a project and that I should take his courses, which, of course, I was looking forward to doing. I did not expect a Nobelist to be that shy and I was pleased he had positive feelings about me from his correspondence with Herskowitz.



Muller's House, 1001 E. First Street in Bloomington where I first met Muller.

When Oster returned, I found an altogether different personality. He was devious, witty, odd, at times mocking, and vulgar. He liked to tell dirty

jokes. He worshipped Muller. He hated Herskowitz with almost venomous cruelty. He said he was always glad to offer a cigarette to Herskowitz, when Herskowitz ran out of his own, because he thought it would hasten his death from lung cancer. He disliked Seymour but kept a reserve in his presence and was clearly a rival of Seymour's for Muller's affection. Like Muller, he had pattern baldness, but he was somewhat overweight and much more nervous. I liked Oster, just as I liked Abrahamson and Schalet, but I learned to be careful in his presence. He exuded intrigue.

In addition to the politics over the laboratory revolt and learning to negotiate the two factions in their uneasy coexistence, I learned there was an on-going feud between Muller and Sonneborn. This erupted from time to time, and I got an inkling of this when I naively suggested to Herskowitz that I might want to start out with a fruit fly project on a curious phenomenon in fruit flies called carbon dioxide sensitivity. Certain strains would die or enter a temporary paralytic state when exposed to carbon dioxide. The condition was transmitted maternally and thus did not fall into classical genetics. Sonneborn was interested in what he called "extranuclear inheritance," the genetics of everything but the chromosomes in the nucleus. Sonneborn had made his fame discovering sexuality (more than two sexes, to everyone's surprise) in a protozoan, paramecium. He then leaped into international fame discovering an extranuclear form of inheritance that was transmitted by the cytoplasm, the bulk of the cell material that exists around the nucleus.

Herskowitz told me that Muller wrote back and said I should not work on this project unless I wanted to be a student of Sonneborn's. He feared it would be treading into Sonneborn's area and he knew (although I did not at the time) that Sonneborn was ambivalent in his feelings toward him, feeling both admiration and competitive envy. I had no such intentions because Sonneborn kicked me out of his laboratory seminars shortly before Muller returned, claiming that he would feel more comfortable limiting his lab meetings to those who were students in his laboratory. At times the fight would escalate. At one time Muller and Sonneborn had both scheduled an activity at the same time and each accused the other of trying to sabotage their students. Sonneborn then retaliated with a penciled note he tacked

inside the glass window of his door, “Keep this door locked at all times to keep out drosophilae and other pests.” I was a frequent visitor to two of Sonneborn’s students, Steve Taub and Irwin Tallan, and greatly enjoyed their company and until the note went up, we freely met in each other’s laboratory rooms.

Muller’s laboratory functioned like a dysfunctional family. Shanta Iyengar had terrible feelings of insecurity and was bullied by Irwin Oster, the only one she felt would talk with her. Seymour had a split with Muller over what he felt was a betrayal of confidence. Muller had another student [Oster] do a piece of work that overlapped what Seymour was doing and Seymour thought it was to check the accuracy of his work and he could not tolerate such a questioning of his competence or integrity. He chose to finish up as fast as possible and seek his fame in radiation genetics through his post-doctoral work and the grants that he secured as a professor at the University of Wisconsin. Jim Telfer decided things were unwholesome in Muller’s laboratory and applied to medical school and thought he would enter space medicine. Abe became so traumatized by a love-hate relation with Muller as a sponsor that after he completed one of the most brilliant PhD dissertations in Muller’s laboratory, he refused to write it up for publication and for years worked in Holland as a research associate and never held an academic position.

Irwin Herskowitz felt overshadowed and limited as a laboratory administrator and left Muller’s laboratory to join the faculty at St. Louis University where he was a successful teacher and wrote a well-liked textbook in genetics. Irwin Oster went to the Institute for Cancer Research in Philadelphia where I learned some valuable techniques from him on chemical mutagenesis. He then moved to Bowling Green University in Ohio to head one of the two national centers for fruit fly stocks. While there he tried to enter medical school in Canada and commuted back and forth until he was forced to drop out with many problems heaped on him, including the suspicion by his university and the National Science Foundation that he was not living up to his contractual obligations. He became depressed and paranoid and very abusive to his colleagues who feared him. He then stuck several kitchen knives in his chest and collapsed

in his bedroom. Except for the unintended removal of his pericardium, he survived this bizarre suicide attempt, recovered in an asylum, lost his academic job, and began a sojourn in Canada and in the Caribbean in a futile effort to complete his medical degree.

Sara Frye who became one of Muller's graduate students was convinced that her dissertation work had disproved Muller's central claims about how radiation induces mutations. She was a very headstrong individual who did not hesitate to tell people off if she thought they deserved her withering blast. She said she had to write her dissertation in a way that reflected Muller's views in order to get her PhD. After she got it, she promptly removed every copy of her dissertation except for one that managed to find its way into the security vault of the Lilly Library and she replaced them with a copyrighted version of her own. She told me after Muller died that if there were a statute that allowed people to sue the dead, she would have done so. She taught briefly at Berea College and then shifted to legal work in Washington, DC

I regularly spoke with Oster on the phone. He would usually talk an hour and he was always friendly, witty, full of gossip, and making the best of a defeated life, feeling abandoned by his former wife and his children, and shunned as a maniac by those who knew him. He became a free-lance photographer in Miami, took an interest in Santorini religious rituals (Voodoo to those who thought it was a cult) which he photographed, developed a brain tumor, refused surgery or chemotherapy, and went to Canada to die.

Muller's laboratory was a strange amalgam of unlikely people. The women who prepared the fruit fly food were Southern Baptists and held prayer vigils in their kitchen while Muller extolled his atheistic world view. Muller was as liberal as Jim Telfer was conservative. At one time Muller had a Christian Science student who later became a CIA operative and spied on Lysenkoists in the Eastern bloc. He had a German student who had grown up in Third Reich schools and whose views on anthropology then still bore the imprint of hierarchy with an Aryan supremacy fostered by that

ideology. Fortunately, by the time he left Muller's laboratory with his PhD, those vestiges had been displaced.

As horrendous as this litany of discontent sounds, I thrived in it. I loved Muller's brilliance, his commitment to his work, his sharp critical eye for what we wrote, his generosity to make sure that we were funded throughout our stay, and his courage to act as humanity's guardian, protecting us from radiation hazards and the abuse of those who were negligent or indifferent. I admired my fellow graduate students and accepted the flaws in them as I hoped they would accept the flaws in me. I grew up in craziness and did not at all think it strange that it occurred elsewhere.



Hermann Joseph Muller (1890-1967), in a photo taken about 1946 when he received the Nobel Prize in Medicine or Physiology for his work on radiation genetics. Muller was short in stature (about 5 feet 2 inches), energetic, and idealistic about the applications of genetics to society.

CHAPTER 31

NOT GETTING DRAFTED

The Cold War ritual began at age 18. Young men would be expected, usually on their birthday, to show up to their local draft board and register for the Selective Service System. It was as much a rite of passage for men as losing one's virginity. Those who were healthy hoped they would be miraculously 4F (the untouchables thought to be mentally or physically too incompetent to hold, recognize, or shoot a gun). During World War two those who were 4F were thought to be slackers if they weren't in wheel chairs and they were rumored to be members of the *4F Club* ("find them, feel them, fuck them, and forget them"). Those, like my brother Roland, with a hopeless cardiac condition, sought to be 1A, the quick draft picks when trouble broke out, and they were first to stand on line, ready to serve their country.

I easily made 2S as an undergraduate at NYU. That was student deferment. In the early 1950s not that many young men were college students and there was a sea of eligible blue-collar and white-collar teenagers who had no money to pay for school. I also lived in a section of Brooklyn that was still impoverished and high school graduation was considered the terminal degree.

When I got to Indiana University the Korean War was well underway and the threat of a Communist expansion or Capitalist encirclement around the world had the Cold Warriors on both sides of the Iron Curtain in a frenzy of worry and preparedness for World War III. This made the Selective Service System more convinced than ever that universal military training, if not permitted by Congress, should at least be felt by all classes of society. It was no secret that the poor and minorities were being served

up as gun fodder for North Korean and Chinese troops. Muller wrote letters on our behalf pointing out how important it was for us to get PhDs and become scientists whose skills would be essential for our defense. This usually worked and we got our 2S deferments.

Up to this time, I had not had a physical examination because the 2S classification was automatic. Now the Selective Service enforced a new policy. The physical had to precede the classification. I received my notification to appear in Indianapolis for my physical. A bus would be waiting for the local stone cutters and the highbrow college students at the court house ready to leave at 7AM. Be there promptly or face court action.

I went to bed with my alarm clock reset for 5 AM, but forgot to pull the release button so it didn't go off. I awoke at 6:30, uttered an Oh my God! And shot out of bed, plunged into my old clothes, skipped the obligatory washing ablutions, and ran the mile and a half to the court house getting there about ten minutes to seven. I was awash with sweat. I didn't have time to gather any books with me, so I just looked out the window at the rolling hills of Southern Indiana and soon we were in the downtown section of Indianapolis and entered a dingy-looking building where we were told to strip off our clothes, stand in a line, bend down and pull our cheeks apart as an army doctor peered carefully looking for hemorrhoids. "Cough," he would say and down the line we'd obey, as his cold fingers groped into our scrotum looking for hernias.

We went from station to station. I had still not simmered down from my nearly missing the bus and I was in a stew because I had nothing to read for the bus trip back home and I would be falling behind. It was bad enough to miss a day's classes. We took the IQ test with our clothes on, and it was the most startling change I had seen in the many IQ tests I had taken. Instead of those familiar faces with a missing eyebrow there were rows of saws, wrenches, screwdrivers, and other work tools my uncalloused hands had never encountered. Which was the lug wrench? Which was the ball peen hammer? Which saw blade would you use to cut one quarter inch ply wood to make a table top? The military had too many prime physical specimens flunking out on the IQ test as retarded and in their wisdom, they filled the

new IQ test with tools for those who worked in non-academic high school programs. I felt like an idiot and did not really appreciate the revenge heaped on the intellectual nerds for their construction of IQ tests that clobbered the blue-collar children.

We were asked if we liked boys rather than girls. The burly sergeant who asked smirked, "Go ahead and say yes. It'll get you out of service. We don't want you. But you'll never get a job because all your future employers will know why you were rejected." We all thought it was a fate worse than death to be labeled homosexual. The closet was firmly shut in those days.

The final test was an eye test. I wore glasses. "Take off your glasses," the examiner ordered. I stood on the white line. The chart was a distance away. "Keep walking until the top letter is clear." I began to walk. The letter was fuzzy. I told the examiner it was fuzzy. "Keep walking." About eighteen inches away it was clear. "E?" I asked.

We were done. We stood at attention in two lines. Four names were called out, one of them was "Carlson."

"Excuse me, is that Eloy Carlson?"

"Yeah, the rest of you get back on the bus to Bloomington. You four. Come with me. You're going to Camp Atterbury."

I had flunked the blood pressure and eye tests.

I told one of the college students going back to leave word with my friend Vincent Tarantola that I wouldn't be back tonight and that he should let me know what assignments were due when I got back.

Camp Atterbury was an Army base that then held about 10,000 soldiers. We were taken to the military hospital and ordered to strip and put on hospital pajamas. We were each assigned a bed. We were given regular army chow which was served at the hospital's cafeteria. It was Friday. No one was on duty to examine us, and Monday was Armistice Day. It would be Tuesday before my eye test could be done. Each morning I would be awakened, my temperature taken, a sample of blood removed ("regulations"), my blood pressure measured, and I would be told to stay in

bed or in the lounge. We had no choice because they had our clothes. Real army recruits were in my nearby beds. One just had his tonsils removed. The other was just circumcised because his foreskin was as red and sore as mine used to be when I was a child. The reading material in an army base is not the best for college students. There were lots of comic books and I found one treasure, Salinger's *Catcher in the Rye* which I devoured. The rest of my time I learned double deck pinochle which we played for hours at a time.

It was enjoyable to have a holiday meal of fried chicken with gravy on mashed potatoes and generous helpings of food. It also felt strange that I was spending all this time for two little tests that I had no desire to flunk. I was told that it was not uncommon for young men to take a substance to raise their blood pressure. I was miserable that I didn't have any of my texts with me. Finally Tuesday morning the optician came in and measured my eyes. He said they were fine with corrective lenses. "Why did you come here?" he was puzzled. I told him the story. He shrugged. "It's the Army, what do you expect?"

About a month later, my draft card arrived. I was given the student deferment, 2S.



Camp Atterbury is near Edinburgh, Indiana. It was opened just before Pearl Harbor and closed after the Korean War ended. During World War II it was chiefly used as a prisoner of war camp. I was housed in the hospital unit.

CHAPTER 32

GRADUATE RESEARCH

My first research project was assigned to me through Herskowitz. Muller was interested in the weak effects of a gene mutation when it was protected by a normal gene from the other partner. To do this I designed some special stocks or combinations of genes that were tied together by complex rearrangements of the chromosome. It was fun to make a stock to order and I felt like a mini-version of God during the six days of creation as I designed and shaped into being a fly that had no former incarnation on earth. Then the drudgery began. To test these weak effects, Muller suggested I design a larger container than a half-pint cream bottle. So I arranged for the shop to cup a hunk off a milk bottle bottom and taped gauze over the hole to permit aeration of the food as it would turn into sludge from the thousands of larvae churning and competing against each other for space and food. Getting the hatched flies out before they drowned in this muck was much harder and I hadn't really solved it, despite putting chunks of Kotex as absorbent material to absorb the moisture. The bottles stunk of the vinegar that replaced the alcohol of the yeasty food. No attempted collection of flies was free of blobs of food that trapped hundreds of flies as if they had been rolled on by a runaway snowball during an avalanche.

I felt the experiment was getting nowhere and was floundering around trying to think of better ways to solve this problem. At the same time I was taking Muller's laboratory course in genetics. It was all fruit fly genetics, and the students learned all the complex tools of research genetics. They mapped genes, mapped lethal mutations, learned to pick up complex chromosome rearrangements by genetic techniques, and they learned how

genetic tools, worked. In one experiment, Muller had us cross several variants of a gene called dumpy. Some affected the shape of the wing, some affected the bristle pattern on the back or thorax of the fly, and some affected viability. There were lots of combinations of these three traits and we learned that the offspring showed what they had in common. It took three generations to demonstrate this. Seymour was the teaching assistant for this course, and I never knew anyone who worked harder than him to please Muller. Working with living things is hard work. Things go wrong easily and to get all the materials ready meant planning weeks in advance. I admired Seymour's energy and his skill in doing this thankless job because Muller would hear every complaint when something would go wrong. If there is any rule of life all biologists know, it is that something always goes wrong when dealing with life. Expectations are one thing. The reality of life is very different.

In one of my flies there was a fly that didn't look right. I was expecting two categories of offspring, one affecting wing shape and the other affecting the thorax. This solitary fly combined both categories, but both the wing and thoracic disturbances were more exaggerated. I thought at first I had not cleared out my etherizer and this was a contamination from my previous vial I had looked at. I checked that and found that was impossible. I knew it could not have been a kamikaze fly in the room that just zeroed in to my etherizer. Normal flies, not weird flies are more likely to buzz about. I called Seymour over and showed him the fly. He swept it into a vial and said he'd show it to Muller.

That was in March. In June Muller was about to leave for a trip to Switzerland for a conference on radiation. He stopped by my desk handed me a sheet of paper. It was an abstract and I saw my name listed as a co-author with Muller and Helen Meyer.

“What's this?”

“It's your article. I took the fly you found and analyzed it. You recombined two pieces of a gene. I thought that was important and should be published.”

“But all I did was find a fly. That doesn’t make me a co-author.”

“If you hadn’t found that fly, you wouldn’t be holding that abstract. Speak to Helen Meyer about it and I’ll discuss it with you when I get back.”

That summer I read all I could on this new field of pseudoallelism that was leading to an analysis of gene structure. I also asked Dr. Meyer for some stocks and began working on the structure of this gene. When Muller came back, he saw my enthusiasm for what I had done and reflected on my utter lack of enthusiasm for population genetics. He asked me if I wanted to switch my project and take this over for my dissertation work. This was a more joyful gift than if he had handed over his gold Nobel medal to me.

While research is the goal of the PhD there is a lot to do to be certified as a member of the research clan. I had to pass my oral examinations. This meant that in addition to my regular courses and my research and what remained of my marriage, I had to second guess what the committee would ask me for this ordeal. To help students, each graduate student who took the orals wrote up the questions and entered the typed sheet in *The Graduate Student’s Bible*. It gave some idea of each faculty member’s line of reasoning and areas of interest. It included Jim Watson’s own qualifying orals. What I learned is that the qualifying oral is utterly unpredictable. No one seemed to ask the same question twice or choose an area of interest that they came back to again. I also was feeling exhausted from my troubled marriage and couldn’t focus on reading my notes from all my graduate courses. All my old insecurities began piling up and the closer to the examination it got, the more I unraveled.

For this meeting, Muller; Cleland and Sonneborn (both National Academy members); Breneman, an endocrinologist; and Hagan, a plant physiologist were present. Cleland began by asking me to explain the difference between plectonemic and paranemic coiling in meiosis. This made as much sense to me as asking an English major to discuss the pluperfect and imperfect tenses in Joyce’s Annalivia Plurabelle section of *Ulysses*. I didn’t even remember the stages of meiosis, let alone the bizarre

way in which chromosome threads coiled in meiosis. I felt roughly like Max Schmelling in round one of their rematches when Joe Louis socked him on the jaw. I kept flubbing Cleland's questions who kept probing my soft underbelly of ignorance.

Muller tried to rescue me by asking me how I thought the latest article in *Science* on the genetics of sickle cell anemia could be used to interpret the long-term evolutionary effects of that gene in the African American population. Great. I study my ass off using all of Muller's notes from his courses and he asks me a question on an article I haven't even read. I reeled as Muller then tried to navigate me into other areas I didn't know. Breneman tried to rescue me. He asked me the difference in adrenal hormone release of those involved in flight responses and those involved in alarm. There's a difference? Long ago that subtle distinction had slipped out of my neurons into some vague heat emanating from my body. So it went. For almost an hour I staggered my way through questions.

Part of the ritual of torture that constitutes the oral examination is waiting outside the closed door as all your inadequacies are discussed by the committee. I waited and waited and waited. After 30 minutes solemn faced faculty filed out and I was alone with Muller in the room. "Because I told the committee how good your research is and its importance to genetics, they agreed not to make you take these oral examinations again. But Cleland said he would not sign his approval unless you took a written examination on cytology. Schedule it with him and I'll see you at the party at my house tonight."

At the party, Muller was in a good mood. When he introduced me to one of his house guests, he said "This is Elof Carlson, he's recovering from a severe case of plectonemia." I was reassured by some of the faculty on that committee that while my performance was awful, they found no correlation between performance on these oral examinations and the quality of research or success in a career that a student eventually displayed. It was certainly a generous helping of humility rubbed into my face and a reminder of how little I actually knew.

The more I worked on the dumpy gene, the more I liked it. I had exhausted most of the obvious crosses to do to test a two- or three-part model of this gene. I was preparing a stock that had outside markers with eye characteristics (echinoid and clot) that I could follow which were superior to the older markers that were farther apart. I was using a cross in which one parent had a combination of three traits that I symbolized as **ed olv cl** and the other had one trait, that I represented as + **v** +. I crossed the offspring to a stock that was designated **ed ov cl**. This should have given me two categories of offspring, one showing **v** and the other showing **o** and **v**. I was trying to put **ed** or **cl** on the **v** form of the gene. Among all of the expected flies was one that was normal for the dumpy trait but it had the brown eye color of the **cl** marker. I looked at this gorgeous fly as it slept among its etherized siblings. In an instant a shiver ran down my body. This was no contaminant. This was a crossover that had occurred between **olv** and **v**. My old model of two or three chunks of this gene was dead. There was no limit to how many pieces I could potentially find in this gene. I realized my work now made the structure of fruit fly genes no different from the structure of virus or bacterial genes. All of this was running in my head as I looked at this fly. It was about 2AM and I was all alone in the lab. I ran from room to room. No one was around to share this with. I ran to Sonneborn's lab. None of his students were around. I had great news and no one I knew was in the building. I had to exult alone and thrill to that once in a lifetime experience that makes the graduate experience so unique. I, alone, among four billion people on earth, had the privilege of jarring loose from nature one tidbit of knowledge that was not known before.

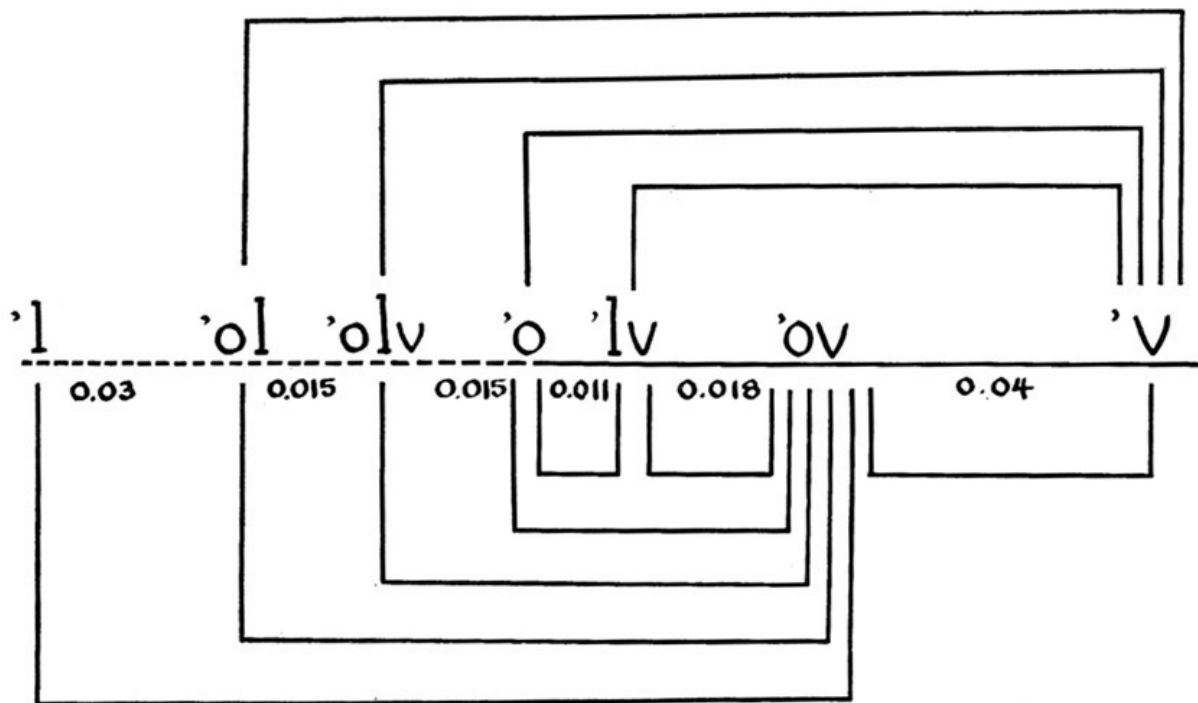


FIGURE 3.—Map distance relations of the seven mutant genotypes of the dumpy series. Dotted line indicates provisional relation is based on differences in recombination with 'ov. Solid line indicates unequivocal direct recombination between adjacent subloci.

Within a few months after this first recombinant in the dumpy locus I had found the locations of all seven of the major allelic types. I published my dissertation work in the journal GENETICS in May 1958.

CHAPTER 33

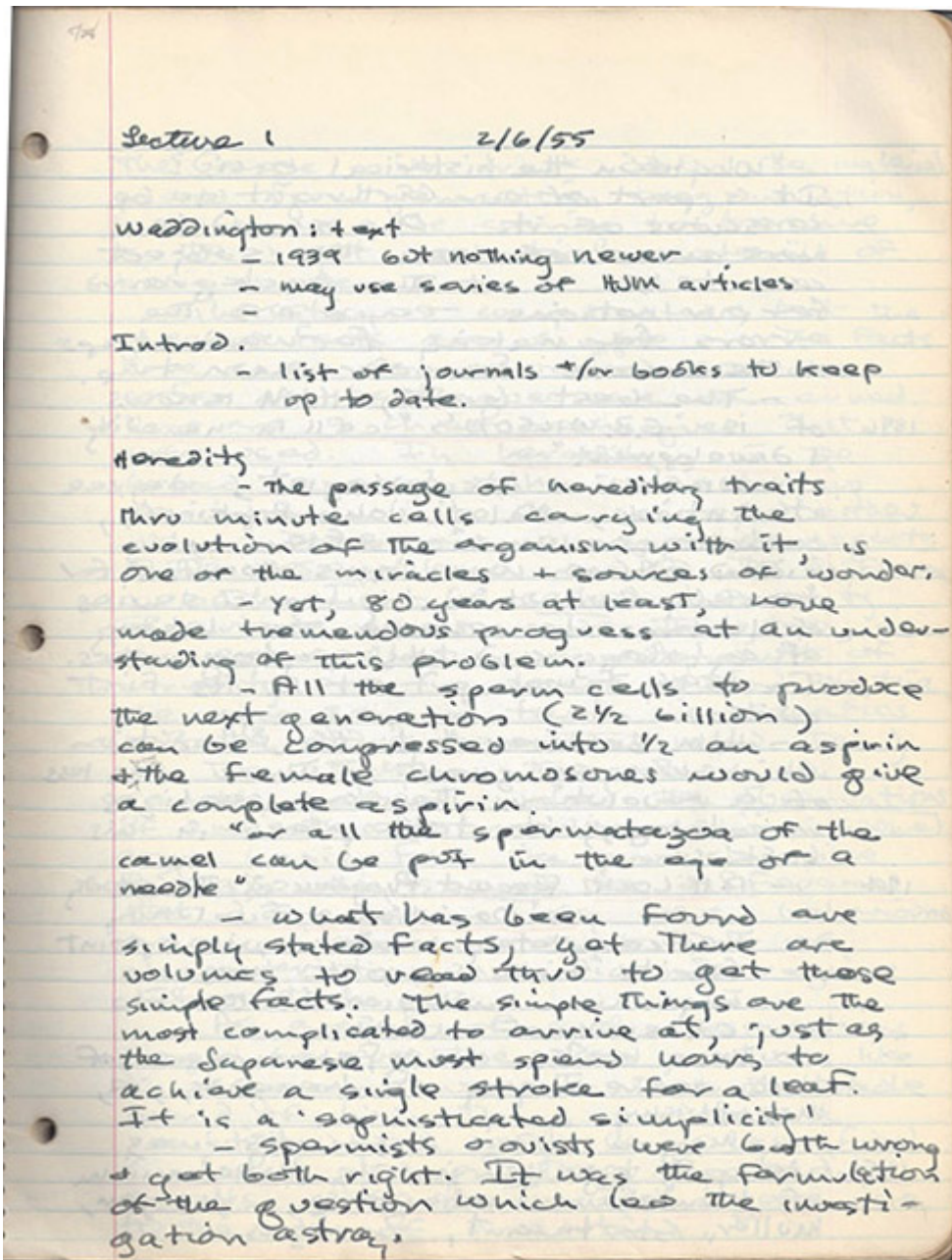
MULLER AND ME

The apprenticeship that a graduate student enjoys with a sponsor over four or five years in the sciences is intense, exhilarating, frustrating, and demeaning. No one outside a parent or a spouse has more influence on your life and knows you that well. Unlike a boss who has a mercenary connection to your productivity, a graduate sponsor is mentor, parent, teacher, guru, friend, competitor, tyrant, and colleague. It is not uncommon that the relation also becomes a love affair and that the mentor ends up marrying a former student. At one time it was expected that female graduate students would end up as a sponsor's wife. That was almost a tradition in the German professorship throughout the nineteenth century and it was nearly that at the turn of the century in the American graduate school.

I took three of Muller's graduate courses. The first was *Mutation and the Gene* in the spring of 1955 when Muller was back from sabbatical. Muller used a 3 inch by 3-inch square of white paper to write his notes in pencil and he rarely looked at the notes when he lectured. His object was to follow the history of the gene and mutation from the turn of the nineteenth century to the present. He would often relive the battles he had with his colleagues over the decades in "the winning of the of the facts" as he called it. His mind would go off in tangents and students who liked well organized presentations and main points clearly brought forward would be lost. I loved it. I realized Muller thought on his feet and he was reliving history. I became an eye witness to a forgotten past because science, to all but historians of science, is a history of winners. The also-rans, like the digested losers of natural selection, disappear from the main stage. I absorbed the anecdotes, the historical background, the personality conflicts, and made

sure I would not forget them. To my classmates they were often background noise or amusing stories of no significance to examinations or the building up of a body of knowledge. They complained Muller was a lousy teacher because his examinations were impossible to study for and no one seemed to figure out where he was leading. I got a different impression. This was one insecure guy who let you see his lacerations and who was a tough competitor who would not let a shallow claim rest. I also realized that he was seeing relations while he lectured that weren't on his notes. He was actively being a theoretician and creating new knowledge while talking to us. This was an opportunity to see how a Nobelist thinks.

I knew Muller's exams were tough and I would either ace them or bomb them. When he introduced us to the Watson-Crick model of DNA structure which we encountered for the first time in his course, his examination asked, "Discuss how the Watson-Crick model of DNA might explain the pairing of chromosomes in meiosis." It took another 35 years before anyone figured that out! Muller wanted us to reason, to speculate, to fall on our faces trying to make sense of biological phenomena. It was this course that began planting the seeds of my future books.



My class notebook for Muller's Mutation and the Gene course. Muller was back from sabbatical leave and this was the first of his courses that I took. I liked capturing Muller's thoughts like "sophisticated simplicity."

The *Genetics laboratory* course that happily led me into my dissertation work, was another conception that Muller had. He reasoned that good geneticists have to do experiments and they need to learn the techniques, ideas, and habits that lead to good research. It was an exhaustingly time-consuming course and we frequently had to come in at odd hours to

complete our counts, collect our flies, and set up our matings. We spent many more hours figuring out our data and writing these up for our laboratory results. Little of this was cook-book exercise. These were complex genetic stocks that had to be tried out to appreciate how well they worked and what could go wrong if they didn't work. Muller taught the laboratory course in the Spring.

Muller would offer a third course each year. One year it would be *Radiation genetics* and the alternate year it would be *Evolution*. Unfortunately, I missed out on Muller's evolution course because he was away or too heavily committed to teach a second course for those years. But I did take his radiation course. This too was approached with historical excursions and much meandering. But as he led us through those early years when radiation was first recognized by physicists and physicians to burn the skin, cause fingers to go numb and become ulcerous and as these early practitioners began to die of leukemias and other radiation induced cancers, he brought their plight together with the events of their colleagues who were using radiation in a vain attempt to induce mutations but who did see damaging effects on cell division, on chromosome shape, and on embryonic development. The lines of evidence kept piling up those x-rays were somehow disruptive to the nucleus of the cell. For a long-time, scientists were misled, and thought that radiation at even the highest doses would only double the mutation rate. But as Muller reread the literature in the early 1920s, he rejected this idea and designed the genetic stocks that would lead him to his Nobel Prize work. As I sat in the class listening to these lectures, I felt like an invisible and silent witness who saw him shaping the ideas and experiments that brought him international fame.

But Muller then surprised us. By the time we got to current ideas on radiation genetics, he raised an issue in a novel way.

"If I put a drop of arsenic in your coffee every morning, you would not notice it. You would do your work and week by week you would get a drop a day until one day, perhaps a year after I began, you felt quite weak, your hair and teeth might fall out, and you might even die. Is this murder?"

“Suppose I release a small amount of radiation that silently enters your body as well as a thousand others, and I do this every day, and over the course of several years, you, but not the rest of those exposed, get leukemia and die, is this murder?”

“Every court in this land would call the first case murder, because it is easy to identify the arsenic as the cause of your death. But if your government was the source of that radiation, no court will find criminal action, because your chance of dying is only ten times higher than it used to be and no one with certainty could show the radiation caused your leukemia.”

It was such a profound insight into the radiation controversy that I was electrified listening to it, and I realized the tremendous power of the lecture as a means of communicating knowledge as well as stirring our moral feelings. It made me appreciate that great lectures do not have to come from good teachers. It was the ideas and the power of the knowledge conveyed that made Muller’s personal approach to teaching so effective.

We held a weekly laboratory meeting every Wednesday evening. Muller would discuss the experiments he was doing, and we would give him some idea of our experiments, each of us about every six weeks having to make a progress report. Muller also used these formal laboratory meetings to raise some of the political issues he faced. He told us that after we graduated, we would find ourselves from time to time being asked to testify about radiation genetic hazards and getting ourselves involved in the public debates over radiation safety. We thought this was silly. We were just graduate students, not Nobelists. But it turned out that all of us did find ourselves testifying, sometimes for those in the nuclear industry and sometimes opposing them.

As the only Nobelist in genetics between 1946 and 1957, Muller was much in demand as the Atomic Age opened up and the Cold War made extensive use of nuclear weapons for its arms races. This meant he had a steady flow of visitors. We got to meet other Nobelists and prominent scientists as they stopped off in Bloomington to give a talk or just to chat with Muller on the genetic issues that touched public life. At professional

meetings in the US or abroad he would take us to meet Jim Watson, Francis Crick, JBS Haldane, Charlotte Auerbach, Julian Huxley and other household names in the world of biology.

I learned Muller's habits. He worked seven days a week and loved his work. He did not want to retire and tried to work until he was enfeebled by his congestive heart failure. He talked to his flies, calling one of them a "good little girl" if he was selecting virgins, and he used a number of symbols to indicate what stage of stock design he was reaching. Many of these involved the use of bird feathers he would pick up on his way to and from his home. I asked him why he used them, and he said it went back to his childhood when a good deed was "a feather in one's cap."

Because he was so busy, it was difficult to see Muller outside the class or outside a formal appointment in his office. We devised different ways to encounter Muller. We knew when he went to the men's room, and Irwin Oster regularly chanced to pee side by side and chat about their work. Irwin also used to have a habit, in Science Hall, before our move to a new building at Jordan Hall, to walk down the corridor past Muller's room, stoop low so he could check under the door ledge to see if there were a light in the room and that way he'd know if Muller was in. Soon the rest of us used that method if we were looking for Muller. The janitor who watched this, one day asked me what sort of person Muller was who required his students to bow as they passed his office! My favorite maneuver was to wait for Muller to head to the stairs, run down another exit and meet him as he was about to buy a candy bar in the basement vending machine.

The formal appointment was scheduled by Sue Hickham, who served as a palace guard. She made sure Muller's time was preserved because she knew he'd have little time to write if we all could see him on demand. The one-hour sessions with Muller were intense. We came prepared with our notebooks and drafts of articles and Muller would go over our design, our data, and our interpretations. If we were writing an article, he would begin penciling corrections and suggestions and these would fill the margins and the page would be festooned with penciled balloons leading to the offending and inadequate phrases and ideas. We would get quite heated up

during these sessions because each new thing Muller required meant days or weeks of work. We also felt defensive about our interpretations. I remember many times jumping up or Muller jumping up and raising our voices as we would scream out that the other is wrong and then our hands would wave, and we would begin chasing each other around the table trying to pin the other down and convince him that he was wrong. Sometimes these lacerating sessions could be heard out into the hall, and every so often I or another graduate student would hurtle out of the door, slamming it behind, and go sulk in the office. Despite these emotionally drenching sessions, we all agreed in retrospect that they were exhilarating and that we learned more genetics in that one hour than in a hundred hours of casual coffee cup conversation.

I came to appreciate Muller as a person. He cared about us. He would help students financially by putting their spouses on the payroll as technicians. He would sometimes write a generous check when an impoverished student had a child. Pete Oliver told me that during the depression, when he was a student at Texas, Muller gave him the money to buy a suit for an interview because he didn't want him to lose a job by looking shabby. He had the idealism that led many Americans before the Second World War, to become socialists or communists in the belief this would lead to a more just world. The bitterness of his experience in the USSR still rankled him. He knew he had been duped but it did not make him embrace the right-wing acceptance of an inherently unjust world that should tolerate, for the benefit of an open marketplace, poverty, racism, sexism, or the exploitation of others.

Working all those years with Muller made me realize how much more we have in common with great people than how much they differ from us. He had his inconsistencies, insecurities, and occasional insensitivities to our needs. He sometimes goofed off and drew doodles, enjoyed gossip, and wasted energy on trivialities. He never got over the poverty of his youth and he would weigh rubber bands before purchasing them in bulk to see which company gave the most per pound. He made his food preparators pour exactly the number of vials and bottles of food he needed for his experiments while we graduate students would order these by the tray. He

bought a year's supply of canned food for the laboratory cat, hoping to keep mice from pulling cotton plugs from our vials, only to have the cat run away a few months after he brought it to the laboratory. He saved paper by writing on scraps and rough drafts of his correspondence. Once he filled out a sheet of paper in dense penciled notation and then took a red pencil, rotated the paper ninety degrees, and continued writing the design of the stock he wanted me to prepare.

Muller had a hard life. His father died when he was about ten years of age leaving Muller and his sister in a marginal existence. He went to school on scholarship and workload to support his mother while he was going to graduate school. He became a socialist as an undergraduate at Columbia College and after graduation tried to go on in physiology but realized his love for genetics was too strong. He became one of Morgan's graduate students and was in constant envy and rivalry with A. H. Sturtevant who was Morgan's fair-haired boy. The favoritism rattled him. His personality clashed with Morgan's and his political activism seemed inappropriate in an era when scientists stayed within their ivory towers. He went to Texas, recruited by Julian Huxley before Huxley returned to fight in the First World War. Muller had a falling out with Morgan and developed his own genetic program, competing with Morgan and his students. He became active for communist causes in the depression and edited an underground newspaper, *The Spark* (named after Lenin's *Iskra*) on the University of Texas campus. He attempted suicide as his marriage collapsed and he felt his work was being frustrated by his colleagues at Texas. He denounced the American eugenics movement in public as elitist, sexist, and racist and claimed eugenics would only work in a socialist society. He left the US for seven years, going to Berlin until Hitler came to power, then to Leningrad and Moscow only to be engulfed in the Lysenko controversy and to experience having two of his students arrested and executed as Trotskyites. His first wife left him for his graduate student, the most depressing of all academic nightmares. In later life he was a pariah among his former communist admirers and his former Cold War patriots who thought Muller was untrustworthy for his past flirtations with communism. He became a voice for Everyman. He rebuked the medical profession that failed to

protect itself and its patients from improper doses of radiation. He criticized the fledgling nuclear industry and in committees argued with dogged persistency, exasperating other members, for the lowest doses that would be released from the reactors that would give us, they claimed, virtually free energy. He criticized the US and the USSR for their weapons races and their testing of nuclear weapons using a small but measurable portion the population of humanity as necessary sacrifices through the induced mutations and cancers they caused. He was indeed self-centered, crude, demanding, and inconsistent as a mentor. But he was a triumphant advocate for all of us and the belligerence he honed on our papers was trivial compared to the full weight of his concern to protect humanity from those who did not care for, who did not believe in, and who did not want radiation protection.

CHAPTER 34

MY FIRST COURSE

There are few professions where the formal preparation for a career is so minimal as teaching at the college level. Unlike elementary and high school where many “philosophy of education” and methods courses are required, no such preparation exists for college teaching. At most a loose supervision of teaching assistants substitutes for the exact certification of competence that kindergarten to 12th grade teaching requires. The prevailing philosophy at the graduate level, is that a scholar is smart enough to figure out how to convey knowledge and that any effort to certify the teaching of a scholar would lock it into conformity, defeating the purpose of scholarly inquiry and the diversity that makes students open to new knowledge.

My first teaching experience at Indiana was in the laboratory. I was a teaching assistant for two or three sections each of my first two years of graduate education. The first year I spent in the zoology course and the second year in the comparative anatomy course (redesigned by Torrey as a developmental anatomy course to fold in embryology). That first year I audited Breneman’s lectures for the zoology course. He was an endocrinologist and a first-rate teacher, much appreciated by the students because he did careful outlines, brought school spirit into the lectures, and knew how students learned. He would go through an October lecture on life cycles of invertebrates, make his outline, erase everything at the last minute of his lecture except the first letter of each itemized phrase, and the message BEAT PURDUE would appear to the delight of the class.

In laboratory we were told not to lecture, to help students with their dissections, and to answer their questions. I quickly learned that whatever diagram is reproduced in a text book or laboratory manual has no

resemblance to the structure found in the living specimen. I also learned that the location, size, and relation to background tissue varied from specimen to specimen. This was the variation of Darwinian evolution seen first-hand and I enjoyed the challenge of finding blood vessels by following their destination and places where they would hook up to other major blood vessels. It was a terrific way to learn what we should have learned as undergraduates. Since there were usually about 30 students in a laboratory, we would rotate through the class, enter the store room tucked in one corner of the laboratory, emerge out the other door, and begin our cycle again. Very quickly I set up a chess board and arranged to play games with the other TAs, thinking about my moves as I'd go from station to station and answer essentially the same queries from my students. The students never knew we were playing chess in our brief passage through the store room.

I got to know quite a few students by talking with them and it was fun to learn tricks of the trade from other TAs who had more experience. I learned that those females who liked us would lean forward and slide their breasts to touch our arm as we'd point out a structure on a dogfish, a frog, or a rat. Of course we knew better than to respond because we were carefully warned not to fraternize with our students.

There were unpleasant parts to this job. One was assigned to me in the developmental anatomy course. Students had to pith frogs. This meant they had to stick a stiff pin into the neck of the frog push it into the brain, swish it around to scramble the brains into minced pieces, and then shove it down the spinal cord, obliterating that nerve trunk. Torrey decided this would be too difficult for the students for one of the exercises because there were too many squeamish students. So he gave me a bucket of frogs and a frog pin which looks roughly like a dart with a long needle. I took the first frog and shuddered as I murdered it. Its legs shot out as I poked the needle into its spinal column. I plopped it into an empty bucket. In each case, I had to hold a struggling frog in my left hand, bend its head down with my thumb, and like a matador, insert my mini sword into its neck. Corpse two hit the bucket with a gentle thud. By the time I was into my tenth frog, I was getting quite proficient. There was a rhythm to it, and I could do it without wasted motion. Suddenly the thought hit me. This is how the Holocaust

worked. It's easy to become desensitized to unpleasant acts. You no longer think about the significance of what you are doing. It's also how the military works and how pilots can press a button or pull a lever and wipe out 80,000 men, women, and children at once without much remorse.

Except for my one talk in my first year, I had no college level experience speaking to a class and it was expected that would come when I entered my first teaching position. Sonneborn planned a sabbatical year in 1957-1958 and he remembered my skill in the graduate journal club presentation. He recommended that I be given a modest stipend to teach his genetics course while he was away. I immediately accepted the offer and figured it would be a good opportunity to learn to teach while writing my dissertation. I only had the qualifying oral to take.

That qualifying oral, of course, was a disaster, and so was my marriage. I ended up entering the Fall with Sonneborn's course to teach, my marital wounds to lick, and my defeated ego to restore. Sonneborn didn't want to back out and he recommended that a parade of faculty assist me with one spot lectures. I agreed to these changes. I showed him the outline of my course design and he approved it, not with enthusiasm, but with a cautious smile and several changes he felt essential to make the course work.

I had long ago discovered the miraculous therapeutic effects of the "work cure." By plunging myself into work that filled every hour of the day, I would push aside all doubts, worries, and blue feelings. In its place were the results of work. This meant, in my case, success, because whenever I threw my energies into projects I liked, I got unexpected results and quickly seized on these and came up with discoveries, happy ways of linking things, or the thrill of mastering what I only knew in a superficial way.

I had about 300 students in the course, almost all of them very demanding premedical students. I began to immerse myself in preparation for the first lecture. I soon discovered I was spending more than a week on it, and I had a fat wad of papers and notes just for day one. I got up in front of a sea of students. I was terrified and propped my knees against the podium and began using my notes and hurtled through a monologue with

myself. I had lost the class. I struggled through the hour and was drenched through in sweat. I had blown it. What to do? I went to Breneman and told him what I had done. He knew. He had sat in the back of the auditorium, and I was far too nervous to know he was there. He gave me lots of good advice. I had to project my voice and that meant talking to the person in the last row and not the front row. I had to raise my voice when I went to the black board to compensate for the rebound from the blackboard. I had to write larger. I had to bevel my chalk with a finger nail so it wouldn't squeak. I had to draw, on a sheet of paper, a rectangle as if it were the black board and plot where my diagrams and sentences would go. I had to use brief phrases instead of full sentences in my outlines so I would be dependent on my speech and not on what I had written.

Each lecture got better. The skills Breneman taught me worked. I also made a discovery of my own. I could use my research skills to analyze my lectures. I learned to listen to the class and figure out when I was losing the class and how to change my pace. I learned to modulate my voice and learned when to pause and how to repeat without sounding repetitious. It was wonderful to wean myself away from the notes themselves and to feel the knowledge coming out of me, with the enthusiasm of teaching pouring out. I learned how to draw out of my life experience and enliven abstract knowledge with concrete examples students could relate to.

Perhaps the most important thing I learned that first year was how much teaching and research were connected. I had written a first draft of my dissertation and was arguing my way through, section by section, with Muller. I realized when I was reading about the Rh blood groups that there was a similarity between their attributes and those of my dumpy locus. I thought my model of gene structure might apply to the Rh series and I began playing with the information I dug out of the research articles in this field. I tried it out in my class. My class never knew that the material that entered my first published article in the *American Journal of Human Genetics* came from the course that I was teaching them.

It was nice to get feedback from the students that they enjoyed my lectures more than the presentations by the guest lecturers. I had Fernandus

Payne, Muller, Cleland, and Dean Fraser (a viral geneticist) make presentations.

I learned how to design examinations that covered what I actually presented in class. I was appalled when I learned that there were students who flunked my exam. I felt like a physician who loses a patient. How can that be? I know it, why don't they? I felt guilty, as if I had let them down. It took me years to accept that no matter how much effort I made in teaching large classes there would be students I could not rescue.

It gave me tremendous pleasure to teach meiosis and know it. I learned there is no better way to learn a topic than to teach it. It forced me to strip it to its essentials, to dispatch the details that torpedoed understanding, and like Brancusi's magnificent sculpting of *Bird in flight*, the topic would soar.

I made mistakes. I assigned a paper for them to do and gave no limit to the amount of pages. Muller's German student turned in a 75 page treatise on the races of man with pictures clipped from his Nazi textbooks, showing the profiles of handsome blonde Teutons with chiseled features, ready to mount the stage to play *Parsifal*, and the semi-demented pictures of Negroids from Papua. Most of the papers were well researched but a couple made me aware they were copied. One student was so stupid he even included the professor's marginal comments in the paper. The fake papers gave themselves away because the references were dated and there were no recent ones. I called in these cheaters one by one and if they confessed, I made them redo the assignment and they had to bring their library notes to me before writing the paper. The ones who denied cheating tried to make me into a tyrant or a paranoid who was deluded, including the student who used a fraternity file with the included professorial marginalia! Those students got an F for the assignment. In every case I offered the culprit an opportunity for proving his or her innocence by asking for the library notes they used and invariably they said they lost them or threw them away.

My first course turned out to be a success. Several students in the course evaluation praised my delivery, my energy, and the immense amount they learned. I had learned I could not only rise to the occasion in giving a seminar lecture to my peers, but I could find pleasure in teaching to large

audiences. Most of all, the work cure had its effect. My wounds were healing, and I was ready to date again.

Reprinted from *AMERICAN JOURNAL OF HUMAN GENETICS*
Vol. 10, No. 4, December, 1958
Printed in U.S.A.

The Bearing of a Complex-Locus in *Drosophila* on the Interpretation of the Rh Series¹

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TWO MAJOR HYPOTHESES have been offered concerning the genetics of the Rh factors, one by A. S. Wiener (see review, 1954) and the other by R. A. Fisher and R. R. Race (see Race and Sanger, 1954). In Wiener's concept the various mutants of the Rh system are multiple alleles of a single gene. The Fisher-Race hypothesis assumes that the three major antigens, C, D, and E, are the separate products of three closely linked genes symbolized, in their presumed map order, by the letters D, C, and E. These three genes with their corresponding alleles would form a series of eight possible genotypes for any chromosome containing the Rh region.

Attempts to prove either theory directly have been unsuccessful because of the difficulty involved in obtaining the large number of pedigrees which would be necessary to test a close-linkage theory. Proponents of each interpretation have tried to use population analysis for contradiction or support of the close-linkage theory, which would require equilibrium values in long panmictic populations but a relative rarity of certain crossover types unless the panmixia has been exceedingly ancient; but this study has been hampered by inadequate knowledge of the history of the populations in primitive times.

Supporters of the Fisher-Race theory maintain, in addition, that the adoption of their close-linkage theory would enable the nomenclature of a CDE type to be easily acquired by technicians. On the other hand, according to advocates of Wiener's theory, such a system would result in over-simplifications and possible misclassifications for such important aspects of the Rh field as forensic medicine. Each side has hoped to have its system considered as an international one which would obviate the learning of two systems.

The problem of nomenclature is important not only in the Rh controversy but also in the study of pseudoallelism itself. At present no international agreement has been reached and each investigator has used his own terminology for his particular studies. It is to be hoped that an international agreement will be reached once

Received May 26, 1958.

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The author wishes to acknowledge the encouragement, criticisms, and helpful suggestions of Dr. H. J. Muller in the course of this investigation and its application to the Rh series. Support for the genetic analysis of the dumpy region was provided in part by a pre-doctoral Fellowship from the NSF 1955-56, by a pre-doctoral Fellowship from the NIH 1956-57, and by grants to Dr. H. J. Muller and associates from the U. S. Public Health Service and the Atomic Energy Commission (Contract AT(1-11)-195). Thanks are also expressed to my fellow graduate students and colleagues elsewhere for the stimulating discussions which helped to make this research possible.

My first journal publication in 1958 was inspired while preparing a lecture on blood groups for Biology 300—Genetics— that I taught while Sonneborn was on sabbatical.

CHAPTER 35

BECOMING A FATHER FOR THE FIRST TIME

Helen's decision to have a child with me was welcome news. I think that week in Brooklyn while visiting her parents was the most loving, we shared together. When we got back, we were back to our separate worlds again. We were delighted when the drug store test confirmed Helen's suspicions that she was pregnant, and we got a physician to look after her pregnancy. There was no health insurance then. But that meant what doctors charged was reasonably affordable. It would cost us \$50 for the delivery and \$50 for the hospital. In those days physicians charged on their assessment of what a patient could pay. Students were in a poverty level because they had a subsistence salary. Helen had a modest stipend from the English department, and I had a National Science Foundation Fellowship. We paid no tuition, but we paid for our housing and utilities. We had moved from our first house near the railroad tracks to a place closer to school. The landlady told us when she saw Helen was pregnant that we would have to move because she didn't want children in her apartment building. There were no discrimination laws in those days. We moved to a place three blocks North of Kirkwood and about two blocks from Walnut. It was a fairly big hike to walk back and forth to Jordan Hall, but I liked walking. The landlady was a widow who lived with her daughter. She hated noise and "Japs" and lived her days as if World War II never ended. She told us not to walk with shoes on in our apartment. We should either use our stocking feet or buy slippers. She liked to let us know if she heard our radio going by calling and hanging up. Helen, of course, was deaf, so she had the radio on loud to enough hear.

Helen's parents came out by car from Brooklyn. We put them up in our apartment and waited several days past the due date before Helen's contractions were frequent and close enough for her doctor to tell her to come to the Bloomington General Hospital. We sat in the waiting room. In those days only medical personnel and the mother were allowed to be at the birth. We arrived about 7 PM and when it was 11 PM the doctor came in, told us it would be a very long time before the baby would come so we should go home and if anything was going to happen, they'd call. We drove home and went to bed.

At 6 AM the phone rang. "Congratulations! You became a father." I learned a baby girl had arrived and she was doing well. My in-laws said they'd drive me over as soon as they washed and dressed. I told them to meet me there and I bolted out of the apartment as soon as I got my clothes on and began running the fifteen or more blocks to the hospital. It was dark and the autumn air crisp. I felt exultant as I gulped in the air, running all alone down the empty streets. I was as filled with joy as if I were God on one of His creative days. Tears of happiness filled my eyes. I gasped for air and had a stitch in my side as I finally arrived at the entrance to the hospital. At that moment my in-laws drove up much to their amusement.

Helen was still groggy. She looked at me, frowned, and groaned. I didn't know if it was pain or disgust. We soon got to see baby Claudia. She had a fuzz of black hair and jet-black eyes. We did the middle-class thing. We got the bassinet and a crib. Claudia was bottle fed, so we took turns heating the bottles and learning how to recognize that a baby was distressed. Helen did what was traditionally the woman's role. She diapered the baby, but we used a diaper service to clean the diapers and bring fresh sterilized ones. We soon discovered that Claudia wouldn't hold her milk. If I picked her up, I had to have a towel draped over my shoulder because she heaved her food in a plop on my clothes. Our doctor said it was just an immaturity she'd outgrow. Helen and I were inexperienced and afraid. We sought a specialist's advice and when we brought her to the hospital to be x-rayed, her regular physician was furious and felt betrayed. In those days a doctor expected unquestioning loyalty. There were no second opinions and seeking a specialist's advice trivialized the doctor's career. The x-rays confirmed

her first physician. She didn't have a blocked gut. She had a pylorospasm and it might be triggered by an allergy to milk. We switched to a soybean substitute, and I spent a bundle on cans of that product until she was weaned.



Helen Carlson and baby Claudia 1957.

When we separated, Claudia was still an infant. Helen moved to the housing unit for students with children. These were like army barracks. An even older set of units, Quonset huts, had been set up on the other end of campus for returning veterans on the GI Bill, but those were being replaced with the new Hoosier Courts. When Helen and I lived together, she lost interest in the house and there were dust balls under the bed. Now, living with Claudia and shaping a life for herself, she kept the house spotless. I came every weekend to baby sit while Helen went to the library, visited, or ran errands. I entertained Claudia by jiggling my keys on a chain. She tried to catch them. We played indoors and sometimes I would sit out in the sun reading a book, with Claudia in the crib playing with her toys. A

neighboring woman taught me to be more like a mother. “There’s something in your daughter’s mouth.” I pulled out a chunk of a soda bottle. Claudia smiled and drooled.

I took Claudia to Jordan Hall as soon as she learned to walk and played hide and seek with her in the corridors. The IU campus was like a gigantic playground with its creeks, wooded glens, immense Union building, wooden benches, gardens, and manicured fraternity and sorority buildings. It was always easy to find something else to do, from feeding birds to nature walks. I was determined that she would know she had a father who cared about her.



Shortly after I married Nedra in 1959 we spent the summer at Cold Spring Harbor and on a visit to New York, I took Claudia to Central Park to meet Nedra (upper right).

CHAPTER 36

COURTING NEDRA

As soon as I entered the final grades for my course, I looked up one student who had written a very flattering review of my course. It meant going through the three hundred final exams to match the handwriting but that wasn't much of a deterrent. I called her up after intersession and asked her if she'd like to go out on a date. She was a bit startled, and I had apologized to her that I had used so devious a method to identify her. We did go out. She was a nice, shy Methodist who didn't drink alcohol and who was only a sophomore, so she was a bit intimidated by me. We saw a movie, had a dinner, and then I took her home to her dormitory and there were dozens of undergraduates saying long good byes and most of them kissing. I had not been to a group kiss-in before and this was intimidating to me so I didn't kiss her, which was probably the right thing to do because she acted somewhat fearful that I might actually pull her to me and engulf her with a kiss. I thanked her and that was our only date. I learned that she had gone out because she wanted to see what it was like to go out with an instructor and that she had no intentions of following that up after the date.

I was glad that I had gotten over my failure in marriage and that I would once again explore my emotions and seek a person with whom I could live in marriage. I was not suited for a bachelor's life. That would have made me a monastic masturbator for life because seduction was not part of my skills or desires. I then turned my attention to single graduate females. There was a student who lived in the same apartment building on Henderson Street and she and the guys in the building would often chat during the evening and she often prepared dips and had other snacks for us as we'd talk politics and school. I once kissed her and was even planning to

go farther but she said “No, no,” and I immediately released her. Date rape was not my style. I then shifted to Jordan Hall and there were several students in Sonneborn’s laboratory that were eligible. One was engaged at the time to a professor she had met in her undergraduate institution, but he was about 30 years older than she was, and it was clear to me that this was not a serious commitment on her part. We dated for a while, but I felt it wouldn’t work although she was very interested in me. Our personalities differed too much. I then switched to a shy tall girl who was very scholarly and those were all features I liked, but after a few dates we both realized, this wasn’t going to work out. I was not disappointed by my failure rate. This was what I should have been doing in high school and I was just developmentally delayed by eight to ten years.

I was finishing off the last experiments for my dissertation and a good part of my writing for it was complete, argued through with Muller, and looking more and more like I’d be out of IU in August. I had a paper to give in the Montreal Congress. I was on the job circuit doing interviews, and I was writing a lot to let my family and friends know how I was doing. It was still only three cents to mail a letter and I had run out of stamps one evening in the lab. No one had any in Muller’s lab and I wandered about and finally found a student in Botany who told me to go up to Briggs’s laboratory course room where there was a student who worked at night. I went up, saw the light was on in the classroom, and knocked. A somewhat cautious undergraduate answered. I introduced myself and asked if she had any three cent stamps. She did. I then asked her why she was here alone at night. She said Briggs’s course on embryology was one that she loved and that since she had to work in the dormitory cafeteria during meal hours, this was the only time she could find where she could do the experiments over an unbroken stretch of time. I asked her if she would like a cup of tea in my laboratory on the second floor and that I would prepare it and she could come down for a break.

I went to my laboratory room and prepared some tea and waited. After a lengthy wait, I took a cup of tea to her, and we continued our talk. I liked her. Her name was Nedra Miller. She had been a premedical student but was now considering theology and was planning on going to Chicago

Theological School. She came from Northern Indiana, from a town called Rochester in Fulton County that was half way between Indianapolis and South Bend. I told her about Muller's laboratory and that I was looking at jobs in New York, Missouri, and Canada. It was fun talking with Nedra because she was very open, and we didn't have to grope for thoughts to sustain a conversation.

I came by the next night and this time Nedra was somewhat agitated. She asked me. "What do you want of me?" I wasn't prepared for that question so I told her about my failed marriage; I was father of a year-old daughter; I was an honorable person; I wanted to date her; and if things worked out I would marry her! I don't know if that is the answer she expected to her question, but it seemed to have been the right thing to say. She agreed to go out on a date.

It was wonderful. We went to the Von Lee Theater to see art films. We had dinner out in the Pizzeria and other restaurants along Kirkwood Avenue. We both liked art and music, so we began going together to the operas, the concerts, and browsed in bookshops. We were both eager to learn and I learned that Nedra had been active in her National Honors society in Mishawaka High School. She was an intellectual who had wide interests. She came from a family of pioneer stock who came to Indiana in the 1820s from Pennsylvania and Ohio and even earlier had relatives who fought in the Revolutionary War. Her father was a journeyman mechanic and traveling salesman. Nedra, like me, had gone to a different elementary school every year. Most of her childhood she lived in a trailer with her older sister sharing a double bed the way Roland and I had shared a double bed. She had to earn her way through college. She was now a senior and looking forward to her stay in Chicago. She had a boyfriend who had seen her for about a year but their relation was a tepid one and he was considering going into the ministry or the navy, a curious choice in my own world view.

Nedra moved off campus and found a room in a house on Henderson Street about six blocks from my apartment. I would walk her back to her house and then we would hold each other tightly and kiss for what seemed like an hour. We both were in love, and I knew this was going to work. I

respected her virginity and did not force her to do what she did not want to do. Our late-night kissing and my creeping out of the bushes from the rear entrance of her house must have created suspicion because one night as I was walking back along Henderson Street toward the university, a car going the wrong way with the lights out approached me and suddenly a flashlight was popped out the window and shining in my eyes.

“You. Don’t move”

I froze.

“What do you have in your pocket?”

“Soap.”

“Show me.”

I pulled out a bar of soap, still in its wrapper, and handed it to the policeman.

“Why are you carrying a bar of soap?”

“I was on my way to Jordan Hall. That’s where I take a shower. I work there in Muller’s laboratory.” I told the police that I had walked Nedra home and gave her address so they could verify it.

I was let go and I learned from Sara Frye, who was a friend of the DA, that someone reported a peeping Tom on Henderson Street and the police were convinced I had binoculars in my pocket.

In my apartment there was a philosophy student, named Gallagher, who was about six foot six and immensely big. He had lots of girlfriend problems and lots of insecurities. His room was filled with symbols of his life. He was from New York and had been rebellious as a youth. He used to use his height to spit into the folds of hats in crowded subways. He was in revolt against his Catholic upbringing, but like Lou Wall, it was still part of him. On my birthday Nedra came by with a cake she had baked. It was a banana nut cake with an icing glazed over it. She was apologetic because it hadn’t cooked just right. I was ecstatic because I had never had a homemade birthday cake in my life. After Nedra left, Gallagher and I devoured the cake, each of us feeling the pleasure of savoring home-made food. I considered myself the luckiest man alive in having met Nedra.

As our courtship headed to the summer, I told Nedra she should take my summer course in genetics so she could learn what I do. She did and we tried to avoid acknowledging each other in class. I did not share the exam questions with her because I knew she was bright, and her Protestant ethic would not permit her to even ask me for help. I, too, had strong ethical standards about my teaching and would not have let Nedra even know when and where I was preparing the examinations. Nedra had her own motivation to do well. She set the curve on all the examinations.

I introduced Claudia to Nedra. Claudia was at a toddler's age of innocence, and she enjoyed walking with Nedra and me on the grass. Nedra and I took turns rolling a ball to her and holding her when she got tired. Nedra also arranged that summer for me to meet her folks and they drove down and brought us up to Rochester. Nedra's mother was also in sales. But she had a range of skills and had been an instructor for Singer sewing machines. From her mother Nedra learned how to sew and she made her own clothes. I got to see the Indiana farms that her relatives still owned and the charm of small town life in Rochester, with its courthouse in the town center and its small stores along Main Street for only three or four blocks before the town began melting into farm equipment and storage buildings and then into the fields and rural roads.

I learned that Nedra was active in the Campus Christian group. She belonged to the Disciples of Christ Church and through the World Council of Churches she had spent a summer digging out flooded villages in France near the Alps. It was like a Peace Corps activity before there was a Peace Corps. But Nedra's personal religious feelings were not ideological. Her father, Harold Miller, had rejected religion because his father, a farmer, was a frequent participant in evangelical revival gatherings who had a history of mismanaging money for get rich quick schemes and had several lawsuits that he managed to wiggle out of. Harold's youngest brother Bob had a much more positive view of his father. To Nedra's father, there was something phony about public professions of faith. He may not have declared himself an atheist the way my father did, but they were certainly alike in their disillusionment with the way religion so often slides into hypocrisy. Nedra's mother, Florence Dawald Miller, was also not a

churchgoer, whether out of deference to her husband or out of her own lack of enthusiasm for church. She couldn't sing a note and that can be a problem for participation in Protestant services that are punctuated throughout with hymns. Nedra was also fortunate that the campus minister, Bob Huber, was liberal in his views of Christianity. He believed in service to others and making the world a better place and he tapped the idealism of youth hoping that religion would be a guide to decency and the rejection of racism and injustice. On many campuses the Campus Christian movement becomes a fundamentalist movement, and its purpose is conversion to salvation theology where belief in Jesus eclipses all other activities and isolates such students into a self-contained cult. There was nothing in our dating that gave me the feeling Nedra was doctrinaire in her beliefs. She accepted my humanism and my atheism without letting it be part of her own deistic world view.

As the summer drew to a close, Nedra and I agreed to meet each other although we would be a distance apart. I had accepted a position at Queen's University in Kingston, Ontario. She was going up to Chicago and she would look for work there and find an apartment near the University of Chicago. We would correspond, find ways to travel to see each other, and both of us knew that if we still loved each other after our first year of these meetings, we would set a date for marriage.



Nedra and I were married in Rochester, Indiana on March 28, 1959.



JUN 2 1959

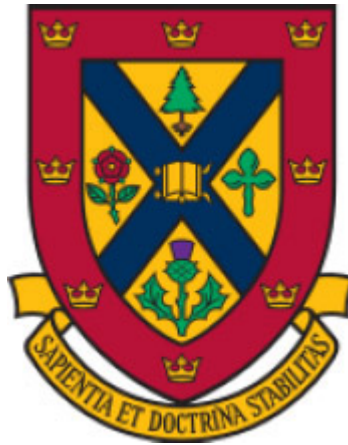


JUN 5 1959

Nedra and I at Cold Spring Harbor in 1959 enjoying our delayed honeymoon.

CHAPTER 37

QUEEN'S UNIVERSITY



“I have a job opening for you, Elof. ” Muller told me that three times. There was an opening at the University of Rochester, my first choice, because it was an elite liberal arts school with a distinguished reputation. There was an opening at the University Missouri. That was another wonderful place to go. It was where Lewis Stadler had independently discovered that x-rays induced mutations. It had many fine geneticists and would not be too different from IU in its wealth of culture it offered the students. But the third opening was a puzzle. “Queen’s University? In Canada? I don’t want to live in an igloo.” That was America speaking to its neighbor in the North, also part of America ; but no one in the forty-eight states would have called any other place America, with the exception of our acquired colonies, Alaska and Hawaii, now plugged into the field of stars in our flag. “Go there, Elof, you’ll learn that Canada is not what you think it is.”

I went to Rochester, New York, first and there was a huge snow storm. When I was picked up the plows had pushed six-foot heaps of snow along

the sidewalks, and I felt like I was walking through trenches on the campus. I had a good interview and thought it was in the bag. I then went to Missouri, and it was a cow college, more like Purdue than IU. Its architecture was uninspiring, and it was in that flat relentless Midwest plains. The stone Roman columns that were a landmark of the school, reflected ruin, not Classic splendor. A mathematician was on the committee that interviewed me. "You say you studied the dumpy locus. What's a locus?" I discussed how genes were mapped and that it was really a gene. He then asked me why I called the mapped regions of the dumpy gene "subloci." I once again argued from a geneticist's view and it made sense to me that if genes were represented as points on a map, then the regions within a gene would be their subloci. This was a bulldog mathematician, and he wasn't going to let a geneticist destroy the purity of mathematics. Subloci were subversive; they were abominations of mushy thinking; they were inconceivable because a point had no dimensions, so how could I or any geneticist be taken seriously by a mathematician when we came up with such ignorant concepts?" Goodbye job. I left and knew I had blown it.

I took the train to Kingston, Ontario and was met by Dean Rollo Earl. He had heard Muller in 1921 at the Toronto AAAS meetings and he quoted from Muller's speech on *Variation due to change in the individual gene*. He was a botanist who enjoyed teaching introductory biology to the students and had long since abandoned any pretense to doing research. Tall, thin, mustached, white haired, and formal, he was the image of Canadian correctness in my mind. He spoke with a Canadian accent, "out" was not "owt;" it was a muted "oot."

I loved the campus. It had gorgeous gray limestone and granitic brick buildings. There were black squirrels that scurried along the lawn. Everyone was friendly. I learned that they taught three years of college not four. The students going to college had to pass grade 13 in their high schools which were called Collegiate Institutes. They did not have semesters. I would teach for seventy-five lectures beginning in October and ending in April. There would be a one-month finals period and the students took five courses a year. All students took one year of English and one year of Philosophy. All their other courses were in their major or cognate fields.

All examinations were essay format except for problem solving and equations. If I got the job I would teach genetics to the arts and science students and a genetics course slanted to human genetics for the medical students, who were entered in the college of medicine in their sophomore year. "We consider ourselves to be the Princeton of Canada," Dean Earl informed me.

He told me to send him receipts for all my expenses when I got back to Bloomington. I was pleased that things went well and my seminar at Queen's was well received. I returned to Bloomington and got my refund check from Dean Earl, covering all expenses "except for the haircut, which we consider your personal expense." Muller told Sue Hickham, "When will Elof grow up?" I did not get the Rochester job. They chose a tenured professor instead. I did not get the Missouri job; it went to a molecular geneticist instead. That was a hot new field and Missouri wanted to get an early start in this new direction for genetics.

I did get the job at Queen's. Dean Earl later told me that the Department was concerned I might be a greedy American in listing my haircut, but he convinced them I was just naïve.

After my arrival at Queen's, I rented an apartment from a divorced lady who lived a few blocks from college. She was a pleasant but unhappy person who lamented being dumped by her husband after she had surgery for cervical cancer. She thought her short vagina was the reason her husband left her. She was mildly alcoholic and introduced me to Canadian Rye because she preferred not to drink alone. Most of the time I spent in my office or laboratory. I was assisted in building my laboratory with a grant from the National Research Council of Canada and I ordered the glassware, food media, plugging cotton, and other necessities. The machine shop built a food pouring machine for me. I hired an elderly gentleman named Mr. Joseph Lucas who was a general laboratory caretaker. He kept the preserved specimens and made the solutions used in the various biology courses and ordered the supplies for the classes. He would enjoy sitting with me in my laboratory and watching me work. I would be relaxed, without a tie, very informal in my American ways and he would be in suit, vest, and tie. When

sales representatives came in, they made a bee line to him, “Dr. Carlson?” and he would point to me, a boyish American, with tousled hair, wrinkled pants, scuffed shoes, and unpressed shirt.

I began teaching my two courses. This was the first year that faculty did not wear black robes to class. The classes started a week apart the medical school a week later. I had about 80 to 100 students in each class. The students were immediately struck by my American accent but soon they started streaming to my laboratory to visit. They were very friendly and eager to help me when I mimeographed handouts for the classes. All the freshmen wore a Tam O’Shanter with a wool pompom the color of their school. Arts and Sciences was blue. Medicine was red. The secretary of the department, Nancy Clark, made me a chimeric pompom that she sewed into a Tam that I wore. The school had high spirits and they were as enthusiastic as IU undergraduates for their football team, the Golden Gaels. I was invited to have lunch at the student cafeteria which was organized British style with long banks of dark wooden tables and a head table for guests. I was piped in by a kilted bagpipe band and all the students rose as I was led to the head table.



Aerial view of Queen's University Campus, Kingston, Ontario. Their football team was called the Golden Gaels.

The students introduced me to Canadian beer and got me drunk. I didn't know how alcohol-laden Canadian beer was. The next day I was my sober self and without so much as a wink, I launched into my genetics lecture to reassert my authority against my fallen state. I received a \$10,000 grant from the National Science Foundation, and this made the headlines of the campus paper. Grants from the USA were virtually unheard of. I continued my research and wrote every evening correcting the galleys on dumpy and

the Rh series for the *American Society of Human Genetics* paper. I also wrote my dissertation as a single large paper rather than splitting it into two or three separate papers. That went off to *Genetics* and was accepted for publication. I then reviewed the entire field of what was then called complex loci and contrasted what was going on in fruit fly gene structure with that in maize, bacteria, and viruses and traced the quest for gene structure to Morgan's laboratory. It was my first dip into the history of genetics, and I loved sleuthing the early history of these concepts. I sent that article to *Quarterly Review of Biology* and to my pleasure they accepted it.

I made trips down to State College, Pennsylvania using the bus routes that took us through the Allegheny Mountains. It was as isolated a campus as I had seen, a huge college town of some 30,000 students who would pour out of classes and fill the streets of the tiny town that served it. I enjoyed my visits with Claudia. She looked forward to them, and as the indulgent father who was spared the daily disciplining, I was eagerly expected, and my leaving would reduce her to tears. Helen was finding a bitter reality of academic life. Without a PhD there was no hope for tenure. Virtually no English departments offered PhDs for creative writing. She loathed the artifice of literary criticism which was the only road to her PhD. It meant she would be ousted after five or so years.

My habits at Queen's University created talk among the students and the faculty who considered me a strange American with bizarre habits. I used the hot plate in my office to prepare lunch and dinner when I didn't go out to eat. The odor of a frying pork chop would waft down the halls. I enjoyed my colleagues and was especially drawn to the Chair of the Department, Gleb Krotkov. He was an exuberant Russian, filled with good humor and a zest for life. He liked square dancing and arranged for his house to have a large living room floor that could take the pounding of leaping bodies. About twice a year we would enjoy his lavish parties. He liked to present both classic hors d'oeuvres and exotic ones. He brought Russian herring, stinky imported cheeses, rattlesnake meat, pickled beetles, and chocolate covered ants to tease us and dare us to sample the exotic. He was a White Russian, who had fought against the Bolsheviks and narrowly escaped as the Revolution swept through Russia. He was a plant physiologist and made

extensive use of radioactive isotopes to trace the metabolism of photosynthesis and other basic processes in plant cells.

We had picnics at the start of the year while the fall leaves were still glorious and, in the Spring, at the biological station, Lake Opinicon, about 75 miles north of Kingston in the wilderness. In the Fall we would have a festive gathering and a feast and, in the Spring, we would take buckets and fill them with wild blueberries and the faculty wives would bake pies, tarts, cupcakes, and puddings with these tart, delicious blueberries. The biology majors would join us, and it was a wonderful way for the faculty to get to know the students. On the bus, for the Fall trip, I saw a student from my course that I recognized as one of the stars of the class, and I sat next to him. John Southin was from Brockville, very Canadian, an enthusiast for the Queen, a scholar, and witty. I took an immediate liking to him and asked him if he'd like to work in my laboratory. Southin became my first student. He also became my eating buddy, and we would go to the restaurants in town and discuss our research and the gossip of the campus. He tried to teach me to ride a bicycle, but after I nearly tore his penis off as I wobbled and feared falling, he decided that wasn't a particularly rewarding activity.

The Canadian winter was bitter cold, and I made several trips to Chicago to visit Nedra. She had gotten a job at Turtox, a biological supply house that used to subsidize the marine biology station at Woods Hole in Massachusetts. She was making slides for classroom use and I enjoyed seeing how mammalian specimens were preserved and injected with latex to color their blood vessels. I worried about the callused cracked hands of the workers who injected the formaldehyde into the fetal pigs and other animals and thought to myself that these guys are in for lots of cancers when they get old. The rooms reeked of a formalin odor, much like the basement office where Joe Lucas spent his time when he wasn't in my laboratory.

Nedra also made train trips out to Kingston, and I would bundle her in my arms as she stepped off the train and we would enjoy going to dinner, seeing movies, and even having dinner with some of the students in their apartments. I would then get her back to the train and as the snow would

blow in our faces, we would be locked together enjoying each other's kisses as we would wait for the train. On a Christmas break trip to New York to see my parents, I stopped by Benny's office and asked him if he could recommend someone who could sell me a diamond engagement ring. He took me to a jeweler friend, and I bought a beautiful ring and took it back with me and when I got to Chicago, I slipped it on Nedra's finger to her great delight. We set a wedding date for the Easter break in the Spring.



Nedra and I were married in Rochester, Indiana, during the Easter break of 1959.

This was more complicated than it should have been. To get a marriage license I needed a blood test to show that I didn't have syphilis. The Fulton

County clerk said they would not accept a Canadian physician's report. It had to come from an American doctor. So I went down to Watertown, NY, the closest US city to Queen's University and got the blood test there. Even then the Indiana clerk was reluctant to accept it but finally agreed to its authenticity. I was put up in a local boarding house along with Nedra's uncle Bob and Nedra's father while Nedra, her mother, her sister, and her friends prepared the wedding gowns, the wedding dinner, and the other preparations for the wedding. Bob Huber, her minister from IU came down to officiate with the local minister of the corner church on Madison Street, less than 50 feet from where Nedra's grandparents and her parents lived.

My friends from IU, Steve Taub, Irv Tallan, and Gene Fox were my party. My parents did not come but sent a telegram wishing us well. The bridesmaids' gowns were in red and Nedra wore a traditional white bridal gown her mother had made for her. It was a typical Midwest wedding of that era with all the clothing handmade and the meal cooked by the guests and relatives of the bride's family. Nedra's father shook violently and was ashen white as he brought her down the aisle. We had written our own vows. It was a lovely service, and we went down to the Church basement where we had a feast. After the wedding, we got into our traveling clothes, boarded a bus, and headed for Chicago. By the time we got to Indianapolis, we figured this was too long of a drive and took the cab to the LaSalle Hotel and checked in for our wedding night.

We stopped off in Chicago, saw a musical, took in some fine restaurants and were back on the train to Kingston. We settled into the basement room that Nancy Clark had recommended, and I was back in classes, and we enjoyed eating out the rest of the semester. Nedra was pregnant in our first month of marriage, very likely getting pregnant on our wedding night. We spent most of the summer at Cold Spring Harbor where I did genetic research. We watched the horse shoe crabs coming to the harbor to spawn and ate in the dormitory cafeteria. It was a terrific way to spend our delayed honeymoon. I also got to meet dozens of visiting geneticists and to hear their seminars. Milislav Demerec headed the laboratories. He was a rival of Muller's in the 1920s and 1930s, coming in second in his quest for analyzing the structure and the nature of the gene. He finally met with

success when he switched to bacterial genetics in the late 1940s. He used Muller's radiation techniques to induce strains of penicillin mold that produced commercial quantities of that wonder drug. He worked out the fine structure, as he called it, of the gene in the bacterial chromosome. It was a triumphant piece of work and as Demerec succeeded with his microbial genetic programs, the fame of Cold Spring Harbor continued to expand and hundreds of visitors from around the world came to the laboratory to attend the special courses, symposia, and opportunities for research.

Our last year in Kingston was a hectic one. I was teaching Dean Earl's course now that he had retired as well as my two genetics courses. I had quite a few experiments going, with John Southin doing a major part of the analysis of the dumpy gene. I had attended the Genetics Society of America meetings in August and George Lefevre, the NSF genetic grants director cornered me. "Elof, if you want to continue your funding with the NSF, move back to the States. Congress doesn't want us to spend our money in other countries." I let it be known to my colleagues at the meetings that I would consider moving back. There were many reasons why Canada was a superb place for a scholar. The school year was short, with five months (May through September) off for research but pay was for the entire twelve months. The students were highly motivated and well selected through the filter of grade 13. My colleagues were friendly, and I was well liked as a teacher. Against this was our isolation from the United States and the modest research I could do without grant support on a larger scale. There was also the strange feeling of living back in time. Canada then was about ten or twenty years behind in its academic values. Biochemistry belonged to the medical school and not to Arts and Sciences and Krotkov was blocked in his attempt to hire a biochemist. I would read in the latest journals that the human chromosome number was 46 and not 48 but my students in their medical classes would be graded wrong if they gave that answer because their professors went by their training and out of date texts.

In January 1960, Nedra went into labor, and I drove her to the Kingston General Hospital and a day later Christina was born. Nedra was happy and her mother had come out to help us in the rented house where we had

moved. I picked up Nedra at the hospital and we drove in a snow storm and a car, blinded by the heavy downpour, ran a stop sign. I smashed into him broadside and his car spun to the opposite corner. No one was hurt but we were shaken up by the experience. It is a terrifying experience to put one's foot on a brake for a sudden stop, only to find the car sliding on ice and snow and heading directly into a car. Christina was oblivious of the crash and after the police left, we were able to drive home on our own power. It was a hard winter and I shoveled 130 inches from our corner lot. UCLA came through, and I accepted their offer. We would drive to California in July with stopovers along the way.



Nedra and I with baby Christina in Kingston, Ontario 1960.

CHAPTER 38

CALIFORNIA BECKONS



I turned down California three times before I finally chose to go there. I was still at IU when I received a letter from Ed Lewis asking me to apply for a Gosney Fellowship at Caltech. Lewis was the leading pioneer in gene structure, or pseudoallelism as it was called, and I greatly admired his papers and the work he did which was finally recognized by a 1996 Nobel Prize. At the time he was offering a theory more complex than a competitor in Great Britain who thought all genes were pseudoallelic and that the mapping was continuous within a gene. It turned out both were right and there were regions that differed along the length of such complex loci and that were crossing over within them. The crossovers established the location of the pieces of the genes. I would have loved to have worked in Lewis's laboratory and it would have led to a very different career, but I put Claudia's welfare ahead of my own preferences. If I went to California, I would be lucky to see Claudia once a year. I owed her a father's attention as

chopped up as that would be getting to Pennsylvania where Helen took her job.

Muller also received a letter from UCLA asking him to recommend a student. He told me that the department there was badly split, and it would not be wise to start a career at a school where I had to take sides and get involved in academic politics. I headed to Canada instead. In those days a post-doctoral fellowship was still a novelty, and the rank of Lecturer was still common. I became a Lecturer at Queen's University

UCLA did not take no for an answer and shortly after I got to Kingston, I got a letter from UCLA asking me to consider being a candidate for a position in their zoology department. I declined and said I owed it to Queen's University to spend at least a year or two because it would be dishonorable to depart after committing myself to a new job. I did not mention my personal reasons for declining moving west.

After marrying Nedra, we worked out a schedule for my visits to Claudia. I would take the bus to see her or drive and use the thanksgiving, intersession, and Easter breaks for those trips. We settled into Canadian life, and I had the satisfaction of teaching and writing my articles and starting on some modest research projects. Lefevre, of course, changed that. If the NSF would not support me, I would have difficulty running a larger laboratory. Canadian support was steady and free of overhead costs, but the amounts were low. Larger grants generally went to senior investigators with a long track record of successful projects. The US was following a very different policy. They were scared out of their wits that they had been overtaken by the USSR. Sputnik made them terrified that Soviet state for education to grind out top scientists was more than compensation for the damage of Lysenkoism. The US was in a whirlwind of federal programs to improve secondary education, pump money into PhD programs, and most of all, to support the sciences. Grants would be merit based and peer reviewed. The only catch was that chauvinism was in and the international nature of science was out. US money was for US scientists to be spent on US soil. I applied for the job at UCLA when the third attempt by UCLA came my way. This time I expressed my interest, and I was called out for an

interview in March. It was bitter cold when I left, and I wore my heavy overcoat and a knitted cap and had my gloves and scarf to bundle myself as I hurried out of my car and to the airport where I would begin my flight to California. I arrived in Los Angeles and it was about 90 degrees, dry as a bone, and the skies, when not eye-smarting from smog, were cloudless and blue. I took a limousine to Westwood Boulevard and needed to get a haircut before I presented myself. I walked into a barber shop, and everyone stared. I looked for a clothes tree to hang my coat but there was none. No one wore coats. I felt like an overdressed, huffing and puffing, Willy Loman selling his wares in Tel Aviv. Everyone was in shirt sleeves. I piled my stuff on the floor and got my haircut and information on where to go to the small hotel that was near Westwood.

This was not the hospitality that Canada offered, and I had misgivings. After checking in I called my host, Dick Siegel, and he came down to pick me up and begin the tour of the campus and a filling in on the job and what they were seeking. I knew of Siegel from IU. He had graduated from IU a few years earlier and was a student of Sonneborn's. I met the geneticists, and I was driven around the town. "Forget anything within a mile of here. There were already out of my price range when I came here. Only the older professors live there." He said I'd be lucky to have less than a half hour commute to campus by car. I asked about the heat wave in March. He told me they had two seasons, summer and spring. It rained in November or December, and it was dry the other ten months. The palm trees were sorry looking, yellowed and scrawny. But the campus was more attractive and there were nice gardens, and the architecture was varied, some having a Moorish motif and others the utilitarian brickwork of state supported schools.

I gave my seminar, and I was invited out to dinner and a friendly poker game with the geneticists. "We play every week, it's our way of unwinding and getting to share ideas". I told Siegel I wasn't much of a player. No problem. He'd teach me. By 11 PM I was cleaned out and had exactly five dollars left for my fare on the limousine to get back to the airport. I got back to Kingston and my car was encased with a shell of ice from an ice storm. It was about a half inch thick. It took about fifteen minutes to get the door

open hacking away with my keys to split the ice and force the key into the lock. It took another fifteen minutes to dig some peepholes in the windshield and to have my mirror side clear enough so I could see the traffic behind me. I was freezing again and cursing the lousy weather. California looked good.

I got the job, and it was sad saying goodbye to my colleagues and especially to Krotkov who was so supportive as Department Chair. In August of 1960 we packed up to leave. John Southin cast his lot with me and joined us in our car with its Sears clam-shaped carrier strapped on the roof of the car. We had a moving company move our books and goods, lab and home, to Los Angeles. We planned stops to see Claudia, Nedra's folks, Nedra's uncle in St. Louis, and then a long ride west catching US 66 to the Mojave Desert and finally to Los Angeles.

Neither Nedra nor John could drive. Christina was in Nedra's arms most of the way. It was crowded and we did not have air conditioning. I had bought a contraption that fills with water, fits on the side of the window on the passenger's side, and as the car gains speed, cooled air is blown in. This works for temperatures about 80 degrees Fahrenheit, and fails miserably at temperatures above 90 when the air blown in is just hot and moist.

In those days there were few divided highways. The great Interstate Highway system was either just under construction or still in the planning stages. This meant long stretches of following trailers and trucks that moved slowly with their heavy weights and when traffic was fairly heavy it would take a long time to pass. It took even longer for someone as conservative as me to leave enough time to make a safe pass. Thus I'd usually end up hung behind the exhaust of the truck while car after car passed me and the truck ahead of me.

Since I was not adept at highway driving, I had problems whenever a dust storm, rain, or the setting sun blinded me or confused me. I also had problems interpreting signs, especially in cities where the locals knew their ways and the strangers were utterly lost because the highway signs were frequently buried among a clutter of street and directional signs. John said

he thought we would all be killed before getting to California and he wondered why he listened to his warped sense of loyalty to me.

We finally reached Needles, California. It was the Eastern last outpost of humanity before we hit the Mojave desert. Signs ominously warned us to fill up and to have water in our car in case our car got stuck. We pulled into a shaded area of an all-purpose restaurant, filling station, and general store. The restrooms were sheds with a hole in the ground and the odor of decades old decomposed human wastes. I walked in and the proprietor told me

“You parked in the shade.”

“Yes, I did.”

“That will cost you extra.”

“What?”

“There isn’t much shade, so we charge for it. That will be 50 cents more on your lunch bill. If you don’t want to pay for the shade, there’s lots of space in the sunlight.”

I paid for the shade.

We began our trek through the Mojave Desert. It was blistering hot. Nedra rubbed Christina with ice cubes from her thermos jug. We drank a lot of water. I was terrified our car would stall as the heat kept edging the temperature upward in the radiator. About ten miles from Barstow the skies turned gray, and a tremendous thunderstorm flashed its lightning and I was very happy. We’d have a cool ride the rest of the way and we could rest up in Barstow and leave first thing after dinner for Los Angeles. Suddenly all the cars ahead of me were lined as far as I could see. It looked like a rush hour line of traffic coming into New York City. I got out of my car and tried to find out what happened. The road was washed away and several cars were swept away by flash floods. The highway department was using bulldozers to clear the shifted sands that were heaped on US 66. We were there about four hours before we got to Barstow and lucky enough to find a motel to stay the night.

We got to Los Angeles. Nedra looked at the desiccated, gray palm trees and cried. It was the most miserable sight she had seen. John checked into

his dormitory and Nedra and I stayed in a hotel until we located an apartment in West Los Angeles on a bus route to campus. That way when Nedra learned to drive and needed the car, I could use the bus. It was a small apartment but clean and we ordered our furniture and began to settle in. About our second week there my mother showed up. She had run out of the money that my father's mother had left. I couldn't afford to set my parents up in a separate household. I told them to move in with us. Nedra gulped.



Route 66 was pre-Interstate Highways and the roads for much of the trip were flat and monotonous.



My appearance about the time I left for UCLA in 1960.



Soon to join us were my mother (shown playing the violin at our apartment at 1515 Granville Avenue in West Los Angeles, California) and my father, an arthritic cripple, also in our apartment.

CHAPTER 39

FINDING AN IDENTITY



Figure 39-1

Portrait of Elof Carlson by his grandson, Maxwell Carlson 2013.

We assemble ourselves from those we encounter much more than we are the social products of our genes. Geneticists recognize that both a genotype and an appropriate environment are needed for almost all our behaviors. Very little of that behavior comes from our genes alone. All we must do is read history and we will be convinced of that fact. Four centuries ago, the overwhelming bulk of humanity was illiterate, the mean life expectancy was about 35, substantial numbers of people were held in slavery, and our prospects for a career were limited.

At age 29 I had shifted to a new status as an assistant professor at UCLA. I had published several articles on gene structure in refereed

journals and felt good about my prospects for academic life. I was remarried over a year to Nedra and we had added Christina to our family. I knew this marriage would last and considered myself fortunate to have met Nedra a year after my first wife, Helen, told me to leave. I saw myself as a product of my parents, acquiring my father's passion to learn and my mother's ability to achieve her goals with minimal resources. I learned from my blind high school teacher, Morris Cohen, what it is like to assimilate the liberal arts and see the world in broad philosophic terms. I learned from my English teacher at NYU, Charles Davis, the pleasures of writing. I thrilled to the history of science through my history teacher at NYU, Wallace K. Ferguson, who introduced me to the Renaissance and its secular view of life and the birth of modern science. I learned from observing many of my professors that effective teaching involved a combination of storytelling, clarity of thinking, integration of knowledge, and enthusiasm in presentation. From Hermann Muller I learned to be a scientist. From Nedra I learned how to appreciate life and seek the good in others. Even my bad examples were helpful in knowing what does not work. A failed marriage makes one more introspective. A psychotic parent (my mother) makes one more self-reliant. A parent lacking ambition (my father) made me more ambitious. A brother born with a limited life expectancy made me more appreciative of the gift of a healthy life. The shaping of my life was almost accelerated after I had graduated from high school. The models, good and bad, were now in the dozens if not hundreds as my universe enlarged with new knowledge and new responsibilities. So, it was goodbye to my awkwardness. I joined the motivated world of adults, especially those eager to test their talents in a new generation.

We only know a portion of what shapes us. Unlike most of my classmates growing up during the Depression in working class neighborhoods or slums, I had the good fortune to do well in school. That was my ticket to emancipation into professional life. Was it innate? Did I have some lucky roll of my parents' genes that clustered in my zygote and produced a child with a passion to learn? Or was it more likely that I found joy in new knowledge and was encouraged by my father's decision that culture is more important than the belongings identifying middle class

aspirations? For him the *Encyclopedia Britannica* was a better investment than living room furniture. For my mother, playing the violin was more important than sweeping the floor. Seeing her children draw and paint was more important than clean walls in the living room.

At the same time, we drag our past with us. It took years of embarrassments and fumbling efforts to conquer my awkwardness and merge into middle class behavior and status. We are also constructed in our loyalties. I saw myself as a liberal, like my father, and not as a communist, like my half-brother Ben. I saw myself as an atheist, like my father and brother Ben, but not like my theist brother Roland who harbored some yearning for the Bible classes he enjoyed listening to on the radio. Was it his short life expectancy that turned him to religion? Was it my love for evolution that turned me to atheism? How could I be both an atheist and a Unitarian as I entered my adult life in my 30s? The supernatural still is bizarre to my world view as a scientist. If something is knowable there must be evidence for it. Basing faith on what is unprovable or unique to the individual does not give it universal claims. Whose faith could I accept in good conscience as a scientist?

My science was also shaped by Muller. I adopted his policy of not placing my name on the work done by my students. I saw the gene as the central concept of the life sciences. I minimized the role of plasma genes in the functioning of the cytoplasm. I rejected Lamarckian interpretations of the inheritance of acquired characteristics. I rejected theoretical approaches that did not lend themselves to experimentation.

My writing was influenced by Pepys (I kept a diary), by Montaigne (I loved writing essays), and by uncluttered declarative sentences exemplified by novelists like Henry Greene and Hermann Hesse, by science writers like Julian Huxley and J. B. S Haldane, and by popularizers of science like George Gamow.

The puzzle in filleting people's psyches into components with identifiable influences is that each person is also unique. We are not simply amalgams. There is originality and, in many people, that uniqueness is what appeals to us. But trying to find the source of that originality, genetic or

environmental, is elusive. I think I have identified the major influences on my youthful years. I am not sure I will achieve that with these later years.

CHAPTER 40

UCLA



Figure 40-1

The UCLA campus has many older buildings with Romanesque architecture. Eucalyptus and Jacaranda trees are common on campus.

What struck me about UCLA was the weather. There was no winter and no fall. It was always warm or nice. There were very few clouds. The major concern then was how much smog there would be. There were no emission standards for cars. The smog would burn the eyes and sear the lungs on its

worst days. The mountains disappeared as did the more distant city sky line. Smog was not wet; it was dry and gray. It killed the trees and left the mountain sides stripped of their pines.

It didn't hit me at once that this would be a problem, but each year took its toll. There were no seasons. It was one long summer. Nothing punctuated time. Students are always the same age on campus, most of them 18 to 22 years old. The older ones graduate and a new wave of immature bodies, peach fuzzed faces, and happy innocence comes to campus. We don't see ourselves unless we are vain and gaze in mirrors. For me a mirror was just an instrument in which I shaved and in that hour of the morning, I wasn't looking; I was shaving. It hit me after about five years that one could let one's life slide away in the illusion of it being one long year. Seasons may make me swear at lousy weather, but they punctuated my life and reminded me of how relentlessly short each year was.

I did not hit it off with Dick Siegel. He was one of Sonneborn's students and he was there first, so he liked things his way. I felt uneasy when he cleaned me out in poker that first time we met. I didn't play poker again. That made me an outsider and not a regular guy. I don't like regular guy stuff. Macho is not me. We had adjoining laboratories and offices so we couldn't avoid each other. I tried compromising. Part of the difficulty was the split department that Muller had warned me to steer clear of. Siegel belonged to the anti-Jahn faction. The Ted Jahn faction was the old guard that was challenged by the Ted Bullock forces. Siegel supported the Bullock faction, a wise choice, because Bullock was right and his switch to the new in biology led to some outstanding research and it gained him election to the National Academy of Sciences a year or two after I arrived. He then left for more favorable climate to head up a program at La Jolla. The department was still split. Graduate students were told to keep their distance from each other. At departmental meetings voting was usually along a fault line.

I couldn't care less which faction was which. These were all my colleagues, and I didn't want to take sides. I encouraged my students to talk to anyone. I worked out my teaching schedule. As a new member of the

Zoology Department, I would be protected and my first year consisted of a graduate course in physiological genetics and a seminar. The graduate courses were open to qualified seniors.

I got my laboratory set up in a new wing to the biology building. I had Billie Hawkins as my food preparator and John Southin as my first graduate student. John chose the nicest room with a window view for himself. He brought in a rocking chair and portraits of his two favorite people, the Queen and Marshall Tito. John liked to rock to and fro as much as my brother Roland rocked side by side. John made tea the Canadian way – in a porcelain pot with the pot heated by scalding water and then when emptied of the water, the tea leaves could be put in and followed with more scalding water. He even used a tea cozy. The tea was generously dosed with cream, and it was like nectar for the gods.

At home we had my parents. My father was stuck in bed because of his frozen joints. We arranged for a physical therapist to come and begin exercising him. My mother was progressively crazier with each month she lived with us. Her good moods became infrequent. She would escape the demons pursuing her by going out and that was always nice for us and for her. But when she was indoors it was difficult to deal with her. She was convinced her food was poisoned. She thought Christina's baby sitter (a former roommate of Nedra's from IU) was a Nazi dressed in a wig. She thought she was being x-rayed through the ceiling.

When she had her good moments, she painted, or she played her violin. She loved having her grandchild Christina dance with her. "Dancy, dance" she would say and swirl Christina around. My mother liked to wear gypsy clothes, very bright and solid colored in reds, greens, yellows. I wondered what triggered the bad moods and what triggered the good ones. Why was it not possible to flick a brain on or off like a lamp? She would be abusive and let out torrents of foul-mouthed curses. She would accuse Nedra of poisoning her and refused to drink anything that wasn't bottled that she could open herself. Nedra said I should do something, and we feared she would starve herself. I could no longer live with denial, I had to act.



Figure 40-2

1530 Granville Avenue was our first apartment in Los Angeles. We lived on the second floor toward the rear. The building was torn down a few years after we moved to Sunnyside Avenue in Mar Vista. Watercolor by my brother Roland about 1962.



Figure 40-3

My father converses with his granddaughter Christina. My mother paints in our Granville Avenue apartment.

I went to the social services office in West Los Angeles and made an appointment. I described the situation. I was told that they will investigate. "In California we believe it's a child's responsibility to care for an aged or sick parent. If your mother needs psychiatric help, she will be interviewed by a psychiatrist we appoint. Can you bring your mother in for an appointment?" I told the clerk that paranoia does not work that way. My mother would absolutely refuse to come. Her fear was being committed to

an asylum again. Why would she come? The clerk called me back a few days later and gave me the time when a physician would come. I told my mother that evening that a physician would come by because I was concerned about her health. She didn't go out anymore and since she wasn't eating, I was afraid she'd starve herself to death. He came. He asked her some questions. She volunteered everything. There were gangs of Jews after her. They wanted to send her back to the insane asylum. She was being x-rayed. There were spies in the closet. My father wept as my mother gave her replies. As I walked outside with the physician he said, "You should have both your parents committed." I was dumbfounded. "There's nothing wrong with my father." "If he's lived with a person like that all his life there is very definitely something wrong with him." I refused to let him order a commitment for my father. He arranged a commitment for my mother.

I couldn't tell my father the date the ambulance would arrive. It would be too difficult for him to bear that knowledge. He was loyal to his wife through agonizing sorrow and torment. When the ambulance came my mother was upset but too weak to physically protest. After the ambulance left, I told my father what I had done. He cried again but he accepted the reality of the situation.

I had to testify in court that my mother was insane. The hearing was held in the asylum. I described her behavior over the years and her medical history. My mother smiled at me when I told her how sorry I was that I had to tell the judge what I knew. "I know you are being forced to do this. Don't worry darling." She believed her enemies had threatened me. My mother was sent to Gardena in a psychiatric nursing home. I was billed one third of my salary (at that time I was earning \$5,800 a year as an assistant professor). This left us with very little to live on. I convinced my father to swallow his pride and accept his Social Security money. That paid for our food. Roland also sent a modest contribution although his salary as an elevator operator was not much above minimum wage.



Figure 40-4

My mother was taken to the Clear View Sanitarium in Gardena, California. Its specialty was geriatric mental patients. The medication slowed my mother's physical and mental activities.

I visited my mother every week and brought her fruits which she loved. She quickly became depleted of the vitality of people who live as free citizens. She became washed out, her hair undone, sitting in a night gown all day long and heavily doped up with drugs to slow her mind to a crawl. She was told that in three months she would be able to visit our family on a day pass. We got that far and her first meeting with my father was a tearful reunion for both. Soon after her return to the asylum she went into advanced stages of heart failure. I got a call while at work that she had taken a turn for the worse and I drove to Gardena. She was comatose and made soft groans when I tried to speak to her. Her legs were icy. The next morning, she was dead. My father lived another year before he too passed away from heart disease. With my mother dying at 68 and my father dying at 61, I roughly calculated I had about 30 years to live. I wanted to make the most of it.

After my parents died our family kept increasing. Erica arrived, then John. We needed more room than the tiny apartment on Granville Avenue. By this time, we were active in the Unitarian Fellowship and one of our friends there arranged for us to buy a small house from them on Sunnyside Avenue in Mar Vista, a region halfway between Santa Monica and the LA International Airport. It was near a huge field owned by the Hughes Corporation. The back yard had a peach tree and an apricot tree. It was gorgeous. Later we added on a large library and an additional children's room. Our neighbors were friendly, mostly Mexican and Japanese and some blue-collar whites. Almost all the houses had young children. It was a wonderful time for raising a family.



Figure 40-5

Our first purchased home was at 4221 Sunnyside Avenue in Mar Vista, California, (near the Hughes Aircraft facility, before it was turned into a realty development). Our daughter Christina is standing by the sidewalk.

I began acquiring a reputation as a teacher and soon began teaching the undergraduate genetics course. I also participated in teaching the genetics

section of the biology majors' course. I added five more graduate students. I was receiving generous grants from the National Science Foundation and my work was getting well known among my colleagues in genetics. I was invited to give seminars at other campuses. I was invited to the genetics meetings at Lake Arrowhead, up about 12,000 feet where there were actual snow squalls and cars had to use chains on their tires. I was quickly promoted to Associate Professor with tenure two years ahead of schedule. In the summers and intersession, I flew to State College to visit Claudia. When they moved to Baton Rouge where Helen taught at Louisiana State University, I flew down there. When Claudia turned five, I flew down to pick her up and spend the summer with us.

The world changed in the early 1960s. My first hint of this was when I became the premedical advisor. I interviewed a student who was a returning Peace Corps volunteer. He had been among the first to go on this venture to help others. He had been a theater art major and went to the Philippines to teach English. He was assigned a rural village. The houses were on slatted floors held aloft by stilts and poles. One week he noted that two of his students were absent. He asked his supervisor where they were. "They died." This shocked him. He learned that they had infections and went into comas and died. It seemed outrageous that this should happen here. Why couldn't they have prevented it? He was removed by his supervisor as having the wrong attitude. He was reassigned to a rural hospital that served 350,000 people. He was given a parasitology book to read. He learned that the family defecated through the slats. The pigs ate the human wastes, and others ate the pigs. The germs circulated freely. He had come back to become a physician and he was willing to take all of the science courses – chemistry, organic chemistry, biology, and physics in a summer and an academic year so he could get back and do something where his "knowledge of medicine would count." I loved the idealism of the Peace Corps.

There were signs in the Student Union in 1964. "Why study history this summer? Be history. Join the voter registration drive in Mississippi."



Figure 40-6

Peace Corps photo of Philippine Village. I was much impressed by the dedication of the volunteers returning from their service in the early 1960s.

There was the assassination of President Kennedy. I was about to leave for Riverside where I was scheduled to give a talk. I had prepared my slides and I was working on my notes when Billie came in and asked if I had radio. She had heard that Kennedy was shot. I went out to the parking lot and listened to the car radio. Two students walked by and stopped. "He's been taken to Parkland Hospital, and he's being given blood." They burst into tears. I went back to my office and called the University at Riverside. As I was waiting to be connected, I heard one operator say to another "He's dead."

Kennedy was shot on a Wednesday. I met my class on Thursday. How do you talk about non-disjunction when the President of your country has been killed? I told them that we know very little about psychosis and why

people kill. It is our job as scientists to know but we don't know about a lot of things. They are too complex for us to analyze now. I told them we have to make do with what we know and push our knowledge a bit each time we study nature. One way to do this is to learn. It was my job to teach them and theirs as students to learn. No matter how overwhelmed with grief we felt now, I told them, we have to go on living.

Nothing in my life was as powerful and uprooting as the 60s. It altered students' lives; it let flow a surge of emotions, of violent demonstrations, of hatred by the old for the new, of fear that somehow making society more democratic was undemocratic; that bringing blacks into America as full citizens would destroy America; that allowing women to go to medical school and other professions would destroy these institutions.

The country was changing. California was changing and moving to the right. The university was changing. I was beginning to see myself in the mirror. I was changing.



Figure 40-7

Nedra took this picture of me in our Sunnyside Avenue bathroom. For about two years at UCLA I wore a clip on bowtie.

CHAPTER 41

BILLIE

I first met Billie at Cold Spring Harbor in the summer of 1959. Billie was Evelyn Hawkins. Evelyn was her middle name. She had a mixed ancestry of Black, White, and Indian ancestors. Her grandfather was a slave. She grew up in Washington, D.C. Her brothers were in the catering or horse racing industry. One was a trainer for Kentucky Derby contenders. It gave Billie a lifelong love of horses and horse racing. She always placed a small bet with a bookie. Her father named her after a mistress and when Billie learned this horrible secret, she never used her first name again. I won't either. We owe some respect for those we loved. At the time Nedra and I came to Cold Spring Harbor, we knew her as a bottle washer and media preparatory for the Director of the laboratories, Milislav Demerec. She also prepared tissue culture flasks for one of the investigators and various bacterial and fruit fly food preparation. She was best known for her cooking for people. Billie was a magician as a chef. She made incredible beef and kidney pies that those from Britain said were on a par or superior to what they got back home. She made her chicken cutlets and steaks and pork chops so tender that they would fall into segments at the touch of a fork. Her sauces were exquisite. On holidays she would bake monkey bread, a yeast raised bread that was cooked in round pans and that one tore off in chunks. I, among many, would gladly sacrifice a dessert for Billie's monkey bread. She got the recipe from a cook for Zazu Pitts, and Billie guarded that recipe and only gave it to our children, decades later, on the promise that they would keep the secret until they were as old as she was.



Figure 41-1

Billie's monkey bread was baked in round pans and was yeast raised. This batch was baked by Nedra for Thanksgiving dinner November 28, 2013. Nedra said that the recipe Billie gave her, and two given to our children, all differ!.

Billie loved to tell stories. She had been a practical nurse at Walter Reed Hospital and used to smuggle alcohol in a hot water bottle to a first lady who periodically needed drying out. She was taking care of a four-star general who spat in her face when she ordered him to take his medicine. She promptly went to the sink, filled her mouth with water, returned to his bed and drenched him with an ejected water spout that sent him into gales of laughter. They enjoyed each other's company after that. She worked for Vannevar Bush as a domestic and got to know the tragedies and domestic pain of that household. It was Bush, who went on to head the Carnegie Institution of Washington, that got her a job at Cold Spring Harbor. Part of the laboratories are funded by Carnegie money.

At Cold Spring Harbor, Billie served as a lookout for the investigators doing research. If one of them was having an affair with someone upstairs and she saw his wife coming, she would shout up the stairs to "finish up

that one” and come down before his wife got there. She told people off. She wasn’t intimidated by Nobel prizes or titles.



Figure 41-2

Evelyn [Billie] Hawkins at UCLA. She wore a white lab coat when making food media for fruit flies.

When I was about to leave for UCLA, I got a call from Demerec. He said he was going to retire as Director of the laboratories, and would I be willing to hire Billie as a food preparator when I set up my lab. She would drive out on her own. I thought that was splendid and gave him the dates when I would be arriving and beginning my laboratory work. Billie arrived and quickly organized the kitchen. She had trays of fruit fly food coming out and I was very happy with her efficiency. She began cooking lunches. Soon the aroma of baked cheese cake, roast turkey, gravy smothered beef cutlets (she called them chicken steaks), and other delights permeated the halls, and we had an eating club. My graduate students loved it. One of my colleagues a floor above did not. She said she was an endocrinologist and that the odors of all that cooking meant that estrogen aerosols were being

carried from the baking carcasses of our chickens and messing up her experiments. Billie kept on cooking. The department chair thought the scenario of diluted estrogens a bit farfetched.

I learned that Billie was illiterate. She could write her name, but she could not read or write. She had to take a California driver's test and that meant passing the written exam. Billie took the first test, which is a multiple-choice format with fifteen questions. She failed. She asked for the answers so she could study better. She then memorized the sequence of letters for the answer key and kept taking the written test until her original test came up by chance and scored a perfect 100. She then signed up for an evening class and began to learn how to read. By the time we left, she had a good fourth grade level of reading.

Billie would punish a student who angered her by not speaking to him. This was a worse punishment than scolding and after a week or two the student would be begging for forgiveness. She was a wonderful counselor for students who were jilted and who sank into self-doubts. Billie got them back on track. She had a lot of sorrow in her life so she could relate to a person's misery. Her first husband was white. He was a jockey, and he was killed in an accident while racing. She married a black man years later and divorced him as soon as she discovered he was unfaithful. She converted to Catholicism and regularly paid her respects to the priests but couldn't care less about Vatican teachings about reproduction. Billie believed in using one's conscience and if that led a student to abortion, so be it.

Billie became our children's fifth grandparent. She was at all our Thanksgiving and Christmas celebrations, and she went with us when we traveled to Indiana to visit for a few weeks each summer. Her favorite drink was a hooker's special – Scotch and milk. She had a pithy comment about every situation. If someone was too fat and couldn't succeed in dieting, she'd say "Sew up her mouth." If someone spoke too fast, she'd call him "motor mouth." If a student wore braces, he became "metal mouth." When I moved to Stony Brook, she chose to come with us, and I kept her going until my grant ran out and then I arranged for her to work in the Microbiology Department as a medium preparator. She continued that work

until she was retired. The Department then built her a place to cook and used the spot for bringing guests and for graduates and faculty to chat. They called it Billie's Kitchen. Billie received Christmas cards from around the world. Those who knew her at Cold Spring Harbor let her know they remembered the wonderful good humor, rich lodes of gossip about geneticists, and fabulous meals they enjoyed. Many of them had their marriages saved, their lives put back on track, and their tears dried by Billie. If a guy was a skunk, she told his wife or girlfriend to dump him and not be suckered into believing he would change. She treated whites, Asians, and blacks alike. She hated pomposity and those who tossed their authority at her. She had rules for Billie's kitchen. If the person did not sign up by 11:30 AM, they would get no food and that included the president of the university.

Billie thought she was born in 1905. When she applied for her Social Security, she discovered she was born in 1910. What a gift. She chuckled over the extra five years of work that gave her. Billie's health began to fade in the late 1970s. Eventually she was forced out of her kitchen by the food service on campus. They were jealous of their monopoly over feeding the campus and even a dozen people a day was too many. They got the department of health to inspect the kitchen and it did not meet state requirements even though it was a club with a single item each day that she cooked with an "eat it or beat it" philosophy. She had two hip replacements and we kept her in our house as she recovered. Nedra bathed her and gave her encouragement when she was frightened and ill. She adored Nedra. Billie developed liver and kidney failure when she turned 82. There was a stream of visitors to hold her hand and see her through her dying moments, much to the amazement of other patients who could not believe how many people cared about her. We held a service for her at the Unitarian Fellowship and everyone cooked up a feast to celebrate Billie.



Figure 41-3

Billie's birthday party took place when she was 75 years old in 1985. Billie is front and center. The party was hosted by the Microbiology Department at Stony Brook University.

CHAPTER 42

FATHERING

I have become a father six times. Claudia was born in Bloomington, Indiana when I was married to Helen. The other five children were with Nedra. Of these five, Amanda lived only four days. Christina was born in Kingston, Ontario. Erica was born in Beverly Hills; John and Anders were born in Hollywood. It is not unusual for academics to have children born in different cities. They are students in one school, untenured in a beginning job and through talent or luck they move on. If they lack the talent or luck, they may be frozen in one job until they retire.

I would not have expected to have a large family when I was young. In fact, I considered it wrong. I was convinced that the world was overpopulated and all of humanity had to limit their output to two children which is roughly replacement levels to keep the world population constant. I had no reason to doubt Malthus's rigorous logic. I also felt it was irresponsible on religious grounds to avoid using contraceptives. Muller changed my mind. He was certainly sympathetic to Malthusian logic and he and his wife were active in Planned Parenthood. Muller told me that talented people should have more children than the average because he believed such talents had a strong genetic basis. This was no guarantee that a gifted individual would have gifted children, it just meant that they had a higher probability than the average person of having gifted children. Muller considered me to be among the gifted.

That made me reflective. I liked children and so did Nedra. Nedra was also a very gifted person as both an artist and a student. I reasoned that having a larger family would be consistent with what I taught about evolution. If human talents are adaptive and foster human survival, then

why not have more children? If by example other gifted individuals followed that advice they would have, on the average, many more talented children to contribute to culture and human benefit. This is not a faultless logic, and I was well aware that bright people can have corrupt values and do a lot of damage to humanity. While a Napoleon, a Hitler, or a Stalin can do a lot of damage by misusing their gifts of leadership, oratory, or management skills, a Pasteur, a Lister, or a Virchow can save far more lives through the germ theory and public health than all the harm done by dictators of the past two centuries. I convinced myself that there would be more benefit to humanity if there were more talented individuals than if there were fewer in future generations.

This was not a one-night revelation. It was a gradual coming to grips with the significance of fatherhood. I realized, as did Nedra, that a larger family meant more work and less time for our own two lives in our non-parenting interests. That is a major reason that Galton and other eugenicists failed in their efforts to persuade their aristocratic peers to have more children. Muller tried to solve this conflict by advocating sperm banks. His idea never caught on although there are one or two sperm bank that maintain semen of high achieving young men. It was not sexism that made Muller advocate such sperm banks. Men produce immense amounts of sperm. Women produce only one egg every 28 days. It is enormously difficult to obtain eggs and freeze them compared to obtaining sperm and freezing them.

This was not an easy decision to make. Having more than two children is often looked upon by one's peers as uninhibited lust, carelessness, stupidity, irresponsibility, or victimization by religious monomania. There is also the uncomfortable feeling of projecting into the thoughts of those frowning at a large family in tow and reading, "Who the hell does this over-sexed egotist think he is?" I am sure there are many in Planned Parenthood who would feel planning for a large family, as Nedra and I did, was not what they had in mind.

After we had our family, I became less convinced about the heritability of talents, gifts, and intelligence than I was some forty years ago. I believe

about 95 percent of children born have the potential to go to college and to be middle class or professional in their occupations. I am not convinced, however, that all children born, with rare exception, can be pushed by motivated parents and some sort of utopian society into writing poems like Yeats, composing music like Stravinsky, painting with the skill of a Picasso, or doing science like Crick. I still believe there are genetic differences for these exceptional human abilities and personalities.

Each birth was a unique experience. I associate in my mind Claudia's birth with my ecstasy of running to the hospital and feeling the moment of becoming a father for the first time. Christina's birth in mid-January during heavy snow remains vividly as a joyful moment in the bitter cold and swirling clouds of flakes that engulfed me taking Nedra to the hospital and bringing her and Christina back in a storm so thick that I didn't see the car in front of me until a brief instant before I hit it. Our California children were all born in glorious summer weather whatever month it happened to be. Erica was Nedra's easiest delivery and there wasn't much of a wait in the hospital waiting room. In those days only the mother and her medical attendants were allowed to be present when the baby came. I remember each time, kissing Nedra and wishing her luck and then waiting in a room with anxious men. I usually had a stack of books to read in my briefcase. Others would leaf through magazines, smoke cigarettes, and pace.

After three daughters in a row I began to think I'd be like Eddie Cantor with five daughters. I reminded myself that it was always a fifty percent chance but psychologically I hoped to have at least one boy to carry the Carlson name and to share some of the male values that culture in those days reserved for men. When John arrived, I was very excited and returned to my laboratory in the early morning when the building was empty and attached dozens of 3 x 5 cards to strings and hung them from the pipes in the laboratory with John's arrival announced. Anders birth was the most difficult for me to wait out because we had lost Amanda two years earlier. I knew the chances were remote that another chromosome abnormality would recur, but I also knew we were in a higher risk group. There was no prenatal diagnosis then and thus no way to tell in advance. My feeling with Anders was one of great relief that he was normal. Until Amanda's birth, I did not

think much about what can go wrong in conceiving a child. I often think how hard it must be for those whose first child has a major birth defect.

Our careers are often shifted by circumstances that are not predictable. Amanda's condition made me shift to human genetics. Her birth made Nedra eventually explore the fields of cytogenetics and in vitro fertilization. It is possible we would have drifted in those directions without the personal tragedy of a child with profound birth defects. The wonderful thing is that no one knows. Life offers us many motivations and many opportunities, and we are only one, or a few, of the many people we could have been.



Figure 42-1

My five children in 1972, at our home in Setauket, New York, from left to right: Anders, Christina, Erica, Claudia, and John.



Figure 42-2

Our split-level home in Setauket, New York at 19 Mud Road. It was a wonderful location to raise our children. When we first moved there in 1968, we would see pheasants, foxes, and rabbits in our back yard.

CHAPTER 43

FOUR DAYS IN OCTOBER

I was relaxed waiting for Nedra's fourth pregnancy. The trip to Cedars of Lebanon was a bit faster than usually because the contractions were getting faster and I didn't want to have a roadside delivery. Nedra went in immediately and I took my briefcase of books and planned to relax for several hours. As an old pro at fatherhood, I had no need to pace in the waiting room. I chatted with the other men, told them not to worry, and settled into a chair to read. Later that evening Dr. Nessim came in. He was in his green scrubs, his hat on and the white mask dangling by a string. His face was drawn and as soon as I saw him, I froze. Where was the pink or blue pin to attach to my shirt? Why wasn't he smiling? Why wasn't his hand extended for a congratulatory shake? "Nedra's fine, but the baby has problems."



Figure 43-1

Cedars of Lebanon Hospital in Los Angeles (Hollywood) where John, Amanda, and Anders were born. Erica was born in Beverly Hills Doctors Hospital and Claudia was born in Bloomington General Hospital. Christina was born in Kingston General Hospital in Ontario, Canada.

As the blood drained from my cheeks, I heard words tumble out. “Rudimentary jaw ... high arched palate ... cyanotic ... put her on her stomach and tied her tongue down ... can’t tell what’s wrong .. called your pediatrician to look at her.” He took me to see Nedra. She had been moved from maternity to general surgery, a quieter and less happy ward. We cried in each other’s arms. It would be hard breaking the news to Nedra’s mother and to our children. We had hope. We named her Amanda Marie. I returned when our pediatrician, Dr. Schuback, came. He didn’t know what she had. He thought her cyanosis was a cardiac problem and he didn’t like her vital signs. We went to the hospital library but nothing there helped under Pierre Robin anomaly, her lower jaw malformation. He told me he’d check her again in the morning when he could run some more tests on her.

Nedra and I planned for a homely child, at best an Eleanor Roosevelt. If Amanda needed surgery to extend her lower jaw she’d get it when she was old enough for it to be effective. We thought ahead to her special needs. Would she be able to eat and chew or would she require special nursing care? I thought about it driving home. The more it rattled about in my head the more improbable it seemed. Too many defects. Maybe it’s chromosomal? I talked to Dr. Schuback early that morning and expressed my doubts to him. “Would it be all right to transfer her to UCLA? My

colleague, Stan Wright, is in human genetics. I'd like him to look at her." He agreed and ordered the ambulance after I called Dr. Wright and told him my problem and had him speak to our pediatrician.

I was in my office when Dr. Wright called. "We'll get the chromosome results in about three weeks, but I can tell you now that I'm about 100% certain she has a trisomy E, either 17 or 18, probably 18". He told me to come to his office. He said that she would not live more than a few days. The condition was incompatible with life. He asked me if I would like to see her. I did. We went to the intensive care unit where premature babies were kept. She was in an isolette. I watched her heaving chest and her oscilloscope as her heart beats faltered, rose, fell, irregularly fluttered, and shallowed into a flat line and then started to move again.

I went home and told Nedra about the baby's condition. It was hard for both of us to take this bad news and we did what parents do. We cried a lot in the privacy of our grief, snapping out of it when our children needed our attention. I had left word at my laboratory that I wouldn't be in and that the baby had problems. I had begun writing about our baby and resumed my moribund diary. I described what she looked like and each day I put down three or four pages of the swirl of emotional and factual events that deluged us. I went to the medical bookstore to see what I could find on chromosome abnormalities. This was 1964. Not much had been published in book form. The human chromosomes were first implicated in birth defects in 1959 when French investigators identified Down syndrome as having an extra of what is now called chromosome 21. Our baby's condition was not described until 1961. In those days chromosomes were difficult to tell apart. 16, 17, and 18 were similar in size and shape. It was not until 1968 that other scientists learned to stain chromosomes so they appeared banded and each of the chromosomes could be uniquely identified. Our baby had trisomy 18.

Her third day was even more difficult. She went into cardiac arrest several times and each time she revived. She fought but I knew that with thousands of genes in excess her organs would not work right, and they would fail. After several hours the resident on duty said he couldn't predict

how long she'd last but I should go home, and they'd call if she took a turn for the worse.

The call came early in the morning. She was dead. It was an anticlimax. I felt no different on hearing the news. We had cried ourselves out for three days. "What do you want us to do with her body?" I hadn't thought of that. "Cremate it," I replied. We then arranged for our minister to visit us, and we held a private ceremony in our home just for my mother in law, our children, and us. It was hard telling our children that their baby sister would not come home. Neither Nedra nor I believed in an afterlife and we did not give our children a story of Amanda living in Heaven with angels. We told them she was a very sick baby and that the doctors tried hard but sometimes sick babies don't get well.

I learned a lot about what caused Amanda's condition. The failure of chromosomes to be distributed properly is called non-disjunction. It can happen to any chromosome and when it does it usually leads to spontaneous abortion. About 50 to 60% of miscarriages, when examined by pathologists, show an abnormal chromosome number. Only three make it and live among those 22 chromosomes that males and females alike receive from both their parents. Of these only one has a chance of surviving more than a year, and that is Down syndrome or trisomy 21. No one knows why the chromosomes fail to separate normally. It is age related, especially for the ovary. Nedra was 28 when Amanda was born. She wasn't in a high risk group. For all I know I could have had such an event in my own testes. Some of my former graduate students in Muller's laboratory thought so. I had treated a lot of flies with x-rays for my dissertation and the protections afforded today were not available then.

Some twenty years later a child was born in Port Jefferson, a few miles from our campus at Stony Brook. She had a plum-like sack on her spine, polyp like protuberances called ear tags, microcephaly, and hydrocephalus. She was more than her hospital could handle and she was transferred to Stony Brook. The neurologists examined her, sent for an expert in New York City, who drove at 3 AM some 50 miles to examine her, and tried to assess her condition. Her chromosomes were sent for analysis. At that time

the Reagan Administration was on the warpath over birth defects. A child had died in Bloomington, Indiana with Down syndrome, because the parents refused surgery for a defective esophagus and a stomach hooked to the baby's lungs. Stony Brook's Baby Doe was soon reported on a hot line to Washington. A sick baby wasn't being given surgery. A national news event erupted over a sudden removal of the parents (without their notice) as custodians of their own child and a court-appointed guardian was given the authority to make the decision for surgery which the parents had not chosen among the medical options provided. The surgery would in no way change the paralysis for the child. It would be a more acceptable way to handle the possibility of infection. The parents had chosen antibiotics and dressings that would allow the sac to recede and become covered over with skin.

The White House had made several false assumptions. If it's New York it's liberal. If it's liberal, it means the parents don't want to deal with sick kids. If it's New York, it means the physicians are spineless and cave in to misguided parents and their desires for a perfect child. The truth was different. The child was born in St. Charles Hospital. The parents were observant Catholics. They sought advice from their parish priest, the University Hospital's priest, and they got answers to every question they put to the specialists who told them what medicine could do at that time. They had voted for Reagan "to get the government off the back of the people." It was a first-class fiasco for the Reagan administration and the Supreme Court backed the parents 9-0.

While the national debate was going on, I listened to the arguments. Some argued that parents were not the best to make medical judgments about their sick children. They claimed they were too confused and wouldn't think straight. The right to Life movement had also entered the fray on the side of all the Baby Doe cases and argued that surgery was the answer to all their life-threatening conditions. To do less was a revival of eugenics or some form of euthanasia.

Out of curiosity, to see how Nedra and I reacted, I read my 1964 diary entry for the first time since those four days in October. I made several discoveries. I saw that our hopes rose and fell with the knowledge we

gained. What we were prepared to do for a homely child was very different than what we would do for a trisomy-18 child whose life expectancy is usually less than a week (95% die within the first year of life, all but a few in the first week). But more important than the emotional roller coaster that accompanies snippets of knowledge, was what I wrote. Before I had Dr. Schuback call UCLA to have Dr. Wright examine her, I referred to our baby as Amanda. When I learned of her likely chromosomal diagnosis and the fatality of the syndrome, I called her the baby or “she”. I also described her physical appearance in animalistic terms: she had pig-like eyes, fawn-like ears, a turtle-like chest, a snake-like sternum. I was letting go. I was removing her personhood as I was preparing myself for her death. I was making the tragedy of a birth defect easier to bear by depersonalizing it. All of that was unconscious. We made decisions that I felt were what reasoning and concerned parents would make. Humans can react under crisis conditions and most of us face many such crises in our lives. Only the most paternalistic society and restrictive society would intervene for every sick child or adult. It requires a major breach of reason for parents to have their child removed from them and we use procedures quite different than a hot-line to a government official hundreds of miles away who has no knowledge of the case.

I later got to give a paper on the Baby Doe case and met the lawyer who defended the parents and flew back to Long Island with him. I met his court appointed guardian at a panel in which I was a participant. He was appointed by a Right to Life judge. He was a National Rifle Association conservative who had unsuccessfully run for office (before the Baby Doe case) as a Republican and Long Island is very nice to Republicans. He was Jewish. And to shatter the myths we project into controversy, the panel was held in his synagogue, a reform synagogue! His Rabbi told me his presence nearly split the congregation, but they were a liberal religious group and as long as he wanted to remain a member that was his choice. I spoke to the patient’s advocate alone after the panel. He told me the case was ruining his life. “My fellow Jews hate me. My neighbors hate me. People treat me like a pariah.” To add to the irony, the lawyer who defended the parents was Catholic.

Those who wanted surgery said the baby would die without it. She didn't. Those who wanted to let "nature take its course" argued she would be a "vegetable" if she lived. She isn't. Baby Doe is retarded and paralyzed from the waist down, but she is functional, and her parents love her now as they did in the days of her birth. It is not the parents who are unable to think in time of crises; more often it is those who would like to think for them that are the ones who are confused. One footnote to the case. Nedra did the chromosomes for Baby Doe. She has a normal chromosome number.

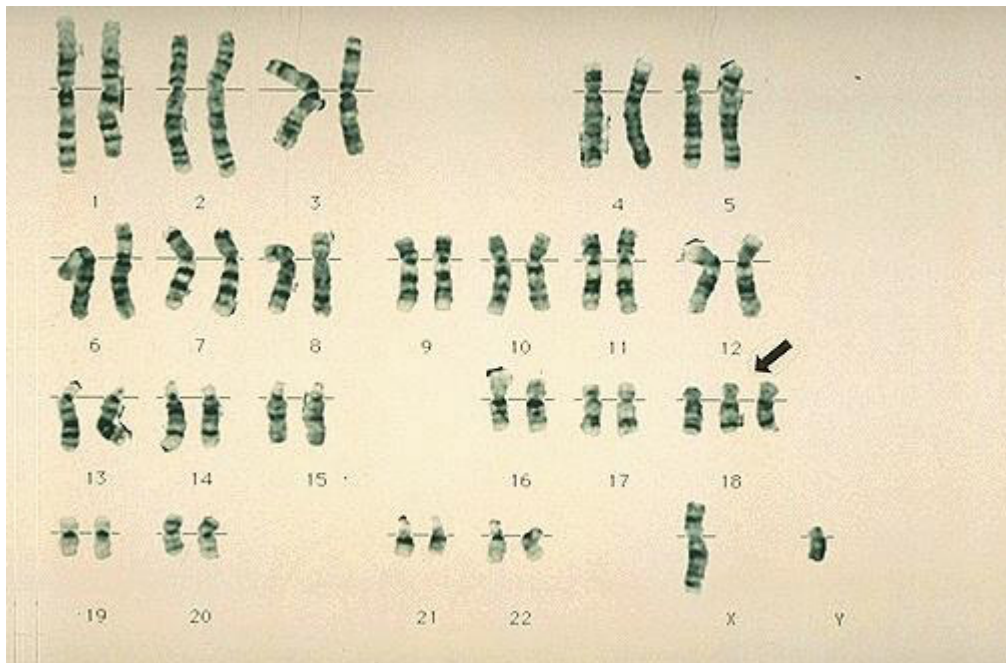


Figure 43-2

The karyotype (mounted cut out chromosomes arranged by size and shape) of Trisomy-18 [Edwards syndrome] shows the three number 18 chromosomes under the arrow. In our case baby Amanda would have two X chromosomes (lower right) instead of this rarer male karyotype of a male baby with the syndrome.

CHAPTER 44

SIX PhDs

Graduate students, unlike undergraduates, have a close relation to faculty. Undergraduates tuck in hours to see a favorite professor, or if they are lucky, they may put in 15 or 20 hours of research a week. Graduate students are frequently part of a laboratory for four or five years and after their second year their duties are almost entirely devoted to research. No matter how isolated and protected Muller was by his very efficient and caring secretary, we got to know Muller as a person. We knew his sense of humor, his irritability, his idiosyncrasies. No doubt all human beings have pockets of privacy that they guard and keep only to themselves or their most select intimate friends or relatives. I am sure Muller took secrets to his deathbed. I will too. As I learned doing Muller's biography, there are too many things happening in any one life to be fully recorded or documented.

I recruited John Southin from Queen's University and I knew his talents and enthusiasm to become a scholar. He already was one when we headed out on Route 66. John enjoyed reading widely and I knew he would feel comfortable working on a dissertation and have no difficulties jumping over the hurdles that line the way to the PhD. He chose Latin and French as his two languages for graduate school. There are not many science students who would have chosen Latin and I had to fight my colleagues to get that approved. John was also a troubled soul and I have almost a magnetic attraction to such students. He grew up in Brockville, Ontario, a Tory enclave from the Revolutionary War where the defeated loyalists streamed and settled. His family had converted en masse from Catholicism to the Church of Canada, a traditional Protestant denomination that Nedra and I attended for a few months while trying out religious services in Canada. He

had an older brother with whom he had severe sibling rivalry, a trait he carried into the laboratory when I added new students. He also was filled with contradictions. He admired socialism and its less dogmatic form in Marshall Tito and Fidel Castro. He loved the Queen and the idea of a Royal family as head of the government but with no political power or affiliation. He deplored the gross inequality of income and opportunity around the world, but he did not hesitate to spend \$400 (then!) for an alligator attaché case. He was struggling to define his sexuality when I first met him in Canada and he was gradually shifting from a bisexual to a homosexual orientation. He was witty and aloof. He made his room his castle. John nearly left when I took on Ron Sederoff as my next student. He had written to Krotkov at Queen's university and asked about returning. Krotkov talked him out of it. He convinced him that no productive laboratory limits itself to a single student.

John became more active with his socialist leanings after the Cuban missile crisis and the police riot that occurred when President Johnson came to Los Angeles to sell his "guns and butter" message. I argued a lot with John over politics. I was a classic liberal and knew from Muller's experience that communism was corrupt and ideological, and its mission was power to shape all its people and not freedom to allow them to shape their own lives. I certainly deplored the greed of capitalism with its lack of civic virtue in despoiling the land and dispossessing those in its way. Worshipping money does not inspire confidence in the future of society, despite Adam Smith's belief in some invisible hand to guide us all to our own benefit. John began making trips to Cuba to teach genetics there after he graduated and took a position at McGill. He was well received and invited back. He became the contact for Americans heading to Canada during the Vietnam War to avoid being drafted, most of them out of a crisis of conscience rather than fear of being killed. He was placed on the FBI list of undesirable aliens and was for a while banned from re-entering the United States. He was a remarkably successful teacher at McGill and I have run into many students who took and admired his courses. He became fluent in French and was among the first of the McGill science faculty to

offer courses in both French and English. He opened an androgynous bookstore that met a need for the gay and lesbian readers in Montreal.

John became head of the dormitory system. When he took it over students were unhappy with the food service, the sloppy and damaged furniture, and the drab environment in which they lived. It may have been better than the alternative, the student ghetto, that surrounded McGill, but many students preferred that to the restrictions they felt inconsistent with university life. John fired the food service contractor after he was offered a bribe. He then designed his own furniture and replaced fragile Danish modern and easy to steal furniture with more massive, sturdy chairs that students could plop in. He respected the privacy of the students and told them what they did in private was their business not his. He ate in the cafeterias to make sure the students got the food they were contracted to receive.

John accepted his homosexuality as innate, and he had a family history behind him. I worried for years that John would become HIV infected but fortunately that has not happened. He retired from McGill and returned to Brockville, made peace with his family, and he became comfortably rich restoring and selling Colonial age houses, often in ruins, and bringing them back to their posh splendor.

Ron Sederoff took my genetics courses while he was an undergraduate. He was a premedical student and had no difficulty getting accepted to Stanford Medical School. After one year he realized he had made a mistake. He discussed his love for research which he had doing a senior project in my laboratory and Joshua Lederberg, then at Stanford, told him he should go back to UCLA and get his PhD with me. He came back and absorbed the enthusiasm I had for the new molecular biology and the versatility of *Drosophila* for genetic research. I tried to teach a philosophy of comparative genetics. He found the molecular research at Stanford incredibly exciting. I wanted to tap Ron's immense energy and background for doing research and called Robert Edgar, then at Cal Tech, and arranged for Ron to do a joint project. He would use chemical mutagens to study the types of mutant changes in the dumpy locus in my laboratory and he would

commute to Pasadena to use the same agents on bacteriophage (viruses that infect bacteria and kill them) in Edgar's laboratory.

Ron was also Canadian, and his family moved from Montreal to California where he attended high school. Ron was a wild teenager, and this endeared him to me. He told me he was a hot-rodder and his conversion came when he was engaged in a police chase. He may have been doing 80 to 100 miles an hour when he lost control of his car. It had become airborne, and he was headed toward an intersection and underpass. Fortunately his car pancaked perfectly and hit nothing, and he walked away unscathed except for the loss of his driver's license. As a rebellious and unruly teenager he did not do well in school, and he had to go to a community college and there he flourished and made the transfer to UCLA. I like Ron's story because I believe in late bloomers, and I believe in redemption for the failures that dog our lives at different times in the life cycle.

Ron was driven by his insecurities. I know of no better way for people to succeed wildly than to be insecure and use that energy productively. Muller did it. Ron did it. And I like to think it is a driving force in my own life. He married and after a few years he and Margaret realized they were infertile. They raised two interracial children they adopted. It was a stormy marriage, Ron and Margaret having the vitality of arguing Jewish couples, thoroughly immersed in life, so well played in Woody Allen movies. It was a marriage that worked for about fifteen years and then dissolved into incompatibility. Ron continued his intense research in comparative genetics. He pioneered methods to introduce genes into woody plants, a technique of major interest to the lumber industry. He is happy doing his research at the Forestry School of the University of North Carolina. He called me up about ten years ago and shared the happy news that he was elected to the National Academy of Sciences. He later remarried and became a father again in his 50s. He was awarded the Wallenberg Prize by the King of Sweden for his contributions to molecular forestry.

My next two students came almost simultaneously. One took my course, and I was so impressed by his performance I invited him to my office to discuss his future. Harry Corwin was thinking modestly at the time. He

thought he'd be a biology teacher in high school. I had no doubts he would be superb in that role, but I told him to explore research and if he liked it, he should continue on in graduate school and seek a PhD. Harry came from a lower middle-class family that left Oklahoma during the great Depression. They were not Okies and actually managed to get to California in their own workable car. His father had a bicycle repair and sales shop in West Los Angeles not far from our original apartment on Granville Avenue. Harry married the daughter of a wealthy Vice President of a major bakery that marketed sandwich loafs for most of the supermarkets in Los Angeles and the surrounding communities. Harry, like Ron and John, was insecure. Each found an outlet in a different way and used it productively in their careers. Harry was also athletic and enjoyed playing intramural sports of all kinds. I once demolished his ego by playing a joke on him. I took his Frisbee and with a felt pen I did a parody of Agassiz's dictum at Wood's Hole "Study nature, not books." I wrote "Study Drosophila, not Frisbee." I learned from my other students how miserable Harry was when he read my comment and when I got him to my office I apologized and encouraged him. I shared my own insecurities with Harry and expressed my faith in his talents. Harry responded well to the pep talk and after he finished his PhD, he benefited in his job interview at the University Pittsburgh from a talent for presenting his work clearly and his ease on the golf course. His Department Chair was a golf enthusiast. Harry has been a superb lecturer at the University of Pittsburgh and served as a Dean of Honors Programs until his retirement. I owe to Harry the opportunity to serve as a faculty member on Semester at Sea.

Bob Hendrickson was an older student. He had served in the Navy during the Second World War and was at Pearl Harbor when it was attacked. He was ten years older than me. He was intelligent, reserved, and for several years had been working in the optometry department at the medical complex. He liked optics and microscopy. I set him to work on an analysis of the region where the dumpy gene is located. Bob was a private person with a dry wit and there was something about him I couldn't penetrate. He didn't seek my counsel and he was guarded when I tried to

talk about his past. I knew he felt inferior in some profound way, but I couldn't figure out why.

Bob went to Yale to do a post-doctoral study. I visited him when I came to a meeting held there and he invited me to his apartment. It was neat. Bob had the respect for order that the Navy tried to instill in its seamen. But I noticed something unusual on his bureau drawer. He had about ten bottles of liquor lined up. I thought of my NYU friend, Lou. My suspicion was confirmed when I listened from his sponsor that Bob had a "drinking problem." He left Yale and took a job as head of cytogenetics at a hospital in Denton, Texas. That lasted a year, and he was fired for his alcoholism. He managed to get another job in Denver and as he came off the plane, he headed straight for a bar and ended up in their skid row. He voluntarily entered a hospital and when he got out, he joined Alcoholics Anonymous. It changed his life. He never drank again. But he did not have an academic career. He parked cars at the Brown Derby and later became a photographer. When I attended the Lilly workshops in Colorado Springs I would call him up and he would come down or I would go up to Denver. He had one severe heart attack and recovered from that. He then disappeared and I could not locate him. I don't know if he had a fatal heart attack, fell off the wagon, or lives alone in the privacy he treasured. It is not at all unusual for teachers to find students disappearing from their lives.

Dale Grace was from the mid-west. He was one of the youngest of some 14 children and he hated his childhood. He swore he would never have children and he never did. He exuded rage over his life and the sad outcomes of his favorite siblings, some victimized by their other siblings. Like John Southin, he had a social conscience, and he was deeply opposed to our involvement with the Vietnam War. He served as a monitor in a protest march outside the hotel where Lyndon Johnson was staying and during the subsequent police riot, he used his body as a shield to receive the blows of truncheons aimed at babies in baby carriages. He was badly beaten by the police who somehow took out their rage over the assassination of President Kennedy against students who were peacefully protesting the escalating war in Vietnam. To many an American in the 1960s there was a sentiment that criticism of the government's military policy was not a

constitutional right but an act of subversion that deserved brutality, if not death.

Dale was a classic case of a student with a deep hatred of authority. He developed a bleeding ulcer over his stressed worries and after he recovered, he said he would never again allow his rage to eat away at his intestines. Dale was the most inventive of my students. His dissertation work and subsequent research used new approaches to study and interpret the structure of complex loci. Dale's great difficulties were his inability to communicate his ideas to others. He spoke in a drawl and his sentences were choppy. He realized he would never be effective as a teacher, and he sought to spend his life in full time research. He went to Holland for a post-doctoral stay to bring his ideas to Fritz Sobels, who headed the mutagenesis program in Leyden. I visited Dale there and he was profoundly unhappy. He secretly had learned Dutch so he could listen in on the conversations. He found many, including Sobels rude, as they would say in Dutch, guest in tow, "I can't go to lunch with you today, I have this stupid American I have to drag around." It was a sport among some of the faculty to use Dutch in this way with the safe knowledge that Americans were too lazy to speak anything but English. Sobels told me that Dale was impossible to work with, that he couldn't understand him, and that his data made no sense.

Dale entered medical school in Holland but got a severe case of mononucleosis and could not study for the examinations scheduled at the end of his second year. He returned to the United States and worked as a research scientist at the University of Oregon, switching to mosquito genetics. I met him there and at the International Congress of Genetics in Toronto. He was active in State politics and helped defeat a proposition that would have used tax money to fund a football stadium instead of running paths for outdoor enthusiasts. A few years later, I wanted to speak to him about the death of Billie Hawkins who used to nurse him through his miseries as a graduate student. No one had any record of who he was or where he was. He had disappeared, like Bob Hendrickson.

My last student was recommended to me by a colleague at Utah State University at Provo. John Jenkins (I called him JB for the initials of his

given names) was a gifted undergraduate who had an interest in genetics. We corresponded. I immediately liked his idealism. He had trained for the Peace Corps but didn't make the final cut. He also had the same lesions of growing up that I and so many of the students had. His parents were divorced, and his father was an alcoholic. Later his father committed suicide, one of the most searing experiences for family members to deal with, and it left a deep sorrow that didn't go away despite his warm and friendly personality. JB was like MacLeish's hero and the Job of antiquity. He had the lacerations of life and I admired him for surviving so wounding a childhood. Like Harry, JB was athletic. He had the scars of a well whacked hockey player. He was also a polished speaker and he articulated well what he read and thought about. When he finished up, he chose Swarthmore as the school that met his expectations. It was a superb elite liberal arts college where he would have an opportunity to teach and work with students. He carved out his life almost as he had it then planned. He was respected as a teacher, and he has written several successful texts in genetics and human genetics. Like Ron his marriage was childless and he and his wife, whom he met in the Peace Corps training program, adopted two children. Later the marriage fell apart and it was a bitter divorce. He had no problems remarrying and became a father with his present wife, who was originally a student in his class. On the occasions I have visited JB, I have enjoyed seeing him admired by his students and comfortable in an academic life for which he is so suited.

I have had quite a few students who came to work in the laboratory at UCLA who left either because they did not enjoy research, or they found other satisfactions. This is also common in the research university. No one wants a captive student. The relation has to be open and a lot of fun. I had immense benefit from the stimulation of my students, and they all called me Elof. I felt like a fellow student in the lab with them and I'm sure I learned as much from them as they learned from me.

CHAPTER 45

DEANING

There is a mutual disrespect that faculty and administrators feel for each other. I have been on both sides of that experience and understand why this is and always will be so. University administrators are paid to do unpleasant things. They have to fire people, vote against candidates up for promotion, cut costs when the state or fund-raising falls below expectations, and make policies that shift the direction of the university. Faculty may be politically liberal on national issues, and they are often seen by the public and their conservative critics as egg heads who are hopelessly out of touch with reality. But faculty (even Communist faculty I knew) are conservative on educational policy. They fear innovation. They don't want to revise their courses by dictate of new curriculum requirements. They dread the thought of switching from a semester to a quarter term for packaging their knowledge. They don't want change. Change means work and it means more time for teaching and administration and less time for scholarship.

Some faculty do like innovation. They keep on tinkering with their courses, with what they like to teach, and with the partitioning of their energies for teaching, research, and service. Some are eager for change and see this as a way to bring new fields into being. Administrators, like faculty, vary. Some administrators see themselves as serving the needs of the students, faculty, and public. Others see themselves as leaders, if not dictators, telling faculty what to do and they complain about the negative response of faculty in a condescending way, by comparing their job "to herding cats."

I am a lousy administrator. I tell people who are my superiors that they are wrong and if I really get angry (which is a rare event), I call them

incompetent. You don't last as an administrator that way. I fight like a mother protecting her children when my programs are cut, when my efforts to do my job are undermined, and when administrators make bad decisions. I have never sold out a student for my own gain.

My highest title as an administrator was Associate Dean of the Graduate Division at UCLA. That job lasted two years and I threw in the towel. I had been picked for the job because of my success as UCLA's premedical advisor. That success came because when I interviewed our students, I didn't hesitate to say in my letters that a candidate was marginal or plain bad news. A geneticist I knew who was at USC told me at a meeting "You know Elof, you're famous." I gave her a puzzled look. "At our admissions committee meetings, the members always say, "What does Carlson say?" I felt good about that. It meant I could rescue students who may not have the MCAT or grades to make the cut for acceptance, but because they were unusual students who deserved consideration, I tried to make a case for them. Similarly, I felt good that some grinds who were pompous or selfish and cared little for their fellow students got a luke-warm recommendation from me.

I was called while we were on sabbatical at Woods Hole. Dean Horace Magoun asked me to consider joining him as a Dean in the Graduate division. At the time we had a lot of young children to raise, and I thought perhaps a life as a College President might not be a bad goal to shoot for. This could be a taste of what administration is really like. I should have taken heed from some early warning signals, like the meeting I had with the Dean of Arts and Sciences who told me to write a detailed letter about our premedical services and how students should prepare themselves for medical school. I did and he promptly used it under his signature. I wouldn't have minded if he had said that's what he wanted to do and I was just to ghost write for him. I didn't lack skills in ghosting papers.



Figure 45-1

Horace Magoun was a noted neurobiologist and founder of UCLA's Brain Research Institute. He was dean of the Graduate School.

My first week on the job I got a call from an assistant to the Chancellor (in the University of California system the chief campus officer is called a Chancellor and the big honcho of all the campuses is called the President). He told me that he wanted me to give a graduate student he knew a fellowship. I was astounded. I told him they were competitive. He stared me directly in the eye and said, "If you want our office to cooperate, you'll have to learn to cooperate with us." I was on my way to my first ulcer.

I also learned that a half time appointment as a dean is a myth. It quickly becomes almost full-time work for half time pay. I found myself having less time to be with my students and less time to prepare for my courses. I was also not considered as being a serious administrator because real administrators are full time. I saw how divorced these administrators were from their faculty and from the students. They lived in their offices in the administration building and they had more pleasure being with one another than encountering the hostility or indifference of their constituents.

My staff consisted of a first-rate secretary who was a warm person who liked students and who was immensely skilled. There was an additional staff of four or five clerical workers. These included an administrative assistant who was inept in dealing with students. White students would be Mister or Miss and black students would be Charles or Elizabeth. Even

when I instructed her not to do this she kept lapsing into lifelong habits. She made people feel unwelcome. There was another clerk who was the daughter of a policeman. She sometimes looked at students as thugs. This was the 60s and students had a reputation among law enforcement personnel as subversives ready to sell out their country to Communism. A third clerk was an occasional recovering alcoholic. I was also given an aide de camp in the form of a young and ambitious worker, Jim Granger, who was originally raised in France. He called me “Mon general.”

I began the job in the Fall of 1965. A year later Ronald Reagan ran for Governor on a campaign that included a good deal of hostility towards the President of the University, Clark Kerr, and the graduate students who led the revolts at Berkeley. He said he would fire Kerr if elected and he did. He said he would tighten control over the funding for teaching assistants and graduate students and he did. I suddenly found myself in charge of a six-million-dollar budget with more than 95% earmarked by federal requirements on how it was to be spent. There were lots of post-Sputnik programs for foreign languages, for science development, and other programs deemed important in our race against the USSR. The rest of the departments were left without federal support and depended heavily on private money for fellowships and state money for teaching assistantships.

Reagan took the state money and centralized it with a threat that funds for graduate teaching assistants would be monitored and departments who allowed their students to rabble rouse the students would be cut off from support. While policy was being made in Sacramento on allocation of support for the graduate programs, I had only the private money for all those not on federal money. That meant most of the campus. A parade of department chairs and directors of centers and programs came by my office. I had sixteen private fellowships. Each chair or director told me the same story. “I want all sixteen. If I don’t get them, I can’t run this program.” When I asked about their colleagues who were just as needy, the response was uniformly the same “I don’t care about them. I’m only fighting for my program.” I did not fault their logic. In hard times chairs and directors will fight over table scraps. I awarded the sixteen on a competitive basis with a committee I appointed to represent the humanities, arts, and social sciences.

I excluded those programs with federal programs from competition. This of course made my colleagues in the favored departments angry because whatever you give a department or program is always followed with a request for more.

I had one major success getting outside funds. At the time I was there, Magoun and I did a survey of the campus. Out of 25,000 students we had only 25 black students. This was a national scandal. Blacks were left out of the feast of higher education. There was a civil rights movement, but it had just won the right to a vote and the right to sit in a Woolworth's cafeteria to eat like their white neighbors instead of being identified as inferior creatures fated to slink off to some collard greens and chittlins restaurant set up for blacks. We went to Watts a week after the riots and met at what then was the David Starr Jordan High School and talked with black faculty about ways to increase black attendance at UCLA. We prepared a grant. We would seek Woodrow Wilson College Fellowship runners up from historically black colleges and try to bring them to UCLA. We worked out a tuition remission and subsidy for room and board which included part time work in the library and similar campus jobs. We applied to the Danforth Foundation and met their representatives in San Francisco. We got the grant for \$350,000, a huge sum in those days, which would give us a chance to recruit about 20 students a year from those Woodrow Wilson lists. I realized how out of touch these students were with modern technology when some did not know what an elevator was. They had never been in one and thought it was just some windowless room into which they were being herded. They were startled when the room began to move.

The job had its effect on me. I worked hard to be fair and found that I was disliked for not playing favorites with those who knew me. The incompetent workers in the office could not be fired. They had the equivalent of a civil service status. Morale was low. I felt like I was mired to a tar baby. I began to turn ashen, and I'd sit in my laboratory talking to my students and colleagues and I'd give them my litany of woes. My guts felt irritated, and I was finally convinced that I should have x-rays taken. I had a crater or spot that persisted as barium sulfate flowed by. I was given

Mylanta and other antacids. I ate bland food. Nothing helped except my decision to quit. I stepped down as the Spring of 1967 came to an end.



Figure 45-2

I usually kept a small container of liquid Mylanta (an antacid) in my pants pocket for my ulcer. I never had another ulcer attack after I left UCLA. I learned to shift from stress to creativity when I felt stressed.

A year after I got to Stony Brook, I got a call from Dean Magoun. He asked me if I had ever heard of a student named Schnetzka. I didn't. "I didn't think so," Magoun replied. "We have three letters here with your signature awarding Schnetzka fellowships for 1967, 1968, and 1969. We believe Jim Granger forged your name on these and we are going to have the district attorney file criminal charges against him. Would you be willing to speak to the district attorney?" I did. The attorney said he would arrange for me to testify at the trial in December.

I went to the airport as instructed by the district attorney and asked for a ticket held in reserve. It was a first-class ticket. "Is this a mistake?" I asked the agent. "No, sir, they ordered a first-class ticket."

I flew out to Los Angeles with a champagne breakfast to start the day. I was the only one in the first-class section and well-pampered going to California. I got off and the district attorney met me. I apologized to him for using a first-class ticket and told him I tried to correct the error when I picked up the ticket. "Oh, that was no error. We wouldn't let a dean fly

tourist class.” That taught me a lesson about democracy in America. Titles count. Money counts. Influence counts. Democracy is for civics classes for students to learn.

I also learned how the law works. The district attorney treated me like a celebrity. He took me to the room where the Manson murder trial was in progress. He introduced me to the prosecutor for that case. I went over all the record and data cards that were used for the three awarded fellowships. I spotted quickly the faked evidence. Different social security numbers were used. The stationery for 1967 was wrong. Granger used the new stationery celebrating the 100th anniversary of the founding of the University of California. That stationery did not exist in 1967. The signature matched a rubber stamp my office used for routine forms.

At the trial the defense tried to discredit me as incompetent. They said I was too busy writing books and teaching to do the fellowship letters and that I had turned these over to Jim to do at his discretion. This was nonsense. When the district attorney got to me, he asked me the source of the fund for Schentzka’s fellowships. I told him they were from the Danforth Woodrow Wilson money. He asked what their intent was. I told him they were intended for minority students recruited from historically black colleges. He walked away with a smile, his back to the judge. Schentzka was white. The judge was black. Granger was found guilty and sentenced to three years.

We met in the corridor just before the trial. “Mon General,” he said, as amiably as ever. I told him I was sorry that we had to meet in such circumstances. He was too. He introduced me to Schentzka. I shook his hand. “Glad to meet you. I don’t think we met.” We both smiled.

CHAPTER 46

UNITARIAN

I was reintroduced to the Unitarians shortly after settling into the Zoology Department at UCLA. One of my colleagues, Bernard Abbot, mentioned his participation in the Westwood Unitarian Fellowship. It met in a large house that had been remodeled to provide a sanctuary for the Sunday services. Its church school met in a private day school about a five-minute drive from the Fellowship house. The minister was Irwin Gaede, a PhD historian who had gotten his degree at Notre Dame. Gaede was an excellent speaker and an intellectual. His services reminded me of the first experience I had in New York's Community Church on 35th street. He tackled issues of the day and gave them an ethical reflection. He was well read and, as I came to expect of Unitarians, he was liberal in both his religious views and his politics. He rarely talked about matters that touched our emotions.

I don't think Gaede would have held us if it had not been for the participants themselves. They were a diverse lot that cut across Los Angeles society, a dental technician, a middle management defense worker, a mail deliverer, several university professors, lots of school teachers and social workers, and people who enjoyed a religion that had few rituals, no creed, an invitation to think a lot about questions that matter, and a respect for diversity. Most were liberals in their politics as well. That meant championing civil rights at a time when the public image of a black person was that of an entertainer, a porter, a domestic, or a victim who accepted abuse. It meant questioning the hysteria for war preparations and the rigid values of the cold war.

Gaede was also controversial. His politics was not the issue; his personality was. He liked loyalty and he had ideas on how the Church school should be supported and organized. Others had different ideas on how it should be run. When the two pieces of a physical organization are separated it is not surprising that they become psychologically separated and drift apart. Those tensions weren't apparent during our first year, but they became more intense as we became more familiar with the community. As newcomers we had no desire to take sides and we were out of the fray. Gaede eventually left for the Midwest and a new minister was sought.

Horton Colbert was the opposite of Gaede in personality. He was a healer. He was insecure and scarred by disappointments in his life. He reflected a lot on those questions that matter and while he had no answers, he had thoughts that entered your being. I felt like I was going for a walk with Thoreau whenever I heard Horton's sermons. He had taught for many years at the Starr King School which is a seminary for future Unitarian ministers. He and his wife Lynette had adopted an African American child and raised her at a time when racism was very dominant and open in American culture. At one time Horton struggled with alcoholism. To those who liked Gaede's tightly organized lectures, Horton was a disaster. There was no apparent direction in Horton's delivery. He would focus in on a story and then flit off to another topic and tell another story and this would zigzag through the time he allotted for his sermon. They were not about politics or issues of the day. He was certainly liberal in his political outlook. But you could read that in magazines and newspapers that reflected your bias. What he chose were stories that reminded us we are mortal, we are fallible, we have a potential for change, and we can repair the damage we inflict on others and ourselves. He also celebrated life. Even simple things like watching children play or stopping in wonder at the size of an object carried by an ant, would make Horton take delight, like a child, at the novelty of the world and he reminded me how much there is to delight us in this ordinary world, stripped of its daily immersion in gossip, politics, economic uncertainty, war worries, and job frustrations.

I was often asked to give Sunday services when Horton was away or when the fellowship sought a change of pace. I usually talked about science

and how it touches our lives. I served on lots of committees and was soon on the board and for a year served as president of the fellowship. Nedra was active in the church school and also enjoyed Horton's approach to religion. Horton himself called his belief "naturalism." He wasn't sure if there was a God or an afterlife; he doubted their existence and he did not need those concepts to be religious. Religion for him was "the things that bind us together." It was a community of people who searched for values and reflected on them. It was a community that believed this world was worth living and worth improving. When I think of Horton, I think of the prophet Isaiah, with Horton walking humbly with his fellow suffering and fallible humans.

When we moved to Stony Brook in New York, we gave ourselves a year to settle in before seeking another Unitarian fellowship. We went to the fellowship in our village, Setauket. It was a fellowship without a minister. This meant a lot of time spent organizing and participating in Sunday services. Nedra took the lead this time and became President of the fellowship. We designed services as panels, as play readings, as rehearsed play performances, as variety shows with songs and readings, with lots of guest speakers from the university or from the community. Eventually we were overwhelmed by the amount of work as the fellowship kept growing and moved from one small house to a larger one and then began thinking about getting a permanent church and a part time or full-time minister. As in all institutions that encounter change, there is a debate, and not everyone wants change. Most did, and we had two interim ministers, both excellent and they helped shape a community that was still seeking to be active in designing Sunday services that met their needs and allowing the minister to do the other half of the Services.

We selected a permanent minister, Kate Lehmann, who was much like Horton. She wrote her sermons, but they were often like Horton's in their use of episodes from her life and her talent to relate the ordinary to ideas that matter.

When we moved to Bloomington, Indiana, in 2009 we joined the Unitarian Universalist Church of Bloomington. It was even larger than the

250 member Stony Brook Fellowship. It has somewhat over 500 members. I volunteered to be their historian and we joined their Humanist Forum. They have three ministers – one for religious education and the other two divide the pastoral and sermon responsibilities. Bill Breedon is an activist who was mentored by Father Berrigan in the protest movements of the Vietnam War. He retired in 2014. Mary Ann Macklin, the senior minister, is a lesbian who, like Lehmann, uses her life experiences to reflect on how to live. Breedon's replacement was Scott McNeill who began his duties in 2016.

I am still an atheist and expect to die without a belief in God or a life after death. But I consider myself a religious person. Few other than Unitarian-Universalists (the two denominations merged in the early 1960s) can accept such an apparent contradiction. I like to think about what theologian Paul Tillich called "ultimate concern." These are the questions raised by philosophers, theologians, playwrights, and great writers. They try to probe who we are, why we do what we do, and whether life makes any sense. I am an atheist because I do not need the supernatural to answer these questions, but these are questions all thinking people sometimes try to answer. I am not convinced that an answer framed through an ancient system of God and his angels and a belief in everlasting life in the form of a soul is any more effective than one that tries to accept the universe as it appears to be and tries to understand it and live in it.

I enjoy the insights that come from religions as much as I do the insights from science. Their approaches and assumptions are often different, but they share in common a raising of profound questions about life. I am aware both by my age (early 90s) and my knowledge of biology, that life is short in the time span of even recorded history and almost insignificant in the scale of life on earth. I know that most Nobel laureates are forgotten within a few years of receiving their awards. Fame rarely endures and several millennia from now most of our most famous names in the twentieth century will stir no memories. If in two or three centuries we are most likely to be forgotten by our descendants as well as by the fields in which we contributed, what then is the significance of our lives? That's a religious question. I find my own answer from Heraclitus or Hindu and

Buddhist thinkers who see life and culture as a river in which each of our contributions is a drop, individually not very significant, but collectively, a torrent. I know that is true of what I do when I teach. Drop by drop the facts and ideas accumulate and a river of knowledge washes over my students. Our contributions last in the river that sustains our culture or civilization. This will surely not satisfy those who need a belief in the immortality of their own identity or a divine being who can give love, rewards, justice, or other values the faithful seek. Fortunately, we have many hundreds of religions to satisfy our varied needs. For myself, I prefer the journey more than the ultimate destination, if there is one.



Figure 46-1

The Unitarian Universalist Fellowship of Stony Brook is on Nicolls Road near the Stony Brook University campus.



Figure 46-2

The Unitarian Universalist Church of Bloomington is on Fee Lane near the Indiana University campus.

CHAPTER 47

PETER GARY

My closest friend is Peter Gary. Just as Montaigne reserved a special chapter for his closest friend, Etienne de Boetie, so too, I reserve a chapter for Peter. We first met Peter at the Unitarian Fellowship in Westwood, a neighborhood in Los Angeles. He was charming, intellectual and European. He was also Hungarian. He liked to add to the reputation that Hungarians are curiously mad. His wit was convulsive and his talents numerous. Peter also had a book discussion group. He alternated a classic with a contemporary work, and he did not believe in democracy. He chose the books. No self-help, no how-to, no best seller thrillers; just literature. He chose odd literature you can dig into and come away with a mind filled with insights.

Peter had a PhD. He did not seek an academic life. He was just beginning his own business out of a garage making museum quality hand-carved art frames. He had tried academic life, at USC where he had taught music. He quit after one year. He couldn't stand his colleagues or students. None of them could compose to Peter's standards and none of them could commit themselves to music as he hoped for them to do. His PhD was from the Sorbonne in musical composition.

Peter grew up in Budapest, an assimilated Jew, pampered by upper middle-class wealth. His father's side was cerebral, scientific, and geared to business. His father sold Montblanc pens and other luxury items to the wealthy. His mother was musical. His aunt was Lili Kraus (1903-1986), a world class pianist who played in Mozart festivals in New York and who toured the world on the concert stage. Peter chose his mother's talents and took to music. He could listen to any music, and it gave him joy. He had

mediocre mechanical abilities to handle the clarinet. He was never going to be a star performer. He chose to become a composer. He was sent to the conservatory and studied with Kodaly and Bartok. As the war approached, Bartok left. In 1941 the US entered the war and fascist Hungarians rounded up its subversives. They were looking for Peter's father, but he was away in one of the safest places to be in occupied Europe—at a Leipzig fair in Germany. They banged on the door in the dead of night and Peter and his mother were taken to jail. Two days later on Christmas Eve they were taken by truck to the Polish border. They were herded together as other trucks met at this appointed spot and suddenly his mother threw him to the ground as the popping sounds erupted and the machine guns did their job. The trucks headed back and there was silence. He shook his mother to get up. She was dead. He was 15 years old, one of a handful of survivors, who decided their only hope was to head to the Warsaw ghetto. They walked at night and one ran into a friend who gave them a lift to the ghetto.

Peter did not speak Yiddish. He spoke English, French, German, and Hungarian. He was quickly selected for labor duty in a work camp and sent to Madonek, Dachau, and Bergen-Belsen. In Dachau he helped make tanks as a slave laborer. He survived, not through wits, but through luck. He had learned to eat garbage scraps and he was befriended by older men who kept his zest for life alive. After liberation from the Bergen-Belsen death camp, he became a translator for the US forces tracking down the SS camp guards and administrators. As a reward for his service, he ended up in the Sorbonne.

Peter and I kept in contact after I left UCLA, through the telephone and by occasional visits. I had him speak to my students at Stony Brook University in the Honors College about his Holocaust experiences. Whenever Peter was on a business trip going east, we would enjoy having him over, going to a Broadway show, and sharing in his hilarity. He was an ardent supporter of Israel, a scholar who enjoyed learning and teaching in adult extension courses, a composer who worked on an oratorio for the Holocaust, and a non-observant Jew who defined his own Judaism. Peter did not fast on Yom Kippur, arguing “God got enough of my hunger in the death camps. He doesn't need fasting from me.”

During the start of the Watergate scandals he wrote a nasty letter to President Nixon calling him a crook. He was submitted to a full audit by the IRS. This was followed by a perhaps coincidental destruction of his factory by arson. He rebuilt and continued his business until cheap frames drove hand-crafted ones out of demand. He switched to supplying physical therapists to hospitals and nursing homes. He failed twice in his marriages. Fortunately, his third wife, Judy Estrin, knew how to handle his moods and he found the love he was unable to sustain earlier in his life.

It's hard to keep up with Peter's energy, his tormented psyche, and his unpredictable behavior. He once went with his first wife Alice to a performance of the Los Angeles Philharmonic that he thought was substandard, stood up in third row center, and booed the conductor. He tired of Los Angeles life and moved to Victoria in Canada. There he began a life in retirement. He became a volunteer fireman until he hit his early 70s and had to slow down. He gave courses through the university extension that were always filled. He began to give Holocaust talks in the high schools of British Columbia . He has done so until he was in his mid 80s. He tells the students that he doesn't hate Germans. He hates hate. Hate kills. He tells his students that the next time they encounter someone whose skin is different in color or whose eyes look different in shape, to smile, extend a hand, and say hello. Tens of thousands of high school students in British Columbia experienced the retelling of his life during the Holocaust. Dealing with his past has made him re-explore his Judaism, but always on his own terms. He doesn't know if God exists, but he knows he is a Jew. He goes to a synagogue to participate in the prayers. He leaves early. He's not interested in the sermons. Like Job, he wants to know the eternal question, "Why did you do this?"

I love visiting Peter, listening to his music, discussing books he has read, and laughing myself silly. We tell each other our failures, our regrets, our fantasies. We introduce each other with pride to our friends and family. We have wild adventures together, like the time Peter drove his aunt Lili to give a performance at Ryder College in New Jersey. We sped in the dead of night not quite knowing which winding road to take. She made it in time.

We rolled her piano forward onto the stage and, unruffled; she played as if she were alone in the universe with her music.



Figure 47-1

Peter Gary with his score for his Oratorio: A Twentieth Century Passion for the Holocaust.

Peter noted that there were many Oratorios dedicated to one murdered Jew, Jesus, but no oratorios for six million murdered Jews. He completed his Oratorio, *A Twentieth Century Passion for the Holocaust*, and for years tried to find a sponsor for its performance. On two occasions it fell through -- first in Berlin and then in his own city of Victoria. The Berlin program failed to raise the money from private donations. Most disappointing was the initial interest of the University of Victoria performing it. It fell through when Moslem students protested when they learned that the Israeli Ambassador would attend, and the University decided to stay neutral and withdrew its offer. Finally he was told that it would be performed in Israel. He was excited about his final trip (he was 92) for the October 17, 2016 performance. In September he went to the hospital for recurrent bleeding from his bladder. He had been heavily irradiated in his 70s for prostate cancer. He received a dozen transfusions of what his wife Judy called robust

Canadian blood but died September 17, a month before the performance he so much hoped to hear. It was broadcast live, as a simulcast, at the campus auditorium, however, by the University of Victoria as an embarrassed atonement for their initial refusal.

CHAPTER 48

RAISING A LARGE FAMILY

Nedra and I share much in common. We both were educated in a new school every year. In her case, it was her father's work as a salesman and his restless personality that kept them moving from town to town. We both loved school and did exceptionally well as students. We both grew up in Depression households that had little money and learned to manage without middle class comforts. Nedra and her sister Sonya like Roland and me, shared a double bed with an imaginary line that separated them. They pinched the intruder to guarantee their territory. They lived most of their childhood in trailers, the easiest way to pack up and move for a salesman. Both of us have been relatively indifferent to money. Many people pursue it and they have a passion to spend it. We never really cared about saving, investing, or making money for its own sake. We preferred our cultural interests. I buy books. Nedra buys fabric to make clothes and quilts. New furniture, new clothing, jewelry, new electronic equipment and gadgets, expensive cameras, and other diversions that fill the pages of our magazines and newspapers have little appeal for us.



Figure 48-1

Nedra with Christina and John at our home on Sunnyside Avenue in Los Angeles. Nedra has a gift for comforting and loving her children.

Raising a large family requires lots of sacrifices. Until our youngest was about seven years old, Nedra stayed home, and I was the sole bread winner. My salary as a university professor was good but never lucrative. I had to watch my expenses and could not enjoy things I wanted to do like treat students to lunch or buy tickets for high culture either on or off campus. We didn't go out much without the children, so we didn't have to pay baby sitters very often. If I went to meetings, I avoided credit card meals and I shared a room with my students.

We learned to cook lots of casserole dishes and lots of pasta dishes. Both of us were used to such diets because so many Americans learned to live that way during "hard times." Our children accepted toys and games that were more intellectual; they learned to improvise for their own play

activities. Nedra was especially skilled in getting the children to use their creativity and imaginations. She designed and made hand puppets that they used for plays of their own invention. They participated in school and local shows setting up their own puppet theater. All of the girls learned to sew and make toys and clothing. The children all liked to draw and work on art projects.

I had learned from my parents to draw and to love using clay, water colors, pastels, charcoal, and oil colors. They did not mind that we painted in the living room or wherever we wanted. Creativity was more important than the looks of a room. I continued that tradition in our own household. Children learn the real messages of their parents. If they see that parents really treasure art and creativity, they will observe that the persons will clean up the mess in the living room. If the parents love the appearance of the living room more than the creativity of their children's art, they will send the children off to a play room, a basement, or some out of the way place. That tells the children that their creative efforts are not as valued as the neatness of the living room, the bedroom, the kitchen, or wherever an art project is initiated. I preferred spontaneity of creativity rather than having children interrupt creative work by going elsewhere to be creative.

I made sure that the children always saw us reading, listening to music, cooking, washing the dishes, and doing things. I teach by example both at home and in the university. Nedra made the process seem easy. Her personality has always been a pleasant one and she is slow to get angry and enormously patient. She is a good listener. She genuinely loved being with the children and doing creative things. I knew from the failure of my first marriage with Helen, that the worst thing a couple can do is not communicate. Helen and I did not talk about what disappointed each of us with the other. Nedra and I made sure we said what we felt, and our arguments are rare. For almost 60 years we have enjoyed each other's company and feel comfortable in each other's presence. I don't think I changed profoundly in personality after my divorce from Helen. I think happy marriage requires two people who continue to feel pleasure in what they do together and what they do separately. Nedra loves to quilt, and I couldn't sew anything without producing an erratic tangle of thread and

mismatched fabric. I love what she does. Her quilts are works of art and she is a serious quilter whose work was ranked highly enough to be accepted at Quilt National, the most respected juried show in the US. Many of her quilts have been published in quilting books or magazines. Nedra is petrified at the thought of talking to groups and I learned not to pressure her to do so. I find talking to groups as comfortable as talking in my living room. We appreciate we have different skills, and we admire each other for them. I can't figure out why that same respect was lacking in my first marriage. Helen was a fine poet. She published about a dozen in her short life. Somehow, we never got it across that we appreciated each other's gifts. Nedra and I do, and it is a genuine thrill.

Nedra was active in the National Honor Society when she attended Mishawaka High School in Indiana. Like me, her grades fell when she entered college. I always knew Nedra had lots of talent and that she would make use of those gifts. After our children were all in school, she began to volunteer at the university hospital. She used her laboratory skills that she had learned at Turtox in Chicago and did biochemical extractions for a physician, Dr. William Turner, who was looking for genetic and biochemical markers associated with manic depressive families. He sent her to Staten Island to learn cytogenetic techniques so he could see if there were any chromosomal defects associated with his families. Chromosomes could be stained to reveal a complex banding pattern that uniquely distinguished each of the 23 different chromosomes that a sperm or egg contains. He was hoping such band variations might show up in the affected relatives.

After Dr. Turner's grants ran out, Nedra got a job in cytogenetics as a technician preparing chromosomes for those who requested amniocentesis. In this technique a physician removes fluid from the "water sac" or amnion that surrounds the embryo. It has embryonic cells floating in the fluid. These are cultured and when there is a sufficient growth of them, they are checked for chromosome number and abnormalities of chromosomes. Nedra did this for ten years and it was nice to discuss her cases with her. It was a way of sharing our mutual interest in the life sciences and our interest in human heredity.

About ten years ago Nedra read an ad that a new in vitro fertilization (IVF) facility would open up in a nearby town, Port Jefferson, about three miles from where we lived. She got the job and became an IVF embryologist. She has literally introduced a husband's sperm and a wife's eggs together to initiate the lives of more than a thousand babies whose existence required the technology of modern science. Nedra told me that when she was a cytogenetic technician all the interesting cases were bad news for the parents because almost any gain or loss of a chromosome or complex rearrangement of chromosomes led to birth defects. She much prefers her IVF work because virtually all the interesting cases are good news for the parents. Some of the stories are marvelously strange. In one case the husband's ejaculation was retrograde and went into his bladder rather than out his penis. The team got the sperm out of the voided urine and succeeded in fertilizing the wife's eggs. In some cases, men who I would have taught to my class as hopelessly sterile, can now become fathers, even if the sperm duct that leads the sperm to the penis is missing. A physician can insert a needle into the epididymis (a coiled sac in which sperm are matured after formation) or into the testis itself and draw out some sperm and inject these sperm individually into his wife's eggs.

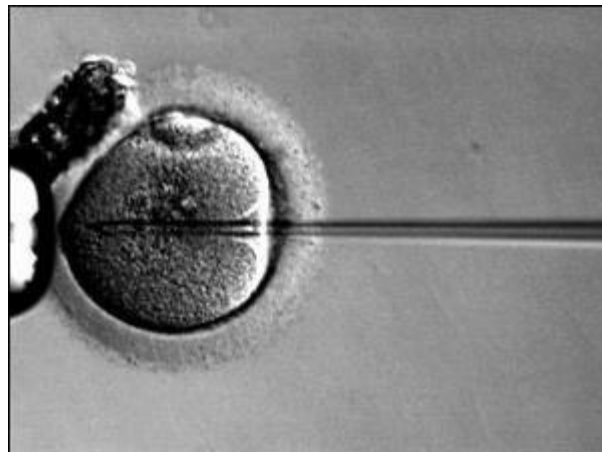


Figure 48-2

Photo of injection of a sperm into an egg, a process called ICSI (intracellular sperm insertion), one of several techniques used to help infertile couples have children.

Nedra discussed these cases most often during our weekly date night. We went to dinner once a week to catch up on each other's activities. It

became a luxury we could now afford. All our children have grown up and are launched into their own careers. I told her stories of my students and the politics of campus life and ideas for my latest books or articles. We also discussed the ethical issues involved in these complicated sterility cases. I worry about the biological implications, the long-term evolutionary consequences of passing harmful genes into the population by technology.

We enjoyed being parents and seeing our children develop into decent human beings. We raised them Unitarian with the understanding that they were free to choose their own theology, religion, or disinterest in religion. They have certainly followed our advice. None are Unitarians! We still are and very much enjoy its continuing search for meaning and its commitment to a more just and tolerant world. We let them have free reign with their talents and careers. Claudia lived in Manhattan and she was a designer for web pages and has been a book designer and a map maker for end papers in books. She was a web designer and produced brochures for the American Friends of Magen David Arom, the Jewish Red Cross. She also had three books of poetry and a children's book published. Christina was an elementary school teacher and artist and lives in Bellingham, Washington where she is now a departmental secretary at the University of Western Washington. Erica is a toy designer and has worked for several major toy companies and also designs and makes costumes for female and male ball room dancers. She has moved to different states but most of her toy designing was in Florida. John was an actuary and software designer for corporate retirement and health insurance plans. He worked in the Boston area. Anders, our youngest, finished his PhD in structural engineering at Caltech. He became a professor at the University of Southern California teaching engineering to architecture students. He is now in Manhattan working for a major engineering company.

CHAPTER 49

THE GENE: A CRITICAL HISTORY

The paper I wrote on gene structure while in Canada for the *Quarterly Review of Biology* generated a lot of postcard requests for copies. It also gave me a reputation as a scholar in the history of genetics. At that time, 1960, there were few historians of genetics alive and publishing. The last major works in the history of genetics were written in the 1920s about work ending at the turn of the century with the rediscovery of Mendelism. It got me interested in pursuing this field but because I was heading to UCLA and because I had a laboratory to set up it wasn't at the top of my priorities. I tucked it away for the future. That future began to come after the Kennedy assassination, and I began to think about what I wanted to do with my life. Life is very uncertain. From the Medieval play *Everyman* we are reminded that our life may end in a day. If the world can be cruel and unfair, how do we live in it? Do we just look away? Do we just "attend our garden" like *Candide*? Do we tilt at windmills? I knew that I would not drift in life. I was too Faustian a personality for that. I wanted life to be constant renewal and challenge. I was not one made for routine repetitive acts. I knew that one way to inform the world was through teaching. Good teachers have a lot of impact. But in the academic world, good teaching is not held in high regard unless the person is also a productive scholar. I began the shift to scholarship in 1964. Amanda's death was another contributing factor. The "bolt out of the blue" that delivers an unexpected birth defect made me aware that life is highly unpredictable. It becomes less so when science gives us insights and when we can spread the word to a larger audience that they don't have to take it on the chin from fate if we already know how to use knowledge.

These thoughts were leading me to the direction of teaching large classes for non-majors. I was astute enough to realize that such a commitment requires tenure (I had it) and the need to be productive as a scholar. I gambled that the scholarship could come from writing books and articles in the history of science. I could stick a marker in a book I was reading and come back to it later. But there was no way I could abandon an experiment with living creatures. It is their life cycle that determines when you are there to mate them, collect them, examine them, and treat them with mutagens. You can't interrupt that for some other activity. Teaching well for large numbers of non-science majors is a commitment that requires a sacrifice. I was still not certain I wanted to do that.

There was an opportunity to find out. My first sabbatical leave was coming, and I chose an option of taking a semester at full pay rather than two semesters at half pay. We arranged to go to Woods Hole in Massachusetts, and I would write books. I had several in mind. One was a text in genetics. It would be comparative genetics, my pet theme at the time. I had signed with Saunders and was already well into its overall design. I thought I'd finish most of it while writing full time. I also thought I would look at the history of genetics and see if there was a topic worth pursuing.



Figure 49-1

Aerial view of the Marine Biology Laboratory at Wood's Hole on Cape Cod in Massachusetts.

We left in late December and drove through the rain, then bitter cold, and then falling snows as we moved steadily northeast across the US. We

stopped along the way to visit relatives in St. Louis and Indiana and then made the last leg to Cape Cod. We arrived as a Nor'easter hit and the waves were crashing along the shores as we found the parking lot to the brick apartment buildings where a furnished apartment awaited us. No one was there except a nun who was one of T. H. Morgan's last students. She let us in, and we settled into our first night of our sabbatical at Woods Hole.

Woods Hole was founded in the late 19th century by Alexander Agassiz. He was the son of Louis Agassiz, a Swiss biologist and geologist who was one of the most revered scientists in the world at the height of his career during the 1870s. Alexander Agassiz liked the idea of the United States having a marine biology station similar to that started in Naples in the 1860s. The Naples station was run by a consortium of universities, mostly German, and it was a magnet for attracting American scientists who wanted to learn the new field of experimental biology. The Woods Hole Laboratory competed with the Naples Station. Over the years it built a substantial library, and it had many laboratories where scientists could use marine or fresh water tanks to store their specimens and do experiments with them. In the summers it was jammed, and the streets would be difficult to get through. In the winter it was abandoned, like a ghost town, with a tiny crew of full-time scientists and maintenance people. The library was run on the honor system during the winter. There was no librarian, and the library was open day and night.

It was a wonderful place to raise young children. We would walk to the docks and feed the seagulls that would swarm around the children. We could watch the ferries go to Nantucket and see the experimental laboratory ships load up for their trips to do oceanographic research. For the children we could go to the public library and every book they wanted was there. No one was around to have checked them out. We read all the Dr. Doolittle books and it was a favorite evening activity, the children in awe of Dr. Doolittle and his strange animal adventures around the world.

Nedra and I also used it to gain some emotional distance from the death of Amanda. We enjoyed the trips to Falmouth and the exhilaration of immersing ourselves in a forgotten season. I bought a typewriter and some

paper and then settled in to write. My routine was simple. After breakfast I would go to the library and in the empty reading room; I chose a desk by the window so I could see our apartment door. If Nedra wanted me to come home, she would just wave, and I'd leave my stuff and be home in about two minutes. While I was at my desk, I had access to what is called a reprint library. Woods Hole librarians received these collections of separate articles sent by investigators to one another in the days before there were duplicating machines like Xerox copiers. It made it easy to read the entire life work of a single author scattered among dozens of journals, many obscure and hard to locate. I thought I'd do some browsing to write a few historical chapters to the text. I began to read these collections of the old timers like William Bateson who gave a name to the science in 1906 by calling it genetics. I read his scientific foes, like W. F. R. Weldon and it was like a brawl as these authors would slug it out in print, accusing each other of sloppy thinking and poor science. I did the same with the papers of Muller and William Castle. Another fisticuffs in print. These guys hit below the belt and didn't mind ad hominem ripostes. I felt somewhat like an addict playing solitaire. One more game. Maybe the next will be tiresome, and I'll drop it. But they weren't repetitive, and they weren't boring. These guys were emerging out of their papers and their personalities were coming alive. I began keeping detailed cards on each paper and I'd write out choice quotes that captured the flavor of their personalities. I began speculating what this meant in my revived diary that I began shortly after we arrived.

I decided to begin with the rediscovery of Mendelism in 1900 and the role Bateson had in moving genetics to central stage in biology. Muller did not like Bateson and what little I knew before I began writing his papers was a negative image of him as a sore loser who missed out on modern genetics by his refusal to take chromosomes seriously. He screwed up his interpretation of several major phenomena he had actually discovered but his explanations were so wrong he lost the priority of being recognized as a pioneer who led the way into a field he named. I got a very different impression of him as I read his papers. He became a heroic figure in my mind. He had to fight almost all of science in England which at that time had made a saint of Darwin. Unfortunately the Darwinians embraced a

mathematical theory of hereditary traits that was false. They thought Mendelism had nothing to do with the heredity that is of significance to evolution. Mendel's view was actually right. But the two schools would eventually find harmony in population genetics a good twenty years later. In their two decades of squabbling, each camp hated the other. When Weldon dropped dead riding a bicycle to work, his widow blamed his death on the venomous articles that Bateson had written about her husband and the nastiness of his comments when they were in meetings discussing each other's work. Fortunately for science, the era of duels was over.

I liked my first chapter. I shuffled my cards and organized them into chapters and suddenly this critical mass of knowledge was plopping into place. I am very Baconian in my approach to science although many of my friends in the philosophy of science deny that Baconian induction exists. Who cares? It works for me. In some six weeks I had written more than half the chapters I planned for this book. I was very happy because I was learning so much and the past was coming alive. I saw how remarkably difficult it is for ideas to survive. There is almost a Darwinian selection against failed ideas, and they disappear out of the active vocabulary and citations of scientists. They disappear out of texts, too, and students become ignorant of the history of their fields. Perhaps this is all to the good. A scientist is happier to work in the present and think for the future. Looking back is a historian's love.

I also felt guilty. I was now hooked on writing my book on the gene concept. I read dozens of scientific articles every day and took notes on these and whenever I had time to spare, I would write. It didn't matter when because I had no employer to worry about. If I wanted to go back after the children went to sleep, I could work in the library until midnight and snooze in until 8 AM before starting an assault on the next day. I was alone in the library. There was nobody around to distract me from my work. If I was getting writer's cramps or eye strain I would get up, cross the empty library and look out on Eel Pond. I always responded to Nedra's signals when meals were ready and when the children needed to go out to play or to their library. I wonder if this is how royalty felt in smaller principalities. They

were able to create a world of culture around them and they could be as private or public as they wished.

I finished all except a few chapters when it was time to leave Woods Hole in May. The summer was already committed, and thousands of students would join hundreds of professors for a marvelous immersion in science. We packed our belongings and headed to Indiana where I spent the summer using a rented office to type away and finish the first draft of my book. I loved it. My editor, Tyler Buchenau, at Saunders was aghast and disillusioned. I had let him down. I told him he could have the book to produce, and I would take any terms he offered. He liked the book and they published it. But my title, *the Gene Concept*, was preempted. A small paperback by a student, Natalie Barish, who took one of Muller's courses had used the title for her paper back text that was part history and part review of the current status of the gene. I suggested as a replacement, *The Gene: A Critical History*.

The book went from second draft to copy-edited manuscript, to long galleys, to page proofs. I did the index. I responded to lots of critiques from referees and I had to delete an episode that embarrassed Tracy Sonneborn. Muller said he trusted my judgment and did not need to read it prior to publication. It then went to press and one day a package arrived in my mail box. I opened it and pulled out my first copy of my first book. It was like being a father again. The book had mixed reviews. Most who were not involved loved it. Jack Schultz, a student of Morgan's, felt his work was more important than I rated it and thought I had been brain washed by Muller in over-inflating Muller's contributions to Morgan's school. He considered the book flawed and said so in an eight-page lead review in *Science*. The book sold well but most of the royalties I never saw. They were deducted by Saunders to pay back the expenses they laid out for the text I never wrote. One pays a price for guilt. The genetics text would have made me rich or at least comfortable. No matter. I had the pleasure of publishing a book that I know will still be on library shelves and cited a century or more from now when virtually all text books of our time have long disappeared from memory.

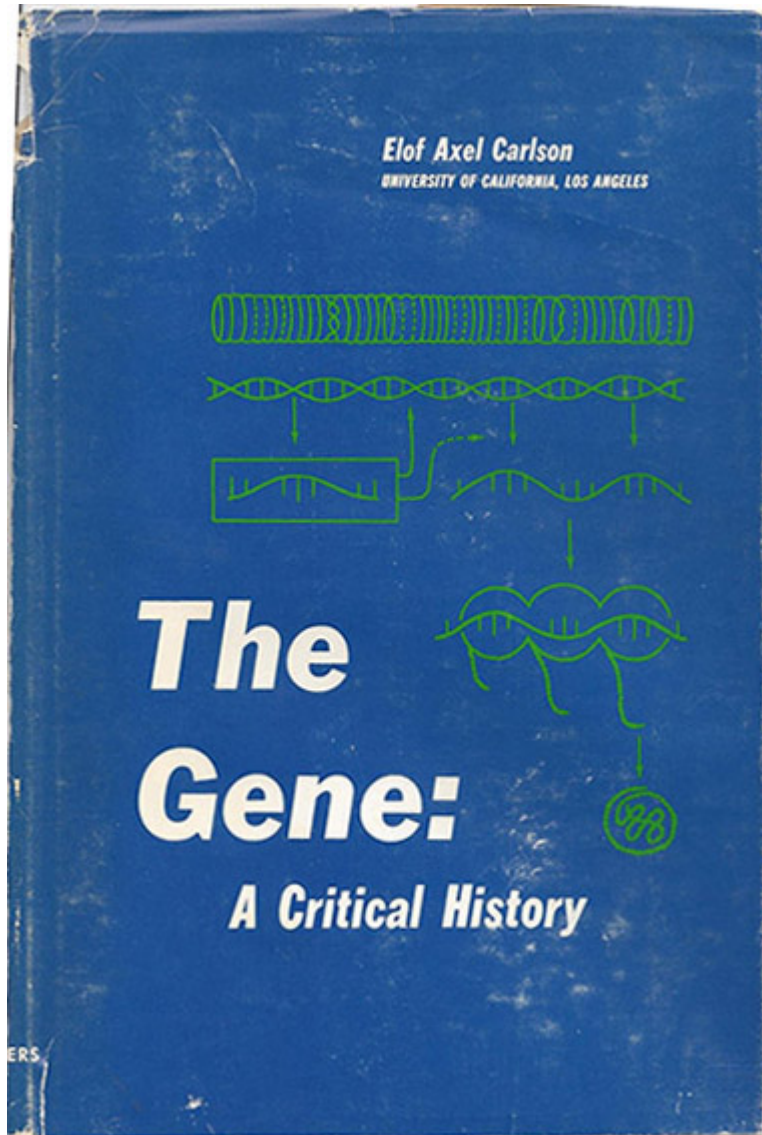


Figure 49-2

The Gene: A Critical History appeared in 1966.
It established my reputation as a historian of genetics.
My brother Roland did the cover and illustrations.

CHAPTER 50

LSD

I never tried LSD as a hallucinogenic drug, but I made good use of LSD for my genetic research. I had been studying the effects of quinacrine mustard as a potent mutagen. Irwin Oster had responded to an inquiry by phone shortly after I came to UCLA:

“I would like to compare x-ray and chemically induced dumpy mutations. Could you recommend a good mutagen to use?”

“I’m using an experimental drug that my colleague, Dr. Creech synthesized. It’s called quinacrine mustard.”

“How do you administer it?”

“You have to inject it.”

“If I came out to Philadelphia, could you teach me how to inject flies?”

I flew out to Philadelphia and got to see Irwin at his laboratory in Fox Chase at the Institute for Cancer Research. He taught me how to pull Pasteur pipettes over a reduced flame on a Bunsen burner and soon I was making needles that could be held by hand under a dissecting microscope and inserted into the thoracic cavity or abdomen of male flies that were only about one-eighth of inch long. I would hold them with a pair of fine pointed tweezers and learned not to squeeze the flies too hard. I had my share of squashed flies before I learned to inject them and watch their bodies bloat under the dissecting microscope.

Irwin took me to dinner at a Middle East restaurant and we watched a belly dancer gyrate for us and I admired the beads of sweat on Irwin’s forehead. The dancer was a college student, it turned out, at the University

of Pennsylvania, and she did this to earn her living expenses while going to an elite Ivy League school. The Greek ouza contributed to our good mood.

I returned and began injecting flies and got proficient at it. I began with injecting ink, then vital dyes, then fluorescent pigments that I could check under an ultraviolet light shining on the stage where the etherized and injected flies slept. When I was confident it would work, I began a series of injected flies that received quinacrine mustard and a control series that received an equal volume of buffered water. The results were dramatic. Quinacrine mustard (which I called by the code name ICR 170 given it by Creech) worked as a potent mutagen. The offspring came out in large numbers, but the mutation rate was similar to what would require about 6000 roentgens which is roughly about 15 times what it would take to kill half the people exposed to radiation.

It was even more dramatic when I had looked at these flies. They were almost all mosaics. They would have a normal wing and a mutant wing or a normal set of bristles on one side of the thorax and a disturbed whorl of bristles on the other side. They were mutational mosaics. I quickly came up with an interpretation that the sperm DNA was damaged in only one of the paired components that make up the rungs of the DNA ladder. When the sperm chromosome got copied one cell ended up with the mutant strand and the other ended up with the normal strand.

I had a copy of the molecule that I drew on a 5 x 8 card and pinned it on a cork board. It had three rings and a couple of side groups coming off a small stem. Attached to one or both of the side groups was a chlorine atom. My students and I speculated that this chlorine bit into the DNA, pulled out a hydrogen atom and became attached to the DNA and then swung into the molecule and partially unwound it so that when it tried to make a copy of the gene it made errors with extra or missing rungs being introduced into the gene. This of course altered its function.

About the time my articles on this chemical agent were coming out, I began reading articles on LSD. It was publicized by Aldous Huxley in his *Doors of Perception*, and it was beginning to make its presence known on campus. The UCLA psychiatric center began studying its effect on subjects

and they found it wasn't what students thought it to be. Artists thought they were doing terrific work while taking LSD but when they were back in their ordinary world, they listened to what they composed, or how the tape sounded, or saw the pictures they drew, and they were disappointed with the results. There were also reports of suicides among students or accidents while driving while impaired because of hallucinations.

Timothy Leary became a guru of the LSD fad at Harvard and after he was ousted, he began a national campaign to "tune in, turn on, and drop out," which many students did. He thumbed his nose at the legislators and the law, and this ended up creating a wave of tough laws against the use, sale, or possession of LSD. Soon articles began to appear that LSD broke chromosomes, caused mutations, and even, in the words of one investigator, was "the most dangerous mutagen known to science."

My students and I were a bit surprised by this because we had tried a form of quinacrine that was identical in all respects to quinacrine mustard except that it lacked the chlorine attached to the side groups. That form produced no mutations. We figured that LSD, which superficially resembled the altered quinacrine with side groups, would also be ineffective as a mutagen. I cautioned, however, that we wouldn't know unless we tested it.

I wrote to the National Institutes of health and sent copies of my publications and told them that I was interested in doing a large-scale test of LSD to check out its effects on genes and chromosomes. I got back a letter that told me to send a protocol of all the injections I would be doing, and they would send me the exact amount needed for doing these experiments. It took six months of paperwork and certification before I got the approvals. I then got a call to go down to the post office in West Los Angeles and to sign for a special package that was being held in security for me. It was my package of Sandoz LSD, in ampoules and powder form and I was on my way to setting up the experiments.

This created a security problem. I made sure that I never left the LSD in the laboratory. I always carried it on me and made sure it was secure. I complied with federal requirements that I did all the injections myself and

my graduate students and technicians got to set up the matings and count the offspring in a carefully controlled experiment. We looked at more than 30,000 flies and studied lethal mutations (those that eliminate one of the expected categories of sons that should show up), visible mutations (using my dumpy gene system), chromosome breakage (measured by a genetic test of exchanges between the two large chromosomes of the fruit fly), and gains or losses of a sex chromosome. I gave the same concentration of LSD as I did of quinacrine mustard. I calculated this was equivalent to 75,000 times that of a human trip dose.

I did not see any unusual behavior in these flies. Flies don't have too many elaborate behaviors. They move against gravity and toward light. They have a courtship dance of three or four ritualized behaviors; they feed, they fly, and they laze about resting on the glass of their vials or on the food they eat. I saw no differences between the control and the doped-up flies but since I had no objective ways to measure that behavior, I can't rule out that there were subtle behavior differences. Certainly, measured by what flies do – eat, mate, fly, chase each other, or stand still – there was no dramatic difference I could see.

The results were uniformly negative. No mutations, no chromosome breaks, and no gains or losses of chromosomes. They were just like the controls. LSD was not at all a hazard to genes and chromosomes like x-rays or quinacrine mustard or other standard agents that induce mutations. I wrote it up for publication with my students as co-authors, and it was accepted in *Science*, a major journal for news of general interest to all scientists. Unlike the front-page coverage that LSD was a potent mutagen, our article received no publicity to speak of. I did not at all feel slighted. I was very happy. I realized that people who are not scientists, particularly students, would look upon my work as a justification for usage of LSD. I had made sure I ended my article with a reminder that LSD was still a risky drug to use because of its psychosis-inducing effects. I was dead set against its abuse as a campus and social drug.

When people asked me why I had not had enough curiosity to use LSD when the government gave me free LSD to use, I replied that I was much

too cautious to tempt myself because my mother was psychotic. At best, if schizophrenia has a genetic component, I would be heterozygous for those genes. I did not want to lower my threshold to psychosis by flooding my neurons with LSD. I also told students and others who asked, that I knew too many colleagues and students damaged by LSD who had recurrent nightmares and one colleague, in the English Department, whom I knew quite well, who lost his career when he was so drug impaired that his classes became bizarre and that led to his colleagues attending them and he was then admitted to the UCLA psychiatric center for treatment.

It turned out we were right. Our article was confirmed by other laboratories, and I attribute the initial reports to the still imperfect ways in which chromosomes were prepared and studied in the 1960s. It was more of an art than a science and their well-publicized experiments involved small samples of users or specimens of tissue from users and non-users.

Several years later I returned to the UCLA campus and met a former technician who was still working at the university. He said he could never find where I hid the LSD and there wasn't an inch of the lab and my office that he hadn't searched. When he couldn't find any LSD, he instead took spoons of dead flies that had formed a sump in the ethyl alcohol "morgues" and ate the flies, hoping to get an LSD experience. He never did. I was glad my caution was obsessive.

My last contact with LSD was in the early 1970s when LSD was hitting the campuses again. I was walking from my laboratory across the Stony Brook campus through a wooded area with a narrow dirt path. A student in one of my biology classes stopped me. His breath told me he was not drinking. He eyeballed me almost nose to nose. "Dr. Carlson," he said, as he grabbed my lapels, "you...." He took a long pause, "... are the devil." Two of his friends quickly dragged him away and later that week one of them came up and apologized for his friend who, he said, "was having a bad trip."

CHAPTER 51

MULLER BIOGRAPHY

I did not think of doing a biography of Muller when I was his graduate student. I thought of doing a *New Yorker* "Profile." I learned about Muller's life piecemeal, the way children learn about their own families. I knew a lot about his scientific career because I had read most of his papers over five years of working in his laboratory. When I was finishing the book on *The Gene: A Critical History*, I thought that a nice counterpart to studying how an idea developed was to study how a career developed. Muller was unusual in having carried out research in New York, Houston, Austin, Berlin, Leningrad, Moscow, Madrid, Edinburgh, Amherst, and Bloomington. Did his ideas for research change as he moved from place to place? Did his social views on genetics and society change as he moved about? What made him tick? How much did his private life influence his scientific life? These are questions biographers would certainly consider. I wanted more than to narrate his life. I wanted to understand as much of it as I could.

I asked Muller if I could do his biography after I sent him a copy of *The Gene*. He told me he liked what I wrote on the gene and that he would help me with the biography by granting me a series of interviews. But before he would do them, he wanted me to read his correspondence with his lifelong friend and high school classmate from Morris High School in the Bronx, Edgar Altenburg. Muller said he would speak to Altenburg. About a month or so later I received a packet of several hundred Xeroxed copies of Muller's letters to Altenburg, virtually all of them hand-written. They dated back to 1916 when Muller was at Rice Institute, his first teaching job. Muller had received them from Altenburg with the warning that there was a

lot of embarrassing information in them and that he should look them over first. Muller did so and he indicated in black ink “OK” and “NoK” for what he wanted put in or not put in for the most controversial issues and topics. He had argued with Altenburg that I had to see him as he was in his full life, with errors and blemishes, if I were to do an honest job of interviewing him. Muller told me that he felt everything in his life was suitable for publication, but he wanted to explain to me some of the things he did that would be taken out of context if the background were not known.

This was the spring of 1966 when I asked Muller. He was in frail health and had had several heart attacks and was in congestive heart failure. Thea, his wife, carefully monitored his diet and his activities. He had been retired from Indiana University since 1962 and had spent some time at City of Hope Hospital in Duarte, California where he continued writing articles. But he was also felled by additional heart attacks. Thea kept delaying the interviews because she did not want her husband to be excited by reliving the past. Muller put off the interviews because he didn’t want them to be repeated for his children. He proposed my flying to him during the Christmas season when his two children would be out. During the Christmas season he entered a hospital in Indianapolis and quickly slid into a terminal condition. Thea wrote back that his mind was so deprived of oxygen by his poor circulation that anything he said now would be faulty. He died in early April of 1967. I never got to interview him.

In the meantime I bought a tape recorder (they were bulky in those days) and had already begun my interviews locally. I went to Pasadena to see Alfred Sturtevant, one of Morgan’s students like Muller during their graduate days at Columbia. Sturtevant did not want to talk about the past. He was evasive. When I pressed him, he took me out to see his iris garden. I understood why Sturtevant wanted to let sleeping dogs lie. He and Muller collided a lot over the years. When I was at the Stanford meetings in 1957, I had learned that Sturtevant was working on the dumpy locus. I immediately went into that blood draining paranoid experience that all graduate students fear—being scooped. I went to Muller and told him of the rumor I had heard. He said, “Come with me,” and he walked up to Sturtevant, “Sturt. This is Elof Carlson. He’s working on dumpy. I thought the two of you have

something in common to discuss.” I told Sturtevant what I had done, and I had actually done much more than he (I had been working on it for more than two years). Sturtevant listened and said “That’s great. Go ahead and publish it. Don’t worry about me. I won’t publish anything on dumpy.” I immediately admired Sturtevant for his generosity and his kind way of reassuring me when he detected my panic.

I flew to Texas and thought I’d interview the oldest geneticists first. I started with T. S. Painter, who was the first to work out the relation of chromosome banding to gene location in fruit flies. He had been a president of the University of Texas. I pulled out my tape recorder.

“What’s that?”

“May I tape our conversation?”

“If you tape it, I don’t want to be interviewed.”

I put the tape recorder back in my briefcase. I interviewed him. He was very guarded. “You know, Muller was a controversial person, especially in his politics. Don’t put anything about that in your biography. It will hurt Texas.” He kept his conversation clear of the politics and talked about Muller the scientist and his relationship with Muller in the 1920s and how much he admired his work as a geneticist. Muller had sent a telegram from Moscow congratulating him when he was elected to the National Academy of Sciences.

Even Altenburg refused to talk if the tape recorder was on and I decided to abandon its use. Instead I worked at furiously rapid notetaking while talking with my subjects and as soon as the interview was done, I would hurry back to the hotel room, turn on my tape recorder and dictate into it before my memory decayed. Altenburg told me that he and Muller were very close. He said this in an almost uncomfortable way. “We knew each other inside and out.” Altenburg adored Muller. He worshipped him in high school, and they were active in their research and social lives throughout their years together. In 1915 their paths began to separate as Muller elected to go to Rice at Julian Huxley’s invitation. They came together when they went to the USSR in 1922. After that they saw each other sporadically as opportunity arose, and especially at meetings. Later in life they arranged to

meet each other at their home and bring their families with them. When they were not able to see each other, they corresponded.

I learned years later from Muller's daughter that not all of the correspondence was saved. Thea had burned some. I am amazed that Muller's note for his attempted suicide in 1932 was not among them. Most of those letters that were destroyed involved Muller's efforts on behalf of the Communist Party at Texas when he was being followed by the FBI for serving as a recruiter for the National Student League and as an ex officio editor of an underground newspaper named for Lenin's *Iskra* [*The Spark*]. There were additional burnings I learned about from Thea. When Muller was called to testify before the House Un-American Activities Committee, Muller and his wife went through their correspondence and pamphlets and chucked these into the fireplace if they mentioned anything about Communist friends or his involvement in *The Spark* affair.

After I went through my American interviews with the old timers, I noted that four of them died within six months of my interviewing them. I felt like Typhoid Mary, and I was worrying that people would shun having an interview with Carlson, the Grim Reaper. I reassured myself that I was interviewing people Muller's age and if he was in frail health at 77, I shouldn't be surprised that his contemporaries were also falling apart.

I used the money I had won from my Danforth Foundation Harbison Award to subsidize a trip to Europe. I went first to London to interview Julian Huxley and his wife. It was a bit like a Mad Hatter's tea party and I had been tipped off by Muller's student, Guido Pontecorvo, that Huxley's recollections would be seriously impaired. Huxley kept telling me "Why are you asking me? It's all in my book. It's all in my book." He had just finished the first volume of his memoirs. He then bawled me out for eyeing the various pots of jam served with the tea. "Eat one or the other, not both, that's vulgar." He then broke into a long argument with his wife on whether the honey was real or synthetic.

I had a more successful interview with Charlotte Auerbach, Muller's post-doctoral student, in Edinburgh. I had checked into the Castle Hotel and looked at a small, printed map of the city they had at their front desk. I took

it with me and estimated that the University was about nine blocks away. I thought I'd walk it. This was February in a curiously bone chilling climate that wasn't freezing but felt worse than freezing because it was cold, wet, sleety, and just plain nasty. I didn't realize that only the main thoroughfares were on the street guide, and they were about five to ten streets apart. It took me a long time to get to the University and when I did my feet were nearly numb and my cheeks felt like a leather catcher's mitt. I apologized profusely to Auerbach for being late and explained that I had walked from the hotel. "You walked! Americans don't walk. How splendid. We shall have to go on a walking tour later this afternoon." That evening when I got back to my hotel, I felt like Peary a few hundred feet from the Pole.

The interviews were useful in providing personal views of Muller I could not get elsewhere, and they cross checked each other. I could learn this way what were likely events and personality characteristics in his younger years that I could not verify by other means.

The strangest interview I had was with Willard Libby at UCLA. He had received a Nobel Prize for radiocarbon dating, a technique widely used in anthropology and the arts to date organic objects (wood, cloth, murals, bones) of the Ice Age to the present. Libby was hostile but spoke his mind. He had been a Commissioner of the Atomic Energy Commission and I had learned from someone else I interviewed that he was the one who had Muller banned as a US representative to the Atoms for Peace Conference in Geneva in 1955. Libby condemned Muller as "...a son of a bitch who corrupted the students at Texas with his Communism." He thought Muller was a double agent, sent back from the USSR to sabotage our hydrogen bomb program. "He was like that other traitor, Oppenheimer."

Every summer for seven years I went back to Indiana University and classified Muller's correspondence and filled out hundreds of 5 x 8 cards with my notes. I worked in a vault in the Lilly Library and enjoyed this solitude, immersing myself in the 30,000 letters Muller had written and marveling at how much went back and forth through the mails in the days before inexpensive telephone calls and the availability of private phones in the offices of university professors. While there I would walk from my

hotel to Mrs. Muller's house and fix us steaks or enjoy the dinners she prepared, and we would discuss what I had read and she would fill me in on the background that made sense of names and activities that I could not connect to my own knowledge.

Thea made me omit events that involved her. I could not talk about her having been diagnosed with tuberculosis in Edinburgh in 1940, shortly before they were to leave for the United States (she was not a citizen and in fact was a refugee from Nazi Germany, her father being Jewish and the former Dean of the Dental School at Bonn until he was fired by Hitler). At that time the US immigration law prevented the immigration of those who had tuberculosis. Thea was a physician, so she used a photograph of her lungs that was taken before she had tuberculosis. She felt that if this were known through my biography she could be deported. She felt that there was a paranoia in all government police agencies that she had experienced firsthand in Germany, Muller had experienced in the USSR and Edinburgh (Pontecorvo had been put in a concentration camp with Italian Fascists when the war began although his passport was stamped, "Victim of Fascist oppression.") She said if the FBI did not like what I wrote about Muller they could take it out on her, and she could be deported. She also bawled me out when I tried to get Muller's papers through the Freedom of Information Act.

I considered the events I left out minor and I tried to imply things by innuendo in the biography without spelling things out. While some authors may put the integrity of the book first, I felt that there are realms of privacy that should be respected. Almost all of Muller's "NoK's" on his letters to Altenburg referred to Altenburg's own illnesses. I was not prepared to sacrifice the friendship and confidence of people I respected if they asked me not to include such material.

I spent several years trying to get the book published. Indiana was originally excited about having it and then it was shot down. I think Sonneborn was unhappy with it. He had a protective attitude about science. He felt that scientific "dirty linen" was inappropriate for the public to know. When Watson's *Double Helix* was published Sonneborn was furious and

horrified at what he considered a betrayal of science. He would not even allow an innocent letter of Watson's, when he applied to Indiana University as an undergraduate from the University of Chicago, to be put on display for an exhibit of "Genetics at IU."

I owe to my colleague and friend, Abe Krikorian the recommendation of Cornell University press who did a superb job editing and producing the book. Abe also helped me when I was telling him I had a devil of a time coming up with a good title for the biography.

"What's it about?" he asked as we walked to his car in the engineering parking lot.

"Genes, Radiation, and Society."

"Why don't you call it that?"

I did.

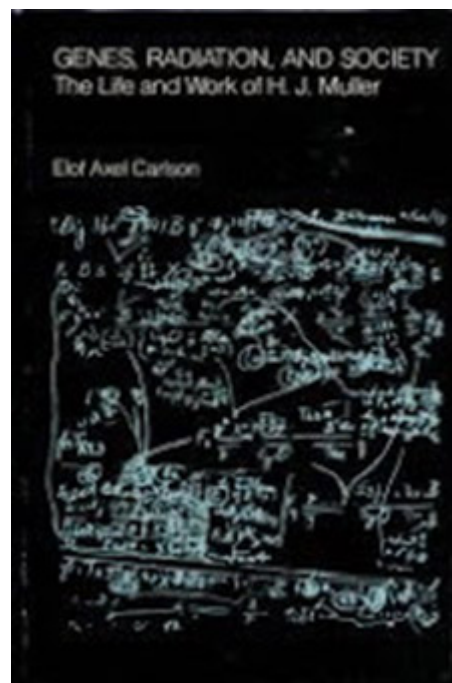


Figure 51-1

Genes, Radiation, and Society: The Life and Work of H. J. Muller took seven summers of reading at the Lilly Library to go through Muller's correspondence and papers. I felt I did justice to Muller's complex personality and the work he did over some 370 publications.



H. J. Muller

Figure 51-2

I also wrote a biographical memoir of Muller for the National Academy of Sciences. This is the portrait and signature they used for the article.

CHAPTER 52

REAGAN EXILE

There is usually no one reason why people leave a job and go elsewhere. There is usually a sense of adventure when a new job prospect comes along. There is a feeling of frustration with any institution because none are nor can be perfect and if the irritations are significant then loyalty to it begins to wane. There is enough insecurity in us to make us wonder what would have happened if we had chosen another path. I would add to that my own personality. I don't have itchy feet. I am a stick in the mud, domesticated husband, who likes the comfort of a home and a neighborhood. I am also a Faustian individual. I crave the novelty of new ventures. It may be my father's sea faring that beckons me on. It may be my mother's history of just walking out the house on Sheffield Avenue in Brooklyn one day and showing up five days later in Long Beach, California without advance notice and telling her daughter, "I'm here."

The idea began to percolate when I got my ulcer as a dean. I was also frustrated trying to teach my non-major's course at UCLA. Los Angeles was also making me too comfortable. I felt like Odysseus charmed by Circe and wallowing in the warmth of a never-ending summer. I wasn't bored. I can't think of a time in my life when I ever felt bored. I fill the days and weeks with new and old projects to do. Life is so full of wonders for me that I am constantly finding ways to do as many as I can.

As I reflect on my years at UCLA, they were very productive. I was happy to see six students get their PhDs with me. I was happy to have made some good contributions to my field of genetics. I was rewarded for my publications and for my teaching and service with an accelerated promotion to tenure. While I found my relations with my colleague Richard Siegel

sometimes bruising because we disagreed on what and when to teach, I had learned how to survive without being damaged by those conflicts. I had also become the confidant for his unhappy students. I liked my colleagues in the Zoology Department and had made many pleasurable associations with colleagues in other departments.

Franklin Murphy was the Chancellor. He came from Kansas the same year that I came from Ontario. He gave UCLA its name and its image. When he arrived the university telephone operators still said "University of California, Southern campus." He told them to say "UCLA". He went through the Administration Building and pulled down all the hand written and crudely painted signs. He ordered them printed. "If you're going to be a major university," he told his staff, "you have to begin acting like one." He made sure the campus looked like we cared about it. If a trench for a pipe was cut, he made sure it was resodded the next day. He did not want the scars of construction work to fester for months and dampen the morale of the faculty and students. I admired Murphy. He enjoyed building UCLA. We both saw the same thing happening when Clark Kerr was fired as President and politics swamped campus decision-making on the fate of its programs. He was as solid a Republican as you can get (he was from Kansas!) but he owed his loyalty to the institution, not to a political party. He resigned. He wrote to the Regents, " I don't want to preside over the liquidation of what I built up."

Those were my sentiments and I had independently come to the same conclusions as Murphy. I saw UCLA as headed for eight years of hard times with a conflict between the University and Governor Reagan. There would be lots of turmoil on campus and as a person respected by students and faculty, I would be stuck on emergency committees to handle all this political strife. Was that what I wanted to do for the next eight years? I felt my time would be better spent developing a non-major's course. At UCLA the future of that course was in doubt.

I had received word while still at Woods Hole about the non-major's course I had long wanted to teach after the searing events of 1963-1965. Fred Crescitelli wrote me a note that the Academic Senate had approved my

course proposal and made it a requirement for incoming students. I would begin teaching it in the Fall 1965 semester. We arrived back from our sabbatical in mid-August. This would give me about two weeks to shift my focus from my book on the gene to the new course I would teach. I walked confidently into the Zoology Department office and asked for the enrollment. "So far we have about 2,000 signed up." My face was frozen in disbelief and shock. "We don't have a lecture hall that big. Where will I teach it?" I explored the auditorium but that wasn't permissible. It could not be used for classes. I called the Fox movie theater in Westwood. That was too expensive. I was told to put it on television or give the lecture four times a day, dividing the class into sections of 500. Royce Hall auditorium was then the largest lecture hall on campus.

I had no experience working with TV. This was 1965. It was still shown in black and white. It was videotaped with a thick tape that could not be edited. If you messed up, you started over. I arranged for my brother Roland to draw the illustrations and I met my crew. There was the director who sat up in a booth and I could not see him. There was the camera operator. When the camera was on, the small light above the lens was green. When it was off, the light was red. I had a swivel stand on which "the visuals" were placed by someone out of camera range and she turned it. I was given a metal pointer. "Too bright," they said. They covered it with black electric tape. I was "the talent" and as the talent, I was made up with lots of powder ("we don't allow glare from the nose or forehead") and they used a brush that reeked of old sweat. Welcome to the theatrical life.

It was awful. I had no feedback except for the glowing green dot to which I spoke. I went to the class rooms where my video was showing. I felt uncomfortable but didn't quite know why. About two weeks later, I was watching as I drew with chalk the name of LEEUWENHOEK, the linen draper in Amsterdam who introduced microscopy to the world of Samuel Pepys and his fellow members of the Royal Society. The horizontal hold failed, and all the receiving TV units looked like a chain saw jittering about. One student flung his chalk at the screen. I began to see the problem.

TV is an action medium and in its professional form it works reasonably well. A lot of good quality editing goes into it and scenes are rarely continued for more than 15 seconds. Amateur TV is full of boring head shots and poor-quality acting. Students raised on professional TV become restless when they are offered poor quality TV. It's like listening to a junior high school orchestra play classical music; the notes are blurred into a humming dissonance.

I later saw this two years later when the new color TV and spliceable tape came into the field. I was asked to participate in a conference at Lake Arrowhead by CBS which was doing its 21st Century series on science. I met Judy Towers (now Reemtsa) who was an assistant producer for Burton Benjamin. They taped three days of a Labor Day weekend and there were a lot of good persons on that panel, including Jonas Salk, in a program that Rod Gorney put together. I learned later that about 100 hours or more of tape were gathered from interviews around the world. These were trimmed to 40 hours by Towers and to 4 hours by Benjamin. Walter Cronkite trimmed the last four hours to 30 minutes. Not a second of the Lake Arrowhead conference was included. "We didn't like the color," Judy said.

I got through the course and kept one lecture ahead of my students all year long. The results were mixed. Students did as well on the examinations as those in classes a year before where I taught a live class. What they wrote, however, was a deep hatred for educational TV which they felt alienating. They wanted a human presence in the classroom, not eight look-alike screens with a cloned professor teaching them.

Even later, I found this attitude carried over to professional TV. I was once evaluating the program in general science created by Milsaps College in Jackson, Mississippi. It was a wonderfully planned program, and I audited some course lectures and spoke to the faculty and students. They were enthusiastic about the lectures and laboratories but there was one component the students hated. Once a week there was a showing of Bronowski's *The Ascent of Man*, a program I thought brilliant. The students did not like staring at TV in a class room setting. They wanted a human presence.

As my ulcer healed, I thought about the coming years at UCLA. I felt trapped. At best I could try to avoid the political turmoil coming but my students would probably force me into the fray. I was browsing through a TIME magazine article on education, and I saw the name Bentley Glass. He had worked as Muller's student some 30 years before I did, and I knew him well. He was now Vice President of a new state school in Stony Brook, NY. I had never heard of it. It described its ambition to "become the Berkeley of the East," and its adventurous efforts to plant a major university on a Long Island potato field. I sent him a letter and told him that I wanted to devote my career to developing undergraduate education which I considered seriously deficient in the research university. I specifically told him that I did not want to continue a conventional career of educating graduate students and seeking federal grants.



Figure 52-1

H. Bentley Glass was Vice President of Stony Brook University and he invited me to join the faculty. He got his PhD with Muller about the time I was born.

Shortly after I sent my letter to Glass, I got two unsolicited invitations to look at places seeking an administrator. One was the University of Alberta (back to Canada) and the other was at the University of Toledo in Ohio. I went to both places. I flew to Edmonton. It was March and the snows were still abundant, and the ice caked the river. I would be Head of the Department of Genetics. "We do not want a Chair," I was told. A Chair sits; a Head thinks." The faculty were solid, but most were well into their careers and still had a long time to retire. They were the traditional animal and plant

geneticists of the 1940s. There was a split. A few favored molecularizing the department and others feared this would be their ruin. It looked ulcerous. They took me to dinner at their best hotel and alas, it was like a frontier bar, with a sultry singer and an over loud band. They offered me the job. I turned it down.

I was surprised to have been asked by Toledo to be a candidate for their Dean of Arts and Sciences. I had applied in 1957 for a job there when Muller told me it was available. I had gone to them then and the interview went superbly well. I was uneasy about the school, however, because its pride and joy was a commercial glass company that had put a lot of money into the university, and I got the feeling that what they wanted they got. I also felt vaguely uncomfortable about their parochialism. I decided to test it. When I was at the luncheon it was clear they were favorably impressed, and they were singing my praises and how I was just the person they wanted. The Dean asked me, when I was introduced around the table to the assorted administrators and senior faculty, “By the way what are you?” He meant of course, what type of Scandinavian was I – Swedish, Norwegian, or Danish. I replied, “My father was a Swedish Lutheran; my mother was a Ukrainian-American Jew.” Silence fell. That afternoon I was palmed off to a graduate student to visit the glassworks and they went into a huddle. When I was getting ready to go, I asked them what I would be teaching. Clearly the Dean went over my undergraduate and graduate transcript and he had seen my grades. “We’ll need a course in physiology. You also can teach in the comparative anatomy course. Your genetics hasn’t been determined. We also have to weigh your candidacy against other needs of our department. We’ll let you know in about a week or two.” I was much amused. I had heard that anti-Semitism ran deep in parts of the Midwest. No one in Muller’s laboratory was surprised.

A lot changes in ten years and much of the old guard at Toledo was gone along with their biases. But I was really interested in Stony Brook. In April I went to the Genetics meetings in Texas. Muller died while I was there, and we sent a telegram to his wife and family. I spoke to Frank Erk who was asked by Bentley Glass to see if I was a serious candidate. I told Frank that

I was and that he could let Bentley know my genuine interest. He said he would arrange an interview as soon after the meetings as he could

Two weeks later I flew to New York and was met at the airport by Frank Erk. He put me up at university-owned estate called Sunwood. I had a good visit and returned to UCLA with hopes that Stony Brook would come through. I waited quite a bit. By the end of May I made an inquiry and was told that I had been appointed but that paper work in New York State takes a long time. I wrote back my enthusiastic acceptance and mentioned my desire to begin working on my teaching. I was invited for a second look at the campus. This time I stayed at a motel in Port Jefferson and in the morning, I took the cab to the campus to be greeted by a picket line. Stony Brook was on strike. To my great guilt, I crossed it. It was one of many strikes that occurred on the campus and the dispute wasn't even over money. A student radical had insulted the laborers in a dispute over the Vietnam War.

I was amazed at the attitude of my colleagues. I was treated like a *deus ex machina* because I agreed instantly to take over their much-hated introductory biology course. I told them I would make recommendations on how to make it work and that I would teach the entire year. They wouldn't have to teach a single lecture or laboratory for it. I asked for a small laboratory to do fruit fly research that I would limit to undergraduate students. I made no request for startup funds. I had asked for a promotion to full professor (I knew how the world works) and Bentley Glass approved that request. I don't know of many persons promoted to a full professorship with the request that that they wanted to develop innovative teaching at a research university. I greatly appreciated Bentley's faith and I wanted to repay him with the only thing that matters in academic life – success.

I submitted my resignation and filled out my lame duck year at UCLA. I spent most of the time making sure my remaining students completed their dissertations. All did except for Dale Grace and I told him to come out to Stony Brook and we'd do the fine tuning of his dissertation if he wasn't done by the summer of 1968. We put up our house for sale and we had no problems getting it sold. The money from that sale would pay off our

mortgage and most of the down payment for a new house in Setauket. Our summer would be in Indiana. The real seasons would begin again in Stony Brook.

CHAPTER 53

STONY BROOK: GROWING PAINS OF THE FIRST DECADE

During the spring and summer of 1968, I made two trips to buy a house. I worked with a lawyer who was very helpful, and we secured a mortgage and made the arrangements for the movers to bring our stuff. I thought I'd have Roland help me and we drove from Rochester, Indiana to Setauket, New York. Our house was 19 Mud Road. The owner, the former Dean, Stanley Ross, had moved on to Texas. It was called the Ross house. All the old timers called it that and for the first ten years that's how we gave directions. The movers were delayed by a week, so I called Nedra every day to let her know we still had no furniture. Roland and I slept on the floor.

After we settled in, I began exploring the university. There was first the mud of the construction. Buildings were going up all over. The administration was adjacent to a fenced in area on which the Fine Arts Plaza would someday be built. There were about 100 murals painted by students. It was their version of the Berlin Wall, mostly with antiwar sentiments which did not endear them to the union construction workers who protected the flag, patriotism, and the armed services. My lab was on the third floor of the old biology building (presently the student activity center). I set it up with Billie's help and we began getting our fly stocks going. I still had a year's funding from the National Science Foundation which I intended to spend so Billie could have a year in which to get relocated. Dale Grace was also planning to join me while he was in the dissertation writing phase.

Stony Brook was then a pioneering school. Faculty could do what they want with virtually no bureaucracy to slow it down. Everything was new and no one had an established way of doing things. If you had an idea, try it. It was exactly what I hoped it would be. I had a great idea. I was going to launch a non-majors course that I felt would be original, exciting, and what every citizen needed. I started teaching it immediately when the school semester began. I was pleased at the good response as students began to flock to see me and tell me that they enjoyed the class. I found the contrast of Stony Brook and UCLA very pleasing. Almost all my UCLA students were secure middle-class students whose parents had gone to college, many of them on the GI Bill as the War ended and people flocked to California. They dressed smartly. With a balmy weather all year round, students could always take off for the beach if they got bored or frustrated. Stony Brook students were mostly first-generation college students. They had a lower class or low middle class upbringing with neither parent college educated. At the time, Stony Brook was known as the science school among the colleges in New York State. It was built between Brookhaven National Laboratory and the Cold Spring Harbor Laboratory. Its President, John Toll, was a distinguished physicist. Its vice President, Bentley Glass, was a distinguished geneticist. John Toll's mission was to build the campus from the top down. He had ambitious plans for a medical school and lots of federal money to help the state build graduate chemistry, earth and space science, and physics buildings. Top faculty in these areas would be recruited and after they settled in, younger hot shots could be added. Undergraduate teaching was left up for grabs. That would come later.

A year after I came the new lecture center was opened. I had previously taught in the lecture hall of the old biology building, an already deteriorating structure. The new lecture hall was modernistic, not another of the rectangular faceless brick cheese boxes stuck in a row. It had no right angles. It had no windows. It looked like Lenin's tomb. There was an expanse of dirt around it. The rains came. I went to an evening lecture and I saw a student in her 30s wearing black calf length boots. Suddenly one of her legs went a foot or more into a mud hole. She pulled out her stocking

foot. Her boot was sucked into the mud. For a long time that symbolized the first ten years.

While the pioneering years were great for academic innovation, they were horrible for the quality of life that students, faculty, and staff experienced. The argument of the administration was rational. This is what happens when you plan to build a major university on a 1000 acre campus and you have plans to erect about 100 buildings in ten years or less. You don't have time for neatness. Mud goes with pioneering. But it was more than mud. It was neglect.

Stony Brook students suddenly discovered that no one cared about them. At least that was their perception. The campus was stuck in an isolated part of Long Island next to a quaint bed-room village. Originally the land was given to the State by millionaire Ward Melville, who owned Thom McCann shoes. He had hoped it would lead to a nice teaching college with colonial style architecture. Instead Governor Rockefeller built himself a monument with State money. He wanted a great university, and he had a state commission to back him up. New York had been in the backwaters of higher education for its less than upper class citizens. The private schools felt threatened by having a state university system compete. The great land-grant universities of the Midwest were built in the 1860s and served their citizens well. New York City had its City College which also served its impoverished but bright citizens. Rockefeller provided the momentum for a state university system that would rival that of Michigan or California.

This created an instant town-gown conflict. The residents of Stony Brook were not happy with the thought of rowdiness, noise, litter, and traffic congestion that a large university would bring. They feared devaluation of their property if the students were the lower middle class or blue-collar children who would dress like slobs and give the neighborhood a shabby reputation. This part of Long Island was solid Republican and conservative. It had no interest in setting up a poisonous enclave of liberalism among the faculty who would swamp the surroundings. I saw the conflict in action. Just before I arrived to plan my course in the Spring of 1968, there was a raid during finals week and 17 freshmen were led off in

handcuffs for having smoked pot or at least for being at a party where pot was smoked. One faculty member fled the country for Majorca and waited out the statute of limitations before returning to his job. The police had confiscated his diary which named the students who were at a pot party. The DA had a tremendous victory that cheered the townspeople. The front-page news went across the country. Stony Brook became the drug school. It didn't matter that there were no more drugs at Stony Brook than on any other campus. Image is everything when a school falls victim to a bad press. The guidance counselors told the students, keep away. Parents used to call me up and say they went to high school with me, and couldn't I help get their daughter into Stony Brook where even a 90 high school average was marginal. No more. The admissions standards plummeted. The good students went elsewhere.

The damage was made worse a few years later. The priority of the administration was still erecting buildings and they were stuck with all those commitments and little flexibility to address student life issues. President John Toll had a laissez faire policy. Do what you want as long as you don't ask for money. The students did. They got very creative. They purchased a water bed with the modest funds they had for their dormitory activities, and they put it into one of the dormitory rooms and rented it out on weekends. Someone leaked the news to the press. Suddenly we had another reputation going around the world on an AP dispatch. Students at Stony Brook use water bed for sex on weekends! Stony Brook now became the drug and sex school. Reality is very different. Most students were no more deflowered at Stony Brook than at any other major university.

Those are the penalties for neglect. An administration that cared about its undergraduates would have given students more activities, more structured use of week end time, more indoor or outdoor recreational facilities. It would have set some money aside to build this even if it wasn't going for mega-stadiums and highly competitive sports. As my popularity grew with the students, I heard a lot of horror stories from them about life on campus. I was soon asked to chair the Student Life Committee of the University Senate. We opened up our meetings to hear complaints and I asked the President of the Student Polity and the Vice President for Student

Affairs to attend as members of the Committee. My favorite case was a sophomore who was a premedical student. His dormitory was terribly noisy because in those days the legal drinking age was 18 and students, clever as can be, came up with the idea that since no one cared they should have a bar in each dormitory. This led to noise, vandalism, fights, and incipient alcoholism among some of the students. This premedical student found his room too close to the bar to study. He went to the library. The library would close about midnight. Premeds frequently pull “all-nighters” to study for the biggies – calculus, chemistry, organic chemistry, physics. He hid in the library and after everyone left, he chose a carrel and turned on the lights and studied. Suddenly we was pounced on by security and arrested for trespassing. His punishment was to wash graffiti off walls in the bathroom. Instead he went directly to *Newsday* and gave them a great headline: STUDENT ARRESTED FOR STUDYING. Once again neglect leads to a publicity black eye for the pioneering school trying to be the Berkeley of the East. Great, come to mud-splattered Stony Brook --we drink, we fornicate, and we punish students for studying!

I had him testify to our committee and we came up with a proposal to convert the old map room of the library into a 24-hour study lounge for students. It wasn't enough for our student. He transferred to Emory University in Atlanta. We also had a new symbol to replace or supplement mud as the symbol of Stony Brook. The student union building was under construction. The original plans were for a bridge to join the addition to the old library. The old library would have a huge shell of corridors, offices, and library space built around the inner core. A lighted bridge would serve as a walkway from the library to that outer expansion. Unfortunately the bridge ended blindly waiting for the addition to be completed and when it was completed the floor didn't level with the bridge so instead of a bridge connecting to the library it dead-ended with a wall. It became “The Bridge to Nowhere.” It was worn on tee shirts and it was the subject of many a lament and editorial of life at Stony Brook.

During those formative years, I had to work hard to prove myself. I learned that Frank Erk was ousted because I was hired. Most of the faculty felt they would have been better served with one or two young hot shots to

build a graduate program. I may have been a deus ex machina in taking over a hated course and making it a success, but no one thought that would be a good trade. I proved them wrong. As my course went from 150 to 300 to 600 students and became the most popular and talked about course on campus, the Department of Biology found itself the beneficiary of an academic bookkeeping rule called the FTE or full time equivalent. A department's budget is determined, in part, by the number of students it attracts to its courses. Suddenly the Biology Department was getting generous sums of money to hire more faculty because it was overloaded with students. Many of the students in my classes were so turned on by biology that they decided to become biology majors. At worst I was an aphid in an ant's nest, feeding my colleagues with generous blobs of nectar. At best I was an asset who generated a bumper crop of new faculty for our department. At the end of a decade I felt appreciated and my biology 101-102 course had become a campus institution.

CHAPTER 54

STONY BROOK: THE 1980s AND 1990s

Universities can be classified conventionally by decades as we do our national history, or they can be classified by administrations. My thirty years at Stony Brook roughly coincide with both organizations. The 1970s were the John Toll years; the 1980s the John Marburger years, and the 1990s the Shirley Strum Kenney years. Each administration differs in its emphasis, and this can be both beneficial and damaging to an institution. Each administration likes to clean house and reorganize things. This too works both ways. It forces faculty to think about the purposes of college education and a professorial career.

If I had to characterize what stands out most in the thirty years of changing administrations, it would be the curious obsession each administration has had with the school's name and logo. We have been the State University College on Long Island, State University of New York at Stony Brook, the University at Stony Brook, and Stony Brook University. We have been SUCOLI, SUNYSB, USB, AND SBU. We have been Stony Brook, Stonybrook, and I have even seen misspelled stationary with Stoney Brook. We have had a logo with wiggles and round circles representing water around rocks (or to my biologist's eye, spirochetes in a blood sample). We have had a tree of knowledge and we have had three spheres with rays and stars. I have not quite figured out the last one. I presume the three globes are either the arts, the humanities, and the sciences or the schools of medicine, engineering, and arts and science. In its first incarnation the first globe generated seven rays, three passing through one of the Os in Stony Brook and four through the other. I thought this was a real scholar; he's using the trivium and quadrivium of the liberal arts. But

the logo is evolving and now the rays vary in number so there may never have been such an intent originally. Some of my colleagues see the three spheres as the Medician pawn brokers' symbol. I see it as a reincarnation of the Rosicrucian ads I used to see in the Magazine section of the *New York Times* in the 1940s and 1950s. Another foray into logo madness was the construction of lighted plastic signs that were dubbed by the students as "McUniversity" signs because of their resemblance to fast food restaurant signs. Half the faculty said it looked like McDonalds and the other half favored Kentucky Fried Chicken.

If there is the military training school equivalent for administrators, one of the lessons they must be taught is the importance of designing a new logo for the new administration. It's too bad the administrators don't listen to the faculty about such symbolic obsession. The faculty see the logos as a substitute for substantial changes. They keep hoping the things that bother them and the students will be addressed. High on the faculty and student wish lists are an attractive campus, an administration that makes red tape less onerous and time consuming, and funds to support the teaching programs for undergraduates.

John Toll built the campus from a small teacher's college with utilitarian brick two story rectangular buildings and dormitories to a major university with impressive faculties in the sciences and the beginnings of outstanding humanities and social science faculty. He used the top-down method, of bringing in senior faculty to set the tone for a research university. John Marburger, also a physicist, continued the research tradition. He fleshed out the building program with a major art and music center and the rapid expansion of the Health Science Center into one of the most impressive medical facilities and medical schools in the country. Shirley Kenny's contribution has been the completion of a student activity center and the construction of an Asian center that includes a library, lounges, oriental garden, and offices for visiting scholars as well as Asian food restaurants.



Figure 54-1

The Health Science Center at the Stony Brook University campus. Life sciences faced the hospital on the west side of Nicolls Road.

To the degree that it is possible both students and faculty try to ignore their administrations and do the things they consider central to their lives. For the students it is going to classes, studying, and socializing. For the faculty it is doing research and teaching. The ideal administration for both is the one that is not noticed. Noticing an administration means it creates or ignores problems that interfere with the primary objectives of a university. There cannot be, of course, a perfect university administration any more than we can be content with our entire faculty or all our students. Diversity guarantees discontents.

Of the three administrations, I felt most comfortable under Marburger's. Toll did a magnificent job attracting faculty and getting buildings up in a hurry, but his neglect of undergraduates led to a lasting damage to the reputation of Stony Brook as a school parents would want to send their children. Kenny's administration was one of public relations and failed efforts to improve the quality of undergraduate life. Her strength has been sprucing up the campus. It is noticeably more attractive, and she made an effort to think of students in the design of the campus mall and other areas on campus for students to sit outdoors and enjoy sturdy and attractive lawn furniture. She also practiced a policy of ignoring criticism rather than responding to it. Perhaps this reflected her non-confrontational personality. Ignoring problems does not make them go away and it led to an escalating criticism in the student papers and among faculty hallway conversations.

For me the 1970s were immensely stimulating. Students took charge of their lives during the Viet Nam war and the Civil Rights movement. Most of our innovative educational ventures were born during those years. In the 1980s the conservative values of Long Island and the nation took over. Radical voices became muted, and students were focused on their private careers. School spirit was absent or low and the prevailing philosophy on campus was utilitarian. It was also the last generation spawned by the restrictive Johnson immigration act of 1924. The great wave of immigrants and first-generation American students had not yet come to campus. In the 1990s that new America is changing the campus in the ways that America must have been changed by the European immigrations of the 1890s to 1920. It is a different utilitarian outlook, not one of turning away from the idealism of the 1960s and early 1970s in an effort to focus on the self and the amassing of wealth to fulfill it, but a looking forward to a new America and the opportunity to find a self in the new world that is populated by students at Stony Brook from Asia, Africa, the Middle East, Latin America, the Caribbean, and the Pacific islands.

Throughout those thirty years I have taught my biology 101-102 course. Whatever may change on a national scale and at the level of a college administration, does not alter our need to know about the biology of the human condition. Politics does not alter the underlying reality of gene

mutations, birth defects, infertility, premature illness and vulnerability of the life cycle.

It was a struggle during the early years when Biology separated out into two specialized departments and one “comparative” biology department that limped along with a low budget. After that department ceased to exist, I found myself welcomed in a Biochemistry department that supported my teaching needs. No Stony Brook administration, however, has ever seriously considered how to budget or support interdisciplinary programs. These are the future of higher education. They lead to new departments. They are powerful instruments for faculty development. They stimulate new scholarship. They build academic communities. They force students to see or construct connections among different fields of knowledge. They are incredibly cheap to run compared to any individual research program on campus. Despite all these virtues, they are not supported, and administrators are either too traditional in their thinking or too timid to ask for even that modest amount of support to initiate and support these programs.

Misplaced values abound in administrations that ignore undergraduate needs. Stony Brook spent hundreds of thousands of dollars in underused audiovisual equipment, but faculty had to buy their own chalk, pens for overhead projectors, and even the plastic sheets for those overhead projectors. I once walked with several Honors College students through the “catacombs” of our underground passageways for the pipes of our university. As we emerged towards the administration building, I encountered hundreds of cardboard boxes filled with outdated and unused forms, brochures, catalogs, and other items printed far in excess of need or properly planned but replaced by the need for a new logo or other administrative change. I suspect our traditional focus on military waste would find an equal spending of funds on these unrealized efforts. Perhaps waste is inevitable in large institutions. For faculty asked to do more belt tightening by administrations that cry poor almost every year, it is depressing.

Despite these frustrations, faculty and students manage to accomplish their primary goals. Our better students get an excellent education and

appreciate the talent on the campus. They learn to pick good teachers and worthwhile courses. The university is so large that any highly motivated student can find a first-class education. The students who suffer are those who are shy and who do not know that they can be assertive and talk to their professors. They will be ignored, and many will transfer to other schools or drop out or cheat themselves of more demanding courses and intellectual stimulation. Our best faculty will enjoy scholarship in all its forms – in the library, in the laboratory, and in the classroom. Those who are not blessed with that drive to do well will trim their expectations. Some will ignore their teaching, some will scale down their research, and a few will become academic deadwood. The best institutions foster and maintain excellence by working at it. The worst institutions allow discontents to build to monumental proportions. Indiana, UCLA, Stony Brook, Utah, and Minnesota all fit between these extremes. The most effective college Presidents I have encountered in my academic life were Herman Wells at Indiana University and Franklin Murphy at UCLA. Both knew excellence, wanted it, and raised the money to pay for it.



Figure 54-2

Formal picture for publicity use at Stony Brook University, taken about 2000.

CHAPTER 55

NECKTIES

My earliest recollection of wearing a necktie was in elementary school. Boys wore a necktie with a white shirt. Girls wore middie blouses with a thin scarf. The middie blouse looked like a nineteenth century sailor's shirt. This continued until WWII when the middie blouse went out of fashion, but boys continued wearing ties through high school. The term middie blouse had its origin as a shortening of the term midshipman's blouse. My father showed me how to turn the tie to form a knot, which for most boys was called a half Windsor knot. It was not too difficult, and it didn't bulge, the way a full Windsor did. Nor did it make the tie too short.

When I went to high school my ties shifted from boring solid colors (usually black or blue) or stripes to what were called loud ties. These I got from my uncle, Charles Vogel. My mother would occasionally take Roland and me to visit Uncle Peter, who practiced his ear, nose, throat medicine in the Bronx or Uncle Charlie who lived in Brooklyn. For Uncle Peter it was always at his medical office and Roland and I would sit in the waiting room while our mother would go in to beg a few dollars from him. That ended with World War II when the war began, and Uncle Peter moved with his family to Palo Alto and military service in a veteran's hospital. We met Uncle Charlie in his home in Brooklyn and we would play with his children, one our age and the other a toddler. When I was in high school Uncle Charlie gave a bunch of neckties to my mother so I could use them in school. He sold men's clothing door-to-door. My mother said he sold to gangsters. I never knew when my mother's stories were real or fantasies of her schizoid world, but it was confirmed for me when I was 83 years old, and my daughter Christina explored our family history and tried to trace my

missing Vogel relatives. When my mother married out of faith, most of her family shunned her. This was why Uncle Peter and Uncle Charlie were the only ones of my mother's generation of siblings that I knew while growing up. His granddaughter, Sharon, sent me an interview she typed up in 1985 describing Charlie's Vogel's life. He indeed had some distinguished clients, including Al Capone, Gaetano (Tommy) Lucchese, Charles (Lucky) Luciano, Paul Castellano, and Albert Anastasia. Uncle Charles claimed he only sold high quality clothing to crime bosses and union leaders and kept his mouth shut on stories they told him. He was called to the DA's office in New York during the 1950s when there was a crackdown on organized crime but was let go after testifying that he only knew these men as clients for his clothing sales.

The ties I got from Uncle Charlie were the four-inch width ties. They had designs that mixed Picasso-like abstract art with art deco motifs. I enjoyed wearing them to Thomas Jefferson High School and don't recall anyone teasing me about them, perhaps because such ties were fashionable in the late 1940s. I wore them when I went to NYU and began buying ties that stood out to distinguish my identity from those of white-collar workers filling the offices and shops of New York. The only time I wore boring ties was in my summer job as an elevator operator, where all the operators wore a black or brown tie that went with the gray or taupe uniform we wore.



Figure 55-1

My Uncle Charles, his wife Lilly, and sons Robert (first row) and Lawrence (back) ca 1944.

I shifted for about a year, when I first went to UCLA, and wore clip-on bowties. I did that out of laziness and thought it saved me time when I dressed for work. The bow tie was cooler to wear in the hot Los Angeles climate. But as I got used to desert-like weather I shifted back to my loud neckties, especially when Nedra began making ties from fabrics she would select for her quilting and sewing projects. I would get about four or five each birthday and each Christmas. When I went to Stony Brook, I became known for my unusual ties among the students in my class. One student told me that he and several other students had bets on how many ties I had, and they were counting to see if I would repeat any.



Figure 55-2

At Thomas Jefferson High School, Brooklyn, NY, 1949. I am with my Arista classmates and wearing one of Uncle Charles Vogel's "loud" ties.

I was once on a flight back to Los Angeles and the passenger next to me asked me where I got my ties. I told her my wife made them. She asked why I chose those designs. I told her that men's ties were dull and I saw no reason why men couldn't have control over the designs available for their neckties to liven up their appearance. She said she sold ties to department stores, and I am sure that growing attitude helped bring back the loud ties of my Uncle Charlie's era.

My colleagues at Stony Brook University did tease me about my ties. On one occasion I was teaching in a program called Federated Learning Communities. There were five of us who each taught a course cognate to a common theme. That first year in which I taught in the program it was on

“Social and Ethical Issues in the Life sciences.” In addition to the other four teaching faculty, there was a “master learner” who was a physicist, whose job it was to go to all our classes and to help the students connect what they learned to the common theme for the program. There was also the head of the Federated Learning Communities. They sent me out on an errand and when I came back I sat waiting for them to begin their discussion. After a few moments of silence, one said, “Elof, will you look at our necks?” I then saw that each was wearing one of my neckties! They had arranged with Nedra to pull this trick on me.

By the 1980s wild loud neckties were back again and my ties were no longer novel to my students or colleagues. By the 1990s ties began to disappear from the necks of my colleagues and virtually no students wore neckties. In the first fifteen years of the twenty-first century, ties are as scarce as fountain pens in the academic world, save perhaps for a few administrators. When TV news shows reveal Presidents, Corporate heads (especially young ones), and politicians being interviewed without a tie, the message spreads rapidly. It even happened to me. When I retired and moved to Bloomington Indiana, I saw virtually no ties during the Sunday service at the Unitarian-Universalist church and no ties among my fellow retirees at Emeriti House where I joined a memoir writing group. My last batch of ties are still in my closet, and I scan them with guilt, hoping for a time while I am still alive when they will again be considered an adornment that helps define men’s taste or lack thereof in clothing.

CHAPTER 56

LEWOTLA

A member of the Rice University team came up with a tee shirt design. It just said LEWOTLA. Insiders knew it as an acronym for the Lilly Endowment Workshops on the Liberal Arts. Folks in the streets, bookstores, and shops of Colorado Springs puzzled over the strange word. The workshops were run by the Lilly Endowment for more than 15 years. They had an earlier history under the Danforth Foundation but that ended in 1976 and after a year or so, it was reborn with new leadership. One of Danforth's staff, Laura Bornholt moved to the Lilly endowment and thought this was a program too good to die. It lives in a somewhat modified form today as part of the Asheville Conferences on Higher Education. In this case one of the LEWOTLA faculty, Gerry Gaff, took it to North Carolina and the American Council of Higher Education which he directed.

In its Danforth form Warren Martin and John Rankin co-directed the conference. It was usually held in Colorado Springs at Colorado College. I was invited to attend as a pinch hitter for Joe Katz, a Stony Brook educator who thought I'd add to the program. I loved it. The idea was simple. Bring some 20 to 25 teams of three faculty and an administrator to the conference. Spouses and children stayed home. Spend three weeks in early summer and enjoy workshops taught by stellar faculty from around the country. When not taking these seminars, work with your team to solve an academic problem that is being addressed by the college. Enjoy some marvelous field trips to the Garden of the Gods, the Air Force Academy, the Mt. Cheyenne Zoo; eat a superb brunch at the Broadmoor, enjoy a picnic behind Pike's Peak, and relax with a ride up the cog railroad to the top of Pike's Peak. The seminars varied. One could read Plato; one could learn about education and

the law; one could learn about science and the liberal arts; one could become immersed in literature and ethical thought. Some were practical (the extra-curriculum) and some were delightful (watching five art films and critiquing them). Faculty taught faculty. They make great students.



Figure 56-1

Loomis Hall was the dormitory where we were quartered at Colorado College in Colorado Springs.

I gave a talk about the teaching of biology for non-majors, and it was well received. From this I was invited to Clarke College, a small liberal arts college in Dubuque, Iowa. It is a Catholic college for women. Sister Marguerite Neumann had attended my workshop and she came up with an idea for a symposium at her college to look at our third American century since the Declaration of Independence. She called her conference and the book that emerged from it, *The Tricentennial People*. It was on genetics and the future. When she asked me to participate, I told her I didn't know if an audience of Catholic women would appreciate my ideas on genetics. She smiled and calmed my anxiety, "How are our girls going to live in the real world if they don't know what it is?"

In 1980 I returned. This time it was sponsored by the Lilly Endowment. The director was Ralph Lundgren. His style was very different. Where Warren Martin liked to preside and speak with eloquence, Ralph liked the workshops to be dominated by the teams and the faculty. He got things going and he made sure we were all working and solving problems that came up. He had tremendous insight into what makes a community form and he had superb skills dealing with unruly staff and participants. He brought out the positive where he could and reminded us through his gifts that we were there primarily to vitalize the attending faculty with our seminars, and we were to be trouble shooters for their teams. We lived in

Loomis Hall, a student dormitory so it was roughing it for a lot of College Presidents, senior faculty, Provosts, and Deans who constituted the twelve staff who taught the seminars. He and Laura had modified the Danforth format. Ralph dumped most of the outside speakers for the plenary sessions. They tended to be “lecture and run” stars and they did not add to the sense of community. Laura and Ralph also allowed us to have our spouses join us for the two and a half weeks. Those who had younger children lived in a unit that was about one block from Loomis. Children over 12 were allowed to be with their parents in Loomis.



Figure 56-2

Pikes Peak remains snowcapped until early July. It was not easy walking at the tourist station on top of Pikes Peak. But it was a delight to see the changing colors during our stay.

We each served as a liaison or advisor for two teams. In those sessions we listened to the problem, tried to figure out where the power was and what the likely chance was of the project succeeding, and made sure that the teams didn't end up with reports full of irritations or impossible ambitions. We also made sure not to impose our ideas of what they should do. That first year I tackled Indiana Central and the University of Kansas. The faculty on the team from Indiana Central was somewhat fearful of initiating anything without a mandate from students, parents, or some direction from their President who was with them. The Kansas team did not know who they were until they arrived because of a turnover of administrators. Surprisingly, Kansas ended up with a very creative proposal for senior seminars that they implemented when they got back. I decided to sit in on one of my colleagues' courses, Bill van Allstyn taught one on law and the campus.

The Colorado College campus is near Pikes Peak and I would enjoy sitting in the stadium looking at its changing colors and shape. It held its

snow well into July. The colors kept changing not only with the time of day but with the weather. I found the high altitude took some getting used to and for the first few days my heart would be pounding when I went to bed. It was an opportunity for me to sketch. I drew rock formations, gnarled trees, and branches of pines with their cones.

The workshops made faculty remember what it is like to learn as a student. It made the teams learn how much they could accomplish when they were not distracted by the day to day needs and habits of working on their own campus. The teams were deliberately chosen to bring together large state schools, elite liberal arts schools, religious schools, historically black schools, and schools with unusual mandates. I got a cross section of higher education in America every year that I attended. Ralph only replaced members whose ratings were poor or whose attitudes he felt did not foster a sense of community. He wanted commitment from us, and he certainly gave us his commitment to work behind the scene to solve or defuse all the problems we detected. Over the years we enjoyed a lot of excursions. I liked the trip to the NORAD base at Mt. Cheyenne. There we saw a military base that sits inside the hollowed-out mountain on huge metal coils so that it can withstand the blast vibrations of a nuclear attack within a mile of the base. Hydrogen bombs closer than that would do in the base. At the time some 15,000 objects were being tracked at NORAD, including a glove lost by an astronaut. Any new object would be picked up by computer and tracked. It could distinguish a missile from a flock of geese in flight. NORAD was used as a command post during the Cold War. It would inform the government if an attack was imminent and where it would strike within the next 30 minutes. This would give the US enough time to decide if it should retaliate on a comparable or a massive scale. We had seen *Dr. Strangelove* a few days earlier and without the humor, the scenarios of a nuclear war were pretty much the same.

After several years the regular members looked forward to the two weeks of intellectual excitement and comradeship that we had developed. In the evening we would have a pitcher of margaritas and nachos at Jose Muldoon's and trade stories of academic life. We also made the long walk to the center of town and feasted on Michele's ice cream sundaes that came

with their own pitchers of hot fudge. I loved browsing and buying books in Chinook's bookstore, and I made a yearly search through the dusty shelves of Clauson's used bookstore. Clauson had been a friend of Thomas Hart Benton's and his cashier's nook had quite a few of Benton's sketches and water colors.



Figure 56-3

Clauson's bookstore in Colorado Springs. He was a friend of Thomas Hart Benton.

Through these conferences I got invitations to speak at many colleges throughout the United States from Fairbanks, Alaska to Jackson, Mississippi. It was enjoyable to see the students in these schools. One of the great riches of America is the 3000 different ways American colleges and universities educate their students. American students may have few shared general education experiences, but they have the most diverse population of college educated people in the world.

David Smith, who directed the Poynter Center at Indiana University, an ethical "think-tank" for the study of values and the professions, developed a statewide program on ethics across the disciplines modeled after the LEWOTLA conferences. Indiana colleges sent teams to learn different ethical issues in journalism, business, literature, science, religion, medicine, and philosophy. Each institution tried to introduce some segment of the

campus to the teaching of ethics in a new context. I was invited to all of those through Smith and I learned how difficult it was to measure the long-range effect of our teaching. Some speakers argued that we learn our values and ethics the way we learn our mother tongue, by mimicry of those around us. By the time students come to college, the pessimists argued, students were already set in their ethical views. Most faculty were more optimistic. They believed putting their disciplines in ethical contexts made students more reflective.

LEWOTLA ended in the summer of 1994. Ralph Lundgren became a Vice President and the Foundation decided it had given a good hunk of higher education an exposure to the liberal arts. Foundations like to do new things with their money. Many see their contributions as pump priming and if a State or institution does not take it over for the long haul, that's the end of the program. Many national foundations also undergo contraction either because their portfolio shrinks or because they feel the cost for national projects are too high and lack the impact that local programs have.

I felt sad, of course, because we never had closure, a chance to say goodbye but I can understand how demoralizing it would have been to finish those two weeks with the knowledge that this was it. It was the interests of the teams that had to be satisfied, not the staff's. This seems to be fairly common in my now long life. Nothing lasts. It's not so much that they "fall apart," as William Butler Yeats noted; rather, the world changes.



Figure 56-4

David Smith was part of the LEWOTLA team. He taught a short course on ethics. He was director of the Poynter Center at Indiana University which eventually led to my being a Fellow of the IU Institute for Advanced Studies and for participating in a series of seminars on bioethics that he organized.

CHAPTER 57

**THE UNIVERSITY OF UTAH AND
MORMON CULTURE**



Figure 57-1

The University of Utah at Salt Lake City is an attractive campus with the gorgeous Wasatch Mountains as a backdrop.

Jackson Newell called me from the University of Utah. I had met Jack at the Lilly endowment Workshops and he thought I'd be interested in being a McMurrin Visiting professor for the spring of 1984. I was happy to do so. Sterling McMurrin was Secretary of Education under the Johnson administration, and he donated a fund to bring visiting professors to the Utah campus. Jack Newell was Dean of the Honors Programs.

I taught a modified non-major's course to about 90 students and I gave a series of public lectures. I had a nice apartment near campus and Nedra or I flew out on most of the weekends. I used my spare time to write. I learned many nice things about Mormon traditions while I was there. Both McMurrin and Newell belonged to the liberal wing of the Mormon Church, and they had their own magazine. The students at the university, which is secular, are mostly Mormons. Mormons call themselves officially by the longer phrase, the Church of Jesus Christ of the Latter-Day Saints. In the newspapers the initials LDS are used as an abbreviation for the official name and Mormon is used in popular conversation. The more observant Mormons send their children to Brigham Young University which is LDS affiliated. The less observant Mormons follow the key theological creed, but they are less interested in traditions that are based on custom rather than creed. Thus observant Mormons do not drink beverages with alcohol, caffeine, or other stimulants (such as those found in tea or chocolate). In local parlance, the less observant Mormons are called Jack Mormons. In the campus restaurants students have a choice among regular and decaffeinated coffee and synthetic coffees which have no stimulant at all such as Postum. They also eat candies that look superficially like chocolate but are made from carob.

The campus is surrounded by the Wasatch Mountains, and it is a beautiful region of the country that brings skiers during the winter season. I visited some of the faculty homes in the mountains and they are as breathtaking a location as one could hope to find. The remnants of an inland ocean, the Great Salt Lake, bring with it an immense habitat for seagulls, a sight that I would normally associate with New York City or Los Angeles but not the Rocky Mountains.

The students in my class were mostly married males and unmarried females. Male Mormons are obliged to do two years of missionary work at their own expense. Those who do not have much family income usually do their missionary work locally or in the US. Others learn foreign languages and go to far off countries. Virtually every major language is taught at the university. It is a surprise to find a school in an area of the United States not known for exotic scholarship in which one could take courses in Medieval

Korean art. The Mormons try to absorb the cultures of the countries they visit so they can converse with local populations and show some knowledge of its history.

I learned from my male students that it takes about eight years to complete a BA because they usually marry after they return from their missionary work and begin having a family. To support their families they usually work full time, and this leads to fewer courses per semester. It also makes the class much easier to teach because the students are intensely interested in topics that deal with the human condition and the health of their children. I found it not uncommon for a student to visit me in my office and tell me about a family matter. One student mentioned his first child was born without thyroid glands. She was put on hormone therapy shortly after birth, so no irreversible brain damage occurred. I knew nothing about its inheritance, and I went with the student to the medical school library and looked up the latest articles on congenital absence of the thyroid gland. For the infant it is usually an attack from the mother's antibodies that enter the fetus through the placenta. This means all future children of this couple will be at risk of losing their thyroids, but each will have a life-long thyroid hormone that will be taken as a medication.

Another student wanted information on Usher syndrome, a genetic condition that produces deafness and blindness. For each student who came by, I prepared a genetic pedigree from their family history so they could share it with other relatives. I got to speak to the head of medical genetic services at the university hospital and he said Mormons had a very positive attitude about birth defects. They consider these children as specially favored by God for future life as a Christ-like leader on some planet somewhere in the universe. I visited a State supported facility for children with serious mental retardation and it was a clean and well-run enterprise, each patient receiving a lot of individual attention and participating in many activities consistent with their abilities to function. A few were non-functional, including a teenage child with Down syndrome who sat in a diaper and was strapped to a chair with a seat belt, and drooled. If the child could be managed at home the parents cared for it and had a lot of support from their Mormon neighbors.

One of the impressive features of Mormon culture was its sense of community and family. They did what they could to help families struggle through marital difficulties. Mormons who are married in LDS churches are not permitted a divorce. They find jobs for those who are laid off. They make sure that no Mormon who is observant suffers in poverty. They give generously of their time to each other. One example of this community response was at the time of some heavy rains following a heavy snow season. There were floods and waters began roaring into the downtown section of Salt Lake City. The Mormons invoked their emergency telephone tree and as Mormons called their assigned neighbors, several thousand of them descended into the major avenues and streets forming a sandbag brigade. Within a few hours the waters were diverted from the business section and into a safe run-off area. The buildings were spared expensive flood damage.

Some Mormons were not as comfortable with their religion as their parents wished and many were in open defiance of it. I saw young college age beggars who had been thrown out of their homes by their parents for some infringement that alienated them. I felt sorry for these sad people trying to find half-eaten sandwiches in the waste bins on campus and once I invited one to a meal on campus. One of the strangest requests was from an older Mormon in my class. He told me he had done his missionary work in Sweden and while there he fell in love with a young man he had converted and brought him back to go to school at the University of Utah. They lived together and the younger man was beginning to develop a wandering eye for men his own age. This is where I came in. He asked me if I thought it reasonable for him to go to Germany, pay a woman about \$5000 to bear a child that he would bring back for his lover and himself to raise. I pointed out that while it was not my habit to tell people what to do or not do, I wanted to think about several consequence of his proposal. It was a classic baby trap and like heterosexual baby traps it had the same risk of failing. Babies are not always a sufficient glue to hold a marriage relation together. It also involved using another person as an instrument of his will without regard to the emotional damage, not to mention physical risk that he was asking a stranger to take. Almost certainly she would not go through with it

if it were not for the money. The money was virtually a bribe to override common sense for personal morality. I also told him that it might have serious consequences for the child they were initially raising if the child was resented for not being the love bond for which it was intended. Finally I asked him how he expected to raise such a child in a homosexual union in a community that has very strong hostility to homosexual behavior. The LGBT movement had not yet begun in those years. I have no idea what this student eventually did. I did not condemn him, but I wanted him to think through the potential difficulties he was creating because he was so fearful of losing the person he loved.

I learned from this student, who was a utility company employee, that there are still a few polygamous families that live in isolated regions, usually on farms and who are left alone as long as they don't go public with their polygamous relation. Mormons abandoned polygamy as part of the price of entering Utah into the United States. Included in that compromise was an arrangement in which residents living with an odd number street address were registered in one political party and even number residency people were assigned the other political party, thus making both Democrats and Republicans feel they had a chance to wage fair campaigns.

I met many able students while I was there, and I was impressed by the care of the university for its undergraduate students. They had innovative programs. They rewarded faculty who came up with new course designs and among the many new ones submitted they would select one for a prestigious University Professor title and this person would have his or her portrait painted in oil and placed in a gallery of illustrious faculty. The recipient also got to teach that course and give a university lecture to the general public. Their student union was beautifully designed and had many restaurants. They boasted that they have the same menu only twice in a single year.

I was invited by Jack Newell to meet sterling McMurrin for a dinner at the Hotel Utah. It was a luxury hotel for observant Mormons. They had a fully dressed sommelier offer a variety of sparkling waters and non-fermented but carbonated fruit juices. The ritual was the same as in any

gourmet restaurant that served fine wines, down to sniffing the glass and nodding approval. I had read several of McMurrin's articles and if I didn't know he was a Mormon, I would have thought he'd be comfortable as a Un

CHAPTER 58

MINNESOTA

My first stay at Minnesota was in the Spring of 1974. I was invited as a Hill Foundation Distinguished Visiting Professor. The Hill Foundation supported programs in the history of science, and I offered a seminar course on the history of genetics. I was one of only a half dozen such historians of genetics at the time and my book on *The Gene: A Critical History* made me well known among historians of science. I am very unusual in being a historian of science who is not primarily affiliated with a history of science program or a department in the history of science. My primary teaching duties have always been in the life sciences, and I prefer it that way. This gives me a perspective from the sciences and not the historical tradition. There is some tension between the two ways of treating the history of science. Each side has a bias against the other. I wish it weren't so, but loyalties to disciplines are not easy to overcome.



Figure 58-1

The University of Minnesota has a campus at twin city St Paul and in Minneapolis. The Minneapolis campus is on the east bank of the Mississippi River. A bridge across the Mississippi connects the dormitories on the West bank with the East bank classroom buildings.

Historians hold up to contempt the traditional scientific review article that passes for history among graduate students. It is, as historians correctly point out, a summing up of victories and current beliefs with no reflection on the losers and the battles that led to the resulting triumph of one model or theory over another. I suspect there's more to this scientific approach than an evolutionary selection of ideas. It has to do with what scientists see as a building up of ideas on the work of others. Because each generation of scientists learns what it believes to be true there is an illusion of many successful steps leading to current knowledge. Scientists don't dwell on their failures; they just shake them off like a sacked quarterback and get on with the next play. The old-timers know better because they have lived through many failures, including their own. Few scientists will discuss those failures in a lecture course for science students and the myth of incremental progress is still the historical vision of uninformed scientists.

Scientists are also condemned by many historians of science for believing they really do describe a reality that exists independently of their imaginations. Many in the social sciences believe that there is more of a constructed reality than a described reality and that it is self-deception on the part of scientists that makes them claim they are describing the real world. Fortunately not all historians of science are influenced by this school of philosophy of science. There are still those who believe some objectivity does exist in retrieving and reporting the past, in weighing the likely truth of reminiscences, correspondence, diaries, and other primary sources and later recollections of participants in the history of ideas and scientific findings. But unlike academic scientists who tend to associate with other scientists, mathematicians, and occasionally engineers and physicians, historians of science associate with sociologists and philosophers as well as historians. It is this difference in training and outlook that shapes the persons who do history of science. Most are trained as historians of science in history or in history of science departments and they are more often affiliated with the social sciences than with the experimental sciences.

The history of science program at the University of Minnesota was small and its major players were in the history of physics. I was there for the spring quarter, and I had arranged for Nedra to fly out on a few

weekends and I would fly out several other weekends so that I wouldn't be cut off from our children or Nedra. This was not a sabbatical leave but an approved leave of absence without pay from Stony Brook. I lived in a dormitory on the Minneapolis side of the University. The campus was actually split into three chunks. There was a West bank side of the Mississippi River where most of the undergraduates lived who were in the arts and humanities programs. There was a East bank side that had most of the academic departments and the medical school. Farther east, in St. Paul, a twin city with Minneapolis, was where most of the premeds lived. The bulk of the life sciences was located there.

I was about one block from the medical library. It was a pleasant association. I got to know the faculty well in the history of science and had many opportunities to go out to dinner and chat with them and visit their homes. I also met a physician, Bob Desnick, who had completed his MD after taking a PhD in biochemistry. He had read my book on the gene, and he attended my seminar. Bob was a pediatrician, and he loved the field of human genetics so we had a strong mutual interest because my own interests had shifted after Amanda's death and I was reading lots of articles on human genetics and appreciating how much that field was rediscovering the major ways chromosomes and genes go awry in fruit flies.

I much appreciated this chance to associate with historians of science because I learned to respect their integrity and see them as committed in their way as I was in mine to the history of science. Scientists do tend to minimize the influence of politics, class status, religion, cultural beliefs, gender, power, fame, and other factors that clearly determine who gets educated, who gets supported, and who gets published. Social scientists tend to minimize the power of scientific ideas, the efforts to use controls for experiments, the trust in reason, the pleasure of discovery, and the pursuit of truth that motivates most productive scientists. I felt comfortable staying as a scientist who did history of science because it kept the field more open to these multiple ways of interpreting how science works.

A few years later my sabbatical leave did open up. I decided to spend an entire year in Minnesota. This would mean living on a half salary and

moving the entire family to Minneapolis. There are no grants or agencies that provide money to support a faculty member who wants to learn a new field. I wanted to learn human genetics. I wrote to Desnick and asked him if I could spend a year at the Dight Institute for Human Genetics and affiliate myself with his pediatric genetic group. I would go on rounds with pediatric fellows for a year and observe the children that were struggling with birth defects and genetic disorders. I wanted to see what was going on among physicians, parents, patients, genetic counselors, and others involved in the lives of these patients. I wanted to put a human face on every syndrome I talked about in my biology classes, and I wanted to teach in the medical school when I got back and have some authenticity for what I discussed in lecture.

Nedra and I drove out with a U-haul and we rented an unfurnished apartment in Dinky Town, the student ghetto that surrounds the University to its north and east. We went to Goodwill and the Salvation Army and bought chairs for \$1 each and a table and bureau drawers for \$5 each. We went to a plastics factory and had them cut mattress sized slabs of foam plastic for our beds. We went to a warehouse that sold fire damaged goods and bought our school supplies for the children and I bought a quart of black ink. Nedra made most of the children's clothing and I took out a year's family membership in the Minneapolis College of Art and Design Museum which had a series of weekly films, one on British art films and one on British comedies. We also took out a family membership in the Walker museum. I walked to school which was only a few blocks away and the children walked to school. My mother-in-law came out to visit and stripped the old paint from the bureau drawers and table and stained the original wood. Nedra and I had both grown up in poverty and we knew how to "rough it." We also thought our children would benefit from a different culture and the opportunity to experience life in a city.

I enjoyed going on rounds and kept a log book of the cases, drawing illustrations of the disorders and taking notes during the conferences about the patients we saw. I did not feel uncomfortable looking at children with multiple malformations. I felt enormous sorrow for their misery and the despair many had over the hopelessness of their chronic conditions. One

teenage boy had repeatedly been hospitalized for pneumonia and profound weakness from his cystic fibrosis. He pulled all the intravenous needles out of his veins and wanted to die. Others were just bewildered; they were sick and did not know why they were not getting better, but just accepted the reality that they had to live in. I marveled at the skill that Desnick and his staff brought to genetic counseling sessions and the care given to the concerns of parents and patient alike. I learned that a great deal of a physician's time is spent on the telephone getting information about patients and reassuring parents who called about their children's progress or their latest symptoms. I read several hours a day in the medical library to see what was new for each disorder I got to see that day.

Desnick would have one of his pediatric fellows once a week compile a list of all the children and adults in the wards who were there with genetic disorders. He used these lists to inform his colleagues that genetic disorders were not insignificant, as many had learned in their medical schools. In the pediatric ward alone thirty percent of the patients a year were there because of genetic conditions. I learned how effective genetic counseling was. In Minneapolis all the Jewish population had been screened and not a single child was born with Tay-Sachs disease, a lethal condition that blinds and paralyzes infants as their minds deteriorate. Those who were at risk chose to abort the pregnancy rather than bring a child into the world to suffer for two to four years. The counseling also worked to save lives by informing relatives of disorders that were likely to be misdiagnosed and if not treated could lead to death or a painful chronic illness.

I enjoyed meeting Sheldon Reed, the director of the Dight Institute. He had coined the term genetic counseling in the early 1940s. He had purged it of eugenic considerations, and he wanted to keep the charlatans out by requesting that those who provide genetic counseling do so without pay as an added responsibility to their own medical specialty. That idealism, of course, disappeared by the 1970s although it would not be until the 1980s that medical genetics, genetic counseling, cytogenetics, and related genetic services were all made into professions that were board certified requiring national examinations and competency standards. Reed's most important advice for genetic counseling still holds. Genetic counseling provides the

information its clients request and need to know to make decisions about their reproductive lives and their health. It does not tell its clients what to do.



Figure 58-2

Sheldon Reed headed the Dight Institute at the University of Minnesota. He was the first to coin the term “genetic counseling.”

It was an experience to get through a Minneapolis winter. We learned to dress in double layers. You wore gloves and put mittens over the gloves. You wore boots over your shoes. You had long-john underwear and you didn't hesitate to wrap a scarf around your face with only your eyes barely showing. By December the temperature rarely went above zero degrees Fahrenheit. The snows were blinding. One occasion I listened to the radio and the announcer said, “If you climb into your refrigerator today it will be 70 degrees warmer than it is outside.” At minus 30 degrees Fahrenheit, it was a challenge to get to school. Without wrapping up and sealing all areas from the penetration of the cold, it was hazardous. Yet school was almost never canceled, and the children got to and from their classes and I trudged to and from the medical center. I kept the battery to the car inside the house because it would be impossible to start the car if I left the battery in the car overnight. I chuckled as I walked down the streets and saw hapless drivers standing next to their stubborn cars. “You're dead, car; but I'm alive.”

When the temperature shot up to 30 degrees Fahrenheit it was like a heat wave and faculty would walk from building to building in their shirt

sleeves. During those long winter nights Minneapolis engaged in many hobbies. There were hundreds of weaving guilds and people enjoyed their reading, listening to music, or going to amateur theater and other local social groups. I learned to do diagramless crossword puzzles in the local paper and we learned the pleasures of listening to public radio where we first heard Garrison Keeler and his Lake Wobegon stories. He was still a local phenomenon.

The experience proved beneficial to all of us. We learned we could live on half salary and that we could enjoy the small pleasures of the film series and art exhibits at the museums. Nedra added weaving to her many fabric art skills. Christina stayed on a year after we left to attend the Minneapolis College of Art and Design. John joined a debate team and loved the experience of traveling to different high schools to debate. We all got to see the gorgeous parks in the spring that inspired Longfellow. Our children got to know some of their Scandinavian heritage through the Snoos Boulevard festival when Scandinavians dressed in their old country costumes and danced and celebrated with songs and ethnic foods. I shunned the shallow values of the chauvinistic “Kiss me, I’m Swedish” buttons, but I was pleased to meet a woman who was a direct descendent of Carl Michael Bellman, the Swedish Bobbie Burns, in whose house my father grew up.



Figure 58-3

Robert Desnick headed the pediatric genetics group at the University of Minnesota and I went on rounds with him and his medical students, absorbing a year of human and medical genetics while on sabbatical. Desnick helped me gain access to the hospital records on retinoblastoma and we wrote two papers while there. He moved to head the medical genetics program at Mt. Sinai medical school in Manhattan.

CHAPTER 59

TOUGALOO

Herman Blake, whom I had first met at the Danforth conferences, called me and asked if I could come to Tougaloo to visit or spend a sabbatical. I told Herman I'd do so and when I had the 1986-87 year for my sabbatical, I partitioned it into two separate activities. In the fall I went to IU to write and in the spring I went to Tougaloo to teach. I came as a United Negro College Fund Distinguished Visiting Professor.

Tougaloo is an Indian name, signifying "bend of the river." It is located just north of Jackson Mississippi. The campus was established during the Reconstruction period by northern missionaries. It is now a non-denominational school with a Christian heritage that included a mandatory convocation on Wednesday afternoons. Some of the buildings are of the Civil War vintage. The land was part of a plantation, and the slave owner could stand on a platform inside the mansion (now the administration building) and look out on the fields with a telescope to see how the day's work was progressing. My office was in another Civil War vintage house and the wooden stairs were worn into ruts from the many tens of thousands of muddied shoes moving up and down over the years. We were given an apartment to live in on campus. That was a brick apartment complex, one floor in height and each unit held two apartments.



Figure 59-1

We spent one semester at Tougaloo College in Jackson, Mississippi at the invitation of Herman Blake, its President. I much enjoyed the experience of teaching at a historically black college.

We arrived from Indiana and settled in. The campus had about 500 students and about 50 faculty. With a few white exceptions as exchange students from Brown University or Milsaps College, the students were African American. Most were from Mississippi, but a few were out of town, including one student from Brooklyn, NY. The faculty were more integrated. About half were white, many of them former civil rights protesters who stayed on the campus in the mid-1960s and when they finished up at their schools (many of them elite liberal art and ivy schools) they joined the faculty at Tougaloo. The remaining faculty were mostly African American, and a few were from the middle East or India.

My traditional liberal values were originally opposed to separate colleges for whites and blacks. The whole purpose of the civil rights movement in my mind was integration and separating blacks didn't make sense. It began to make sense within a few weeks of my arrival. African American students at larger schools, like my own Stony Brook, are "sink or swim" institutions. Undergraduates are on their own with only modest support from peers or from the administration. Unless African American students are social and join some self-help support group, they can quickly disappear on campus. No one will care if they go to class or not, have writing or other problems, or exist or not.

Tougaloo still uses a paternalistic approach to education. Attendance is taken in every class. If a student is absent that is reported that day. The student is immediately contacted by a counselor to find out why. If a student has poor writing or computational skills, the faculty member must report that to a writing center or computation center. The student is then asked to work with the staff of these skill centers and all of their assignments are monitored. Students who fail an examination are also singled out for special help. Because almost all the students are African American, there is no discrimination on campus. The student has to focus on college skills, not survival skills as a minority member in a white majority community. It is a residential college, and the campus is small. A counselor or faculty member can walk right to the student's door and knock on the door to find out why the student isn't coming to class

I arranged to teach two classes. One was a modified Bio 101-102 and it had about 90 students. The other was a seminar in human genetics. I had 20 students in that seminar class. When I came to the first large class, I was aware, for the first time in my life, of being white, not as a description but as a person, a culture, a feeling of being different. I was pleased that my skill as a lecturer put them at ease and after two weeks, I no longer felt different. I was just their teacher, and they were just my students.

My immediate problem was the human genetics seminar. I had a few reference books with me, but when I looked at the Tougaloo library I was disappointed. There were few genetics books and virtually none in human genetics. There were also no journals of human genetics. I called the librarian at the medical school in the University of Mississippi about 10 miles south of Tougaloo just off the interstate highway. It would be a quick drive down. I asked her if I could bring about ten students a week in two shifts to use their medical library. I would be with them to help them so they would not place a burden on their staff and the only item I needed was a medical dictionary to keep at the table when I was with them. She said that would be fine as long as I was there to supervise them.

I taught the students in the seminar how to use the *Index Medicus* to look up a topic. I had assigned each student a genetic disorder to look up

and find the latest articles about its diagnosis and treatment. It was a great way to know the students, chatting with them in the car and when we got there, I made sure I sat with them. We all had current issues of the human genetics journals and references gleaned from the Index Medicus. I had my own notebook with me and took notes on topics I wanted to cover in class and served as a model to them of how a scholar works. When they were stuck and the dictionary didn't help, I told them what the article was describing. They loved the opportunity to enter the world of scholarship and see how scientists find what is new on any topic of interest.

For the large lecture course, I devised a way to do research without a laboratory in human genetics. I taught them how to do a pedigree and each student had to construct one of his or her own family. I compiled all the data and showed how it could result in a demographic profile of the class. They learned that in their grandparents' generations there were causes of mortality (such as dying during childbirth) that weren't present in their parent's generation. I learned that there were an excess of deaths from gunshot wounds. I found that some of my students were parents. Most of the students were from Mississippi and were first generation college students.

After I gave my first examination, I had all those who got an F together at a meeting. I gave them a quiz, but first I gave the answers. I talked about the organelles of the cells, the characteristics of some hereditary diseases, including sickle cell anemia, and some the stages of cell division. I then passed out the sheets with definitions of terms and gathered these. Most students got about 6 out of ten correct. There was one item that all except one student got correct – priapism, a condition in which a male cannot lose his erection (it stays that way for hours or days) and it is very painful. The students must have remembered this because it hit home – it dealt with sex and one of the symptoms of sickle cell anemia. There were several things I learned from this approach. Most F students are not dumb, they're just not motivated. Students also have good short-term memory but unless they use the knowledge it decays relatively rapidly. I used Tougaloo's paternalistic approach and made contracts with the students. If they did the work and extra assignments for the course, I would pass them even if they had an F. I

took that risk and saw them individually. One student told me she was always poor in science and her mother even told her she would fail when she mentioned she was taking my course. I learned she was majoring in journalism. I told her I'd give her an assignment. "You're going to interview me and find out what I do as a scientist." She did. She also got over her anxiety about science and got an A on her final examination. Most of the students followed the contract and passed (really passed because their work improved). The student who didn't know what priapism was, I considered a lost cause, because his head was in a fog bank and he just wasn't paying attention. I reported him to my department chair for more extensive counseling.

The Tougaloo experience was a very positive one. I got to hear my students sing in the school's gospel choir. I had many students dropping in to our apartment to chat. I attended several convocations in which civil rights leaders discussed what they were doing now. I also met many dedicated faculty who were committed to their students and who loved to teach. There were moments of unease on campus, including some thefts, a shooting incident, and the conflicts of different faculty groups vying for power.

I learned how much a school like Tougaloo does with so little money. Their buildings need repairs; their roads were full of potholes; they lacked an adequate student bookstore; and their faculty were paid an abysmally low salary. Their students fed into the graduate programs and professional schools in Mississippi and other states and students that would have failed out of large northern indifferent universities were becoming lawyers, physicians, professors, and business executives. It is certainly not an argument for segregation, but it is an argument for caring communities of faculty and students that smaller colleges provide. The historically black colleges nurture their students. Until colleges that are predominantly white do the same for all their students, there is good reason for African American parents to send their children to the colleges they know will bring out the talents within them.



*Figure 59-2
Logo for Tougaloo College.*



*Figure 59-3
Herman Blake I first met at the Danforth Foundation and then for several years we were colleagues at the Lilly endowment Workshops on the Liberal Arts. He invited me to teach at Tougaloo College as a United Negro College Fund Visiting Professor after he was named President of Tougaloo College.*

CHAPTER 60

AGENT ORANGE

In 1983 I received a call from a colleague in the medical school. Dr. Carolyn Trunca was head of the cytogenetics and genetic counseling unit at the University Hospital. “What do you know about Agent Orange?” she asked. “Nothing,” I replied. She said Congressman Downey had called her office and asked if she could counsel veterans of the Vietnam War who had been exposed to Agent Orange. Trunca called me because she knew I had worked on chemical mutagens. I told her I’d do some reading and call her back.

After a week of searching the medical and biological literature, I told her the work was contradictory and had about the same low quality of reliability as the papers on LSD had in the mid 1960s. I told her I would try to get hold of some Agent Orange components and run a large scale test.

I had a modest grant from the Biology Department that covered supplies but no labor. That didn’t matter, I had some superb undergraduates who were delighted to work on Agent Orange. I called my colleague Abe Krikorian and asked him if he could recommend a supplier for 2,4-D and 2,4,5-T the weed killers that were mixed into a solvent or and then sprayed from planes as they made low passes over tropical forest canopies that housed guerrilla trails. The slurry or powder is white. The term Agent Orange was for the ring of orange paint used to identify the contents of drums of chemicals used by the military during the war. Krikorian told me had some “dirty” 2,4,5-T that he had purchased from Dow Chemical before they began producing batches with lower dioxin content. I used that and some recent 2,4-D I bought from Dow chemical.

Dan Ciccarone, Tracy Myers, and Richard Levy helped me with different phases of the study. We first worked out concentrations to see which were lethal and which were just below toxicity. We found that there was a sharp cutoff dose above which we got no flies when the eggs were laid on food in which these components were added. The 2,4-D was mildest. There was no substantial difference between the Agent Orange mixture and 2,4,5-T alone.

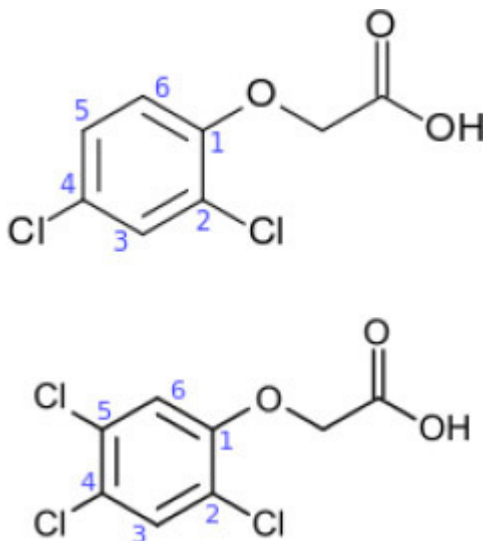


Figure 60-1

Chemical structure of 2,4-D (top) and 2,4,5-T (bottom). A mixture of the two is called "agent orange" and it was a major herbicide used in the Vietnam War.

We found a lot of biological effects. If flies had a choice of laying eggs on control food or food with any of the Agent Orange components, they preferred the control food. The chemicals were inhibiting to egg laying. If the eggs did get laid on the food, and began to develop, the larvae would prematurely leave the food and dry out and die on the sides of the glass bottle or vial at lethal doses. More managed to stay in the food at sublethal doses. When the flies emerged there was a huge excess of males. Most of the females were developmentally delayed by several days and they were differentially killed. I figured this must be due to the higher fat content of females that are essentially egg-making machines. The Agent Orange components are fat soluble and poorly soluble in water. There were other strange effects. Sometimes the flies would emerge with their genitalia extruded.

Word of my experiments circulated back to Trunca and from her to the psychology department where a colleague was doing a questionnaire analysis of Agent Orange effects and returning veterans. I got a call from him.

“I’m organizing a team of investigators studying Agent Orange for an international conference on Agent Orange. Would you be interested in going?”

“You bet. Where will it be held?”

“Ho Chi Minh City.”

I was surprised. I learned that the Vietnamese ambassador to the UN contacted our representative, Cyrus Vance, who agreed that this would be valuable for our own veterans but since the US did not officially recognize Vietnam at that time, there could be no official US involvement. He would contact academic colleagues and put them in contact with the Vietnamese Ambassador. That was how my colleague got word of the conference. We met for a planning meeting at Mt. Sinai Hospital in NYC and agreed to go if the meeting was not a propaganda session. We were not interested in the morality of spraying, blame for its wide spread use, or other political controversy associated with Agent Orange. We were interested in the short and long lasting effects of millions of pounds of Agent Orange sprayed on ecosystems, villages, food chains, and people. We were interested in the experimental work, wherever it was done, that revealed the biological, genetic, psychological, or medical effects of these herbicides. Dr. Westing chaired the meeting and he said he had preliminary talks with the Vietnamese who assured him this would be a scientific meeting and not a show case for propaganda. To assure this a senior panel of directors was set up and any one of the senior panels could veto a talk or presentation that dealt with propaganda instead of science.

I flew to Hong Kong and caught a flight to Bangkok. We would spend several days there while waiting for our visas at the Vietnamese embassy. I enjoyed the opportunity to visit their Buddhist temples, their floating markets among the klongs or canals where dead cats floated among the lush green waters and boats would paddle up and offer ripe bananas for sale. I

was besieged by taxi drivers who wanted to take me to their red-light district, one informing me that “our girls are very good.” “But I’m a married man,” I told him, and he burst into laughter.

I was given a lift to the business section to look around their jewelry stores and suddenly found myself alone. I took out the city map I carried and figured out where I was and then tried to match the Sanskrit symbols for the major avenues with the places I headed towards. It was an adventure because I was some three miles from the hotel and pedestrian traffic was adventurous at street corners. No one paid attention to street lights and most streets did not have them. I discovered the safest way to get across the street was to wait for a woman and a child and tag along with her at a brisk pace across the traffic.

We got on our Air France, once-a-week, flight to Ho Chi Minh City and as we entered Tan Sun Nhut airport, I saw the craters of the war filled with water and serving as rice paddies. Along the sides of the runway, there was still considerable wreckage of the scuttled planes blown up as the US abandoned Vietnam.

We were taken by motorcade escort to a hotel near the Mekong River and checked in. The food was excellent and so was the Vietnamese beer. We were free to go wherever we wanted in the city without an escort. When we walked out, we were besieged by rickshaw drivers who wanted to take us around town. They were very vocal, “USA number 1,” and they would give thumbs up sign when we passed them in the street. We were sometimes stopped by teenage boys who said they had an American father and could we help them get out of Vietnam. The downtown area had virtually no cars. All traffic was by bicycle. The few cars that were there were used as taxis, and they were quite old but lovingly cared for by their owners.

We were taken to a war museum which had a lot of captured ordinances including bombs that cleared jungle areas to make instant landing pads for helicopters rather than craters. They had photos of alleged Agent Orange induced birth defects, including a case of an untreated retinoblastoma. There was no data and I was very suspicious that these were just what occur

anyplace in the world but because of their disturbing visual image they were used as propaganda.



Figure 60-2

Saigon was renamed Ho Chi Minh City. It was virtually all bicycle traffic when I was there for the International Symposium on Agent Orange. I stayed at the Cau Loon Hotel near the Saigon River.

We took a field trip to the Ma Da forest where Agent Orange spraying some ten years earlier had cleared the jungle and cut the wildlife into two with a 1000 foot gap. This was now filled with elephant grass and the dry season often made the grass vulnerable to fires which scorched the earth and took some more trees on either side of the cleared region. Thus the original damage, far from being reclaimed by the jungle, was actually spreading. They tried planting different commercial trees and plants to see if they could make it useful for farming, but they failed. The soil was too shallow and poor.

At the conference all papers were translated into Vietnamese, French, English, and Russian. I listened to a number of talks about birth defects and figured out a major error. The Vietnamese were underreporting birth defects in control (unsprayed) areas and over reporting them in sprayed areas. I raised this argument in the discussions, and I was told that their low control

rates were much lower than those of Europe and the United States because they were an agricultural community and did not have pollutants from industry. I thought the argument specious and more likely people blamed their sick kids on Agent Orange than on the chance raw deals that nature hands out indiscriminately to the rich and the poor alike. A similar underreporting of control values occurred in their discussion of miscarriages in the sprayed and unsprayed regions. There was only one reported effect that I had to take seriously. They had a huge number of molar pregnancies. These are implantations leading to a pregnancy in which the sac is empty and contains no embryo. In the US this is rare (about one in several thousand births). In tropical areas it rises to about one in 300 births. The Vietnamese were reporting a high percent (about 5 to 10%) in the sprayed areas but control values in their Northern regions where sprayed veterans returned to start their families. About two or three years later I read an article in *Science* that revealed molar pregnancies to be derived exclusively from the sperm chromosomes. The egg kicks out all its nuclei and thus two types of nuclei form, those which are XX bearing and those which are YY bearing. Each cell duplicates and retains the sperm contribution. The YY molar pregnancies usually abort before implantation. The XX pregnancies have an elevated risk of developing cancer of the placenta. The interpretation of molar pregnancies made the Vietnamese high frequency a likely consequence. If Agent Orange in the food chain was entering the diets of the sprayed villages, the eggs would preferentially store it because they are fat rich and this might cause the eggs to dump their nuclei, and thus set them up for molar pregnancies.

An opportunity to learn about the hazards of herbicides in the soil was lost because of Cold War politics. If US and European teams had been able to go to Vietnam in the first decade after the war ended they could have collected soil samples, water samples, and tissue samples, to study the passage of these herbicides in the food and the population. Unfortunately both 2,4-D and 2,4,5-T decay in the soil and within a few months half their amount disappears.

The sessions where we wrote summary reports were stormy sessions and the Soviet delegates were particularly difficult to work with because

they kept trying to put statements of blame against the United States in their statements and the rest of us fought hard to keep these out. Westing had his hands full trying to keep the Symposium from ending up as propaganda and he succeeded.

When I got back, I had a few opportunities to speak to veterans groups. I found it sad that these men were treated as psychotics and alcoholics and their complaints about mental damage and physical weakness dismissed. Officially the government refused to admit to any effect of Agent Orange exposure except for a skin condition called chloracne. The sores were numerous and distributed throughout the body and this unique pattern in that age group made it impossible to hunt for a natural disorder that could carry the blame. Whenever an environmental agent does the same damage that occurs naturally, the lawyers for the government will argue fiercely to keep such effects out of discussion for treatment or compensation. Just as the Vietnamese are only too willing to blame all their sick kids on Agent Orange, our veterans will do the same for themselves and for their children. The type of controlled study that should be done cannot be done. Much of the records of where troops were stationed in Vietnam and when regions were sprayed were destroyed as the US left Vietnam and chose not to leave documents of its activities for the enemy to read. By the time we got to recognizing the Vietnamese as a state with full diplomatic status, the soils and waters of Vietnam had degraded their Agent Orange components to traces of their original amounts.

More than 20 years later, I returned to Agent Orange after I retired. I attended a meeting at Cold Spring Harbor and met Matthew Meselson. I had heard that Meselson had an extensive collection of papers on Agent Orange. He was well known for his work with Frank Stahl that demonstrated a semi-conservative replication of DNA in bacteria. We discussed his interests in Agent Orange. He was not interesting in writing a book of his own on that topic but encouraged me to use his collection to write that book. I made several trips to Harvard, did some interviews with Meselson, interviewed those Meselson knew who played a role in examining Agent Orange usage and effects in the Vietnam War, and used the Kennedy Library to see what declassified documents they had. The

results of this was a series of drafts of a book on the history of Agent Orange from its origin as components used as plant growth hormones, its use after WWII as an herbicide, and its use by the British in a war in Malaysia. I learned how the idea was promoted to use it in the Vietnam War. I learned how controversial every aspect was. I could not conclude it had lasting ecological effects. I could not conclude that most veterans who were exposed to it were harmed by it. I could not conclude that it was perfectly safe to use.

What I learned is that much of our concerns about environmental issues are mired in politics and the use of such agents as weapons is based more on hope or faith than it is on solid science. Similarly I learned that most of the opposition to the use of those agents in war is based on fear rather than solid scientific findings. Why is it so hard to get good science on controversial exposures to low doses of anything? They are very difficult experiments to design and to carry out because the size of such experiments is immense. How does one show something in the environment shifts a mutation rate from 1 in 100,000 to 1/99,999? How do you demonstrate a leukemia rate shifting from 1 in 5000 to 1/4999? Editors who read the manuscript felt it left the reader with a feeling I had taken no position on the effectiveness of its use as a weapon, as a potential hazard to those exposed to it, or as an agent that had seriously altered the environments sprayed. After writing four revisions of my initial manuscript, I abandoned the project as too time consuming for a person approaching 80 years. I felt guilty that I had let Meselson down. His collection of documents is as informative as a scholar could wish to find. Unfortunately the science that is needed to answer the controversial issues hasn't been done.

CHAPTER 61

SEMESTER AT SEA

Harry Corwin called me and asked, “How would you and Nedra like to join Judy and me for a Semester at Sea voyage for Spring 1991?” It took me a millisecond to give him an answer. I figured I’d commit myself first and then ask Nedra! I guessed right and Nedra’s employers gave her the permission to take a leave of absence. There was a year’s advanced preparation to design three courses for the program, to work out what field trips I would select for my students, and to handle the immense amount of paper work that requires visas, health examinations and immunizations, and other items for a lengthy sojourn outside the United States.

We took the train down to Atlanta to visit John and Dawn and continued by train to New Orleans where we checked into a hotel and did some last-minute shopping before boarding the SS Universe in a drenching downpour. The ship was a converted steamer that had once brought Michelangelo’s Pieta to the World’s Fair in New York City. The trip down the Mississippi was for the faculty and staff to get to know each other and the ship. We would pick up the students in Nassau. The ship had a library, a computer room, five class rooms, lounges for students, faculty, paying passengers, and a study lounge. There was a student store, an infirmary, and a theater. We would eat cafeteria style with a large selection of items for each meal.



Figure 61-1

The SS Universe Explorer which took us around the world in Spring 1991 and Fall 2001.

Each of the 24 faculty participants taught three courses. This gave students lots of choices. I retooled my non-major's course into a "Human condition around the world." I designed a new course "origins through religion, myth, and science." My third course was also new, "Science through voyages of discovery." I had shipped ahead a box of books I would use for the course lectures which I had only partially outlined. Teaching was every day at sea, including Saturdays and Sundays. There were no classes while in port.

We traveled eastward around the world, heading first to La Guairá, the port city closest to Caracas in Venezuela. From there we followed the coast of South America to Salvador in Brazil. We crossed the South Atlantic to Cape Town in South Africa. We moved again along the coast to Mombasa in Kenya. From there we had a smooth ride across the Indian Ocean to Madras in India. We continued on to Penang in Malaysia, then Hong Kong (and an inland railroad trip to Canton) in China, then Keelung in Taiwan and Kobe in Japan. We followed the north Pacific from the Aleutians down to Seattle, our destination for the end of the voyage. This gave us a lot of 23 hour days which made us feel quite exhausted because it is a very demanding voyage. Teaching three classes is a lot of work especially when two of the courses are new. There is also the demand of keeping an eye on the students and being responsible for them when going on field trips. I wrote extensively in my journal to keep a vivid account of our experiences. The ship environment has its own demands. Even in calm weather there is a gentle motion of the ship that takes some time to get used to. About one third of our days at sea were more turbulent with the ship rolling enough for

me to wear patches of Dramamine behind my ears. I never got sick even during storms when the ship pitch and roll made walking difficult down the corridors. Fortunately there were handrails everywhere. In those stormy occasions we would tape our bureau drawers to keep them from flying open and everything that had been sitting loose had to be stashed away. I loved watching the waves during the storms as they would crash on the bow of the ship and spill across the deck. The water in the swimming pool resembled water in a coffee cup sloshing back and forth.

I loved the colors of the seas and the texture of the waves. The most gorgeous seas were in the Caribbean where they would be greens and blues, clear and exciting to behold. At times the oceans would be dark blue, gray, or dull green. The waves most often had white caps and were small. In the calm of the Indian Ocean the waves formed long glassy billows without caps. I understood why my father loved the sea. I felt the pleasure he must have experienced when in the merchant marine. The sea defined me; it made me aware of my minuscule existence as I would look out and see a disk as far as my eyes could reach. Against the edge of this disk was an inverted bowl, its curvature very apparent and if there were clouds on the horizon they would curve like a painted diorama in a museum. It was a view of the world that I had never seen on land, and which would require a flat plain or desert sands of immense extension to equal. At night the Milky Way dominated the cloudless skies. We crossed the equator twice and on the second time around we held a traditional initiation party and students were well smeared with seaweed and fish as they groveled before King Neptune and Queen Minerva. They were hosed off after the ceremony and then plunged into the pool to remove the last traces of their anointment. As we crossed the equator at noon, I looked at my near shadowless state. I felt less like a vampire than a humbled scientist, experiencing lessons I had known only in my mind.

What struck me about the voyage was how fast we formed a community of 500 students, about 25 paying passengers, my fellow teachers and their spouses, and the staff. The crew we rarely saw. They were told to be invisible, and they worked in sections of the ship closed off to us. We saw them when we were invited to dinner with the captain or when we got to

tour the control room and see how the navigation equipment worked. We liked the mixed seating and sat with students almost every meal. It was strictly democratic standing on line and waiting to load our plates during meal hours. Alcohol was restricted to the bars and students were limited for the number of drinks that they could purchase. They were forbidden to bring their own alcoholic beverages and a spot check was made of the student's knapsacks when they returned from a field trip. Lots of alcohol was confiscated and lots was smuggled in. Drugs were strictly forbidden, and any student caught with drugs was summarily expelled and first off the gangplank into a state department car ready to whisk the offender to the airport, the ticket home prepaid by the parents who were notified. The captain was very firm on that unforgiving policy because many countries have laws that if drugs are found on a ship the entire ship and its contents can be confiscated and sold. This would have forced some 600 or more people to find their way home at their own expense without their belongings.

I got to know my students well. If they cut my class, I would shame them by wagging a finger at them during the lunch or dinner hour. I could rouse a student who overslept for an exam by going to the student's stateroom and pounding on the door. I had students come by to our cabin for a chat. I had many conversations while lounging in deck chairs or just walking with a student around the ship. My favorite student was Adam Darrack. He had a happy personality and immersed himself with pleasure in every activity he entered. He was a perfect good will ambassador for our country. In every port of call he would gather a group of local children and play soccer and other games with them. They would invite him to their homes and without speaking the language he learned how to communicate by gesture and pointing. He had a natural gift for bargaining and trading. He filled his tiny stateroom closet with the trophies of his voyage, including one huge mahogany hippopotamus for which he traded everything except his underwear and toted his triumph back to the applause of his shipmates.

The most important teaching, I felt, came not from the classroom, but from the experience the students had getting off at each port. Unlike jetports where the middle class are dressed alike and look prosperous no matter

where they land and encounter each other, ships are tethered to a portion of the city that is often run down, commercial, and demimonde, with cheap hotels for sailors, red-light districts, bars, and most depressing of all, immense poverty. Students would see mothers and children begging, children working for a living, and adults who were illiterate. They would see misery on a scale they did not experience in their lives.



Figure 61-2

Salvador in Brazil has numerous Cathedrals dating to the sixteenth century.

I took students to three field trips. In Salvador, the most African city in the Western hemisphere, we observed a *Condomblé* ceremony. The West African slaves brought to Brazil their polytheistic region of Orishas, about 500 deities who fill the needs of every personality and crisis in a person's life. The Church allowed the Africans to practice their religion as long as they did not do so in their cathedrals and churches, as long as the rites of passage were done in the church by Catholic priests, and as long as the Church was not rejected by those who practiced *Condomblé*. It was a workable transition. The Africans and their descendants found a match for each Orisha with a saint. The various saints as sculpting, bas-reliefs, and paintings inside the church had an uncanny resemblance to the Orishas seen in carvings and representations in the Museum of African Origins, many of them donated by African dignitaries and officials. The ceremony we watched involved dancing for hours until a member would collapse filled with the spirit of an Orisha and then that person would return dressed in the costume and carrying the signature symbols for that deity. Persons who

practiced Candomblé felt fulfilled by being occupied by one or more deities each week.



Figure 61-3

A Candomblé ceremony in Bahia, the Province of Brazil whose major city is Salvador.

The second field trip was in Madras. I took some students to see the hospital used by the poor. It was overwhelmed by sick people who would stand on long lines for hours waiting to be seen. When I spoke to the physician in charge of genetic disorders, she showed me a huge volume of Polaroid photos she had taken of sick children with birth defects and genetic disorders. “We can’t treat most of them. We don’t have the money. All I can do is take their pictures and say some kind words to their parents.” The next day I went with the students to a new hospital that was being dedicated, the Tamilnad Hospital. It was on a 100 acre estate in the northwest outskirts of the city. It had state of the art Coulter counters and cobalt radiation therapy machines. It was as well designed and equipped as our best hospitals in the United States. It was for the wealthy Brahmins. I sat next to one of the physicians. He said all of the physicians were Board certified in the United States and they had come back to India not to serve the poor but to enjoy the culture they loved and give their children the fullness of that religious experience. I was asked to give a dedicatory speech. I would not insult my hosts, nor would I shame them. That would

have been disrespectful, and it would not serve anyone. Instead I told them how fortunate it was that they had such a superb facility and that it was important that they built it because it would be the standard by which hospitals would be judged and would serve as a model for the state to emulate when it built hospitals for its citizens.



Figure 61-4

We enjoyed twelve days with Archbishop Tutu and his wife on board the SS Universe as we sailed from Salvador to Cape Town.

Our interpreter lecturer from Salvador to Cape Town was Archbishop Tutu. He was a very congenial person, and he would give left handed high fives to all who met him in the corridors of the ship. He gave an interfaith service for every day except Sunday when he held an Anglican service. He granted to all who signed up, a fifteen minute private audience in his cabin. I had not signed up but his cabin was two doors from our stateroom and he was alone. I asked if I could speak to him. He was pleased to do so. I told him how inadequate I felt when I judged myself by his accomplishments. He reassured me that each of us does what he or she does best, and we served humanity more in our daily activities done with good conscience and good will than by heroic efforts that are well publicized. He discussed some of the books he was reading, and I told him about my courses and invited him to attend a lecture I was planning for the course on “Origins.” He did attend and I’m not sure how much he appreciated a secular view of evolution and the difficulties a Darwinian universe created for those seeking to find meaning and purpose in their lives. Tutu did give a talk during the voyage on the theme of Genesis and referred to the goodness of creation, not its literalness. By stressing goodness, Tutu offered support for

environmentalists and for seeing nature not as something to be exploited but to be celebrated. He also gave autobiographical talks and he told us that South Africa would vote to allow blacks to vote, that the blacks would win, that apartheid would end, and that there would be no blood bath of revenge or collapse of government and culture when the transition to a democratic system was achieved. He told the students that he went on this voyage as a way of saying thank you to the American college students who led the way to keep up a boycott of South African goods while the protests, arrests, and killings were going on in South Africa. He did not believe the government would have let go of its power had it not been for the economic sanctions that he helped popularize and the students made effective.

I had my students in the “Human condition” course visit a WHO or local public health office in each port. We studied AIDS around the world. It was quite dramatic how differently countries responded. In Nassau the government would not allow AIDS education in school because the Church was opposed to any form of sex education. Instead the physicians trained the barbers and hair dressers and got them to inform teenagers to use condoms to prevent the spread of AIDS. Some of the teens wore tee shirts with the motto: “Got a stiffy? Wear a jiffy” In La Guairá the pamphlets gave innocuous advice, such as not sharing toothbrushes if the couple was homosexual. In Mombasa the postage stamps advertised the use of condoms against AIDS. In Madras the physicians who talked to us denied that AIDS would ever occur in India. They claimed their culture was different and monogamy was respected. Penang was concerned over the high incidence of AIDS in Thailand and they had an impressive educational program to prevent that happening in Malaysia. China was silent on AIDS and I couldn’t find any agency to visit for my students to discuss it.

Many colleges have study abroad programs and they are very valuable for getting to learn a foreign language and for learning another culture. Most students spend a year abroad in those programs, taking courses (often in the host language) and enjoying the camaraderie of students in the university there. College administrators of these study abroad programs look at Semester at Sea as superficial because students only spend a week in each port and don’t immerse themselves in one language or one culture.

This may be true but what students get in Semester at Sea is an incredible experience of diversity, of the extremes of wealth and poverty, and the depths of misery around the world. Many students who went to Semester at Sea want to return to one of the countries they visited. Some end up in our foreign service and many of those alumni as State Department staff were our port side briefing agents. Many more join the Peace Corps and find satisfaction in serving others who less favored by their life circumstances. Semester at Sea enlightens privileged and relatively well-to-do American students and speaks to their deepest values about the meaning of life.

Our second experience with Semester at Sea was in the Fall of 2001. I had just retired from Stony Brook University a year earlier but taught a course gratis for the Biochemistry and Cell Biology Department, so they'd have time to find a replacement. The opportunity to teach on Semester at Sea was a good way to have time to reflect on what to do the rest of my life. We left from Vancouver in August and our planned trip was supposed to include stops in Japan, China, Vietnam, Kenya, Turkey, Egypt, Morocco, and Bosnia. We hit a storm a few days after entering the Pacific, but no damage was done. Our route followed the US coast toward Alaska and then westward to Japan. We were about a half day's journey to Kobe in Japan when we learned of the attack on the World Trade Center in New York. We used the ship radio to contact Nedra's sister Sonya and our daughter Claudia. They were OK but Claudia lost eight people she worked with when she had a temporary job at the World Trade Center. Fortunately she had been sent to New Jersey by that company. When we got off at Kobe it was hard to find newspapers or magazines in English. They were all sold out and we had to wait until we got to Singapore before we had a supply of newspapers and magazines to buy. We were treated like fellow victims at Hiroshima when we visited the Peace Museum and mentioned we were from New York.

The State Department cancelled all our Muslim ports and substituted others. Instead of Kenya we turned around and went to the Seychelles. We went to many of the sites we had seen in 1992. Learning to improvise was a standard for this voyage and we did not know which port would be next. Partly this was out of fear by the State Department which did not want to

give advanced notice for terrorists to plan a piracy raid or attack on the ship. The biggest surprise was our last port assigned by the State Department. We would be visiting Havana. That was a shock because the US had long cut off relations with Fidel Castro's Cuba. To our surprise, Castro himself invited the entire ship's population to a banquet and he gave one of his famous four hour speeches. Among the things he pointed out was the terrorism not reported in American papers—people setting off fires in hotels in Havana.

We got to Miami and along the docks and rooftops were armed militia with guns. It reminded me of the time after Kennedy was shot and I went to see President Johnson speak at UCLA with the President of Mexico. The Cold War was over but another war, on terrorism, had replaced it with no target date or clear objective of how to combat it or end it.



Figure 61-5

The Hiroshima Peace Museum in Japan. The Semester at Sea students had made 1000 origami cranes to donate to the fountain by the museum entrance.

CHAPTER 62

THE HONORS COLLEGE

For eight years I served as Master of the Honors College at Stony Brook. They were the most rewarding years of my academic life. I was fired at the end of my eighth year and fell victim to the politics of administrators who seek to redesign an excellent program by expanding it and changing its activities. From their perspective, I assume my surly or obstructionist attitude toward their goals for the Honors College played the major role in my being dumped.

The university's senate decided this would be a good program to look into. They set up a committee that looked at honors colleges and programs and one of its representatives attended the national meetings to look at what the rest of the country was doing. The committee recommended a small, elite Honors College with scholarships for the students, special seminars for them to replace the liberal arts, and a Master to head it. I was asked by the Associate Provost for undergraduate studies if I would serve after being sounded out by the committee. I worked out an arrangement in which I would head the academic program, participate in the design of its courses, recruit faculty, set the standards for admission to the college, and negotiate a budget that I would spend through an administrative liaison who would do the routine administrative activities for the program.

I spent a year working with the administrative liaison who told me she would be leaving for a tenure track job. We got the forms and brochures designed, designed a lounge in the library, arranged for cubicles to be placed in them, and I began introducing the courses a year at a time. The first course I settled on was *Progress and its discontents*. This appealed to me because it embodied Freud's *Civilization and its discontents* and liberal

arts thinking from the enlightenment to the present in a one-year introductory seminar. I also introduced something I called a *Soiree*. This would create a community by having a shared experience of alternating speakers and musical performances. One week it would be a faculty member, an alumnus, or administrator and the following week a chamber group from our school of music. For the faculty speakers I chose the theme *My Beginnings*. I wanted faculty to tell students what they were like as students, what they were like growing up, and how they came to the work that made them nationally or internationally famous. For the music I instructed the performers to give two selections, one from the classical repertoire and one from a contemporary composer.

I was told by the committee not to teach in the program and make myself just an administrator. I rejected this advice. I felt it essential to teach in the first-year course so I could get to know each student as a person. I would learn how they think, speak, and write. Each seminar was to have two instructors, preferably not in the same field. That way a person from the sciences could read and discuss a text read by someone from the humanities or social sciences. We made the students write a four-page paper each week. They read primarily writers of the 19th and 20th century. We covered the 19th century in the fall and the 20th century in the spring. It was wonderful that first fall 1989 to read Condorcet and Rousseau, Goethe's *Faust* (both book 1 and book 2), Malthus, Godwin, Darwin, Spencer, Marx, Mill, and Hegel. Students also read Dickens's *Hard Times*, Whitman's poems, the lake poets, and Conrad's *Heart of Darkness*.

In the lounge I met the students when they studied and when they socialized. I added a microwave, a coffee maker, a small refrigerator, and a soda machine. We also arranged for the students to go on field trips, and we tried to make three trips to New York City a year. I used the *New Yorker* to identify exhibits that looked appealing and chose those that were also tied to what we were discussing in class. We used a chartered bus or got discount tickets on the LIRR and went in on a Saturday morning, spending the day in the city and returning in the evening.

The second-year course I wanted to be on the arts and humanities; the third year course on science, society, and values; and the fourth year course on global issues. I also wanted the students to do an independent project for their senior year and to present their work or performance at a symposium late in their senior year. All of these components were added in due course.

When the original administrative liaison left, another employed in undergraduate studies was assigned. She quit after some three months. She had two master's degrees, one of them in English, but she just felt uncomfortable with young people and preferred number crunching. That left me with a younger person who was her assistant. She was a graduate student who had married a faculty member and was raising her young family. She had put aside for some indefinite future her plans for a PhD in sociology. I liked her efficiency and her enthusiasm. I asked her to be the administrative liaison. She was happy to do so but after about six months she asked if she could change her title. "What would you like to be called?" "Director." I gulped inwardly and reflected on it and thought she needed the clout without a PhD to call on faculty and to negotiate with the Deans. I agreed. It was a colossal error on my part. It immediately set up a divided authority and set us into competition on who runs the Honors College.

Fortunately, the next five years worked despite that growing tension. I threw my energies into the program and made sure that I saw the students in both the dormitory and the lounge. I negotiated with the residency director to get a separate dormitory for the Honors College. As soon as one was renovated, I established an office there. That gave me a chance to see students outside the classroom. I learned that they had a lot of personal problems and by maintaining an open-door policy rather than formal office hours, students would pop in and I'd talk about anything. My philosophy was simple. To build an academic community I had to gain the trust of students. I genuinely cared about them and wanted them to know I was there when they needed me. I also wanted them to see a scholar at work. I was always writing, reading, or correcting papers in the office and whenever they came by, I'd drop what I was doing and talked with them. I made my students call me Elof and I would have done so with the first-year

class but my colleagues there wanted a more formal relation in the classroom.

I thought this was close to an ideal arrangement. As Master of the Honors College I would try to inspire students with a love for knowledge. These were already well-motivated and well-tested students, but as I learned long ago, the most talented persons are often the most insecure. Sometimes those insecurities can trap a person and stifle creativity. I wanted the students to know that they could get beyond that stifling emotionalism. I did not hesitate to let them know that “I had been there” when they talked about their miseries. I had used the *My Beginnings* series with a similar intent. I knew that our more famous faculty were likely to have neurotic and traumatic pasts and that if they were given a chance to talk freely with the students about their growing up, they would make it easier for the students to accept their own circumstances as part of the human condition and not some limiting factor in their development. This turned out to be true for most of those who spoke that first year including Nobelist C. N. Yang, Pulitzer poet Louis Simpson, and MacArthur Fellow and neurobiologist Paul Adams.

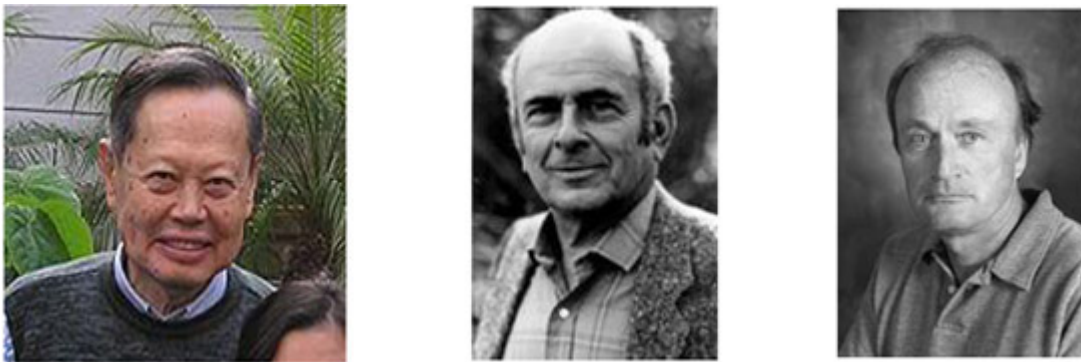


Figure 62-1

I introduced a “my beginnings” soiree to the Honors College and invited successful academics to tell the class what they were like growing up and going to college. From left, C. N. [Frank] Yang Nobelist in physics, Louis Simpson, Pulitzer Prize poet, and Paul Adams, FRS, a MacArthur Fellow in neurobiology.

I gave the Honors College at Stony Brook a lot of national recognition by talking about our program at the Lilly Endowment workshops and by giving a paper every year that I attended the National Collegiate Honors

Council meetings. Throughout those years I kept asking for a separate budget for the Honors College and never got it. Part of the difficulty was administrative turnover. The Office of Undergraduate Affairs (which kept changing its names and titles with each new director) had a lot of turnovers. In the years since I was recruited as Master, there had been five directors (under the title of Associate Provost or Dean). Most of them used the office as a way to launch a career in top administrative posts. This created a lot of confusion about who was in charge, what the priorities were, what the past commitments were, and how the office should be reorganized. New administrators like to leave some sort of mark. They want the good to add to their prestige and they'd like to dump the bad and the dangerous that threatens their status.

My downfall began when Ron Douglas became the Associate Provost. He reorganized the office and wanted to beef up the opportunities for minority students and he recruited an administrator from a historically black college to be his Assistant Provost. I had met the candidate at the Lilly workshops but didn't remember much about him. He told me when he was recruited that he didn't want to be type cast as a black guy who does black programs. He had ideas about undergraduate education and wanted to have more room for his creativity. Douglas agreed and inserted him as one more layer making the chain of command upward for budget requests and policy changes and additions from me to the Director, to the Assistant Provost, to Douglas, to the Deans, and to the provost. Whenever paperwork moves up such a chain it gets buried amid the busy work and priorities of the next layer of bureaucracy.

I spoke to the Assistant Provost in a couple of lengthy sessions and for the life of me could not understand what his vision was. If anything, he had none. What he did have was beliefs. He believed the individual did not count. It was the institution that mattered. The institution had to outlast all of us. We were nothing but mere cogs to make the institution work. He spoke in generalities. It was as if a university was made up of units, boxes, cubicles, offices, and titles. That the live faculty and students had unique personalities and were here to be served, to be taught, or to be creative, was either taken for granted by the Assistant Provost or did not matter.

I learned what the Assistant Provost's values were like when I dealt with students. Bright students are as likely to get into mischief and trouble as not very able students. All students at the age of 16 to 21 are vulnerable to life crises. Most handle it because they have parents, siblings, or peers that help them get through the turmoil of their teens and young adulthood. Some are not so lucky, and they are from troubled homes, have deeply conflicted personalities, or get so messed up emotionally that their grades suffer. Some are deeply idiosyncratic and want to do things their way. They are non-conformists. Some of our most successful faculty members were just like that. The highly creative are often plagued with miserable childhoods, unhappy relations with their parents, and social personalities that verge on the pathological. They can be loners or disruptive or just plain kinky.

I have a tremendous patience with such students. Some turn out to be just losers because their weirdness does stomp out their creativity and talents and they just drown in their miseries. Quite a few will rise above their despairs and imperfections. I liked to think of those as my special mission. I wanted to ease their unhappiness and make them sublimate their discontents. I wanted them to become productive by channeling that energy and finding a good outlet for it.

The Director did not have this patience. She was an administrator who liked rules and enforced them. Clearly one needs guidelines, and some conformity is needed to prevent an institution from bogging down into an anarchy of individuality which lacks common ground. I thought of my role as a Solomon to make decisions about students in trouble. One such student I will call Jonathan. He entered the Honors College as a "late bloomer." He had an excellent record as a mathematics major in his frosh year and I liked two things in his application. One was his love for singing in the university chorus and the other was his pleasure in being a juggler. It was unusual and I didn't want the Honors College to be a place just for conforming high achieving students. They are not as likely to be creative individuals. I had tossed out nerds who just couldn't get beyond their own weirdness, but in each case, I tried to help the student for a year or more before giving up.

Jonathan had problems writing his assignments. He had no problems doing his mathematics assignments. I talked to him about this problem. He had a lot of problems at home with his mother and his brother. They fought a lot. I'm sure in the dynamics of that situation each irritated the other and knew exactly how to set things off when things weren't going right. This in itself was not unusual. Many students have such troubles at home and deep sibling rivalries. Nor was it unusual that his parents had just gotten a divorce. A significant portion of college students have parents who have divorced. What was unusual about Jonathan was his resentment of authority. He had confidence in his likes and dislikes. He chose his courses to meet the requirements for his major and he read the university's guidelines and rules and traditions like a first-class lawyer. He shocked us by signing up for two classes at the same time, one of them a math class. The Director did not want to approve this arrangement. Jonathan said that there would be no problem because in mathematics attendance is irrelevant. All math teachers evaluate their students by their homework sets and their examination scores. We called his math teachers and they confirmed that this was so. Jonathan also pointed out that nowhere in the student's course book did it say that a student could not take two courses at the same time. It may have created confusion for computers but that wasn't his problem. That was for the administrator to solve.

Jonathan's personal problems overwhelmed him, and he took off a semester to regain his bearings. He became active in student politics and served as a Senator. He codified the election laws for the students. He ran for president of Polity and lost. I liked that leadership role and his sense of service. I also liked listening to him when he performed in Mozart's *Magic Flute* and when he sang in the University's traveling chorale group. When he came back, he had to take the third year course. The Director insisted he take the one in the Fall. He was reluctant to do so because it was given by a marine biologist and he wasn't interested. He wanted to wait until spring. The Director insisted and talked him into it. About mid semester I got a call from the instructor. Jonathan had never shown up. I spoke to Jonathan about this. He said the course was about garbage disposal and pollution. It was

intellectually dead, and he wasn't interested in it. He wanted to take the one the following semester which would deal with neurobiology.

The Director dismissed Jonathan and I went along with her decision because I felt he had a less than B average and was failing in his courses. Jonathan appealed the decision to the Director, and she rejected his petition. He then appealed to the Assistant Provost, and he rejected his petition. Jonathan then came to me and said he was going to appeal to Douglas. I told him he would get nowhere and asked why he wanted to appeal. He said he was booted out on wrong assumptions. He was not failing his courses. He was doing well in all his mathematics courses. He felt he gave a lot to the university and was getting a broad education through his courses in music and his interests in politics and law. He also felt the Director was not authorized to dictate when he should take a course in the Honors College. This diminished his right to choose, and a university should serve its students. It was red tape not academic thinking, he insisted, that determined the Director's values. He also knew she had made exceptions for other students and thus it was bias against him for giving her a rough time. I felt he had a reasonable case, and I wrote a letter and sent it to Douglas. I sent a copy to the Director. She had a fit and screamed at me like a fishmonger and humiliated me in front of the staff at Undergraduate Studies.

Douglas called me in. He said he was not going to judge the case by its merits, only by its procedure. He acknowledged that Jonathan was actually a superior student with a 3.5 grade point average (in the upper 20% of all students). He felt that each appeal went to the next person up and thus he had been judged fairly. Jonathan did not take that and slink away. He said he wanted to appeal to the President. I told him administrators stick together. It was hopeless. I wrote a letter anyway. Fortunately for Jonathan the old president was leaving, and the new president was coming in. Both were too busy to look at the appeal. They gave it to the provost. The provost was too busy running the nuts and bolts of the university during the transition so he gave it to his Vice Provost. She read the appeal. She called me up. We had served on the medical admissions committee. I told her Jonathan's story. "Do you like him?" "Yes." "Do you want him back in the Honors College?" "Yes." Jonathan was reinstated.

During this long appeals process, the Assistant Provost spent two hours trying to convince me that it was bad for morale of the Honors College to have Jonathan return. I argued that it was bad for their morale to throw out a student they liked and who asserted an independence of mind. The Director and I did not budge. Both Douglas and the Director were furious that his appeal had won out. The Director loathed me for my going over her head. I was finished.

Jonathan completed his courses, graduated, and to my delight triumphed. He took the Putnam examination, a national mathematics examination for prospective graduate students and scored so high that he got into the best math program in the country, Princeton, who awarded him a brilliancy prize. He did well there, and he enjoyed being a tenured academic teaching mathematics and publishing papers in his field. I was pleased that the Honors College was spared getting a reputation of choosing conformity over idiosyncratic brilliance. If an Honors College tosses out its future Nobelists, Pulitzers, Field medalists, and MacArthur fellows over procedural issues it is not worthy of the name. I know that. My students know that. Our most creative faculty know that. But many administrators, alas, do not know that. They often prefer those who don't make trouble, who don't consume time, and who don't force them to think about the purposes of the institutions and guidelines universities create.

A year after Jonathan had gone to Princeton, I was fired by the Assistant Provost. My only satisfaction in that torturous session was telling him that his loyalty was not to the institution but to himself and his career. I told him he would be a college president in less than five years. He left six months later to become a college president.

CHAPTER 63

IN LOCO PARENTIS

Until the 1960s many colleges assumed it was proper for the faculty and its administration to serve the role as substitute parents for its students. This meant the faculty took attendance, set the hours for staying out and returning to a dormitory, established visitation rights, determined policy on alcohol consumption on campus, and regulated the sexual privacy of consenting adults (18 and over). It also meant the faculty was willing to listen to students with emotional distress and to give advice on handling stress, broken romances, conflicts with roommates, conflicts with parents, and recouping from academic failure. Of these two aspects of what was then called *in loco parentis*, the rules and regulations have largely disappeared as concerns of faculty. They have been taken over by student handbooks issued by a dean or other administrator in charge of student life. In place of faculty lending a sympathetic ear, the universities and colleges have substituted guidance counselors, career counselors, psychological counselors, and dormitory counselors. Faculties largely do not want to be bothered with *in loco parentis* issues. They want the “professionals” to handle it.

I, like most faculty, want students to have autonomous lives on campus. They should be free to do what they want as long as it does not break the law (e.g., use of drugs, theft, rape, assault) and does not disturb the functions of a university (e.g., partying at night when other students wish to study, cheating and plagiarism, intimidating other students, racism). In principle this sounds reasonable. In practice it becomes difficult for several reasons. A campus dormitory is not like an apartment building in a city street. When you are in the city you live in a different culture with different

values. Neighbors know that turning on a hi-fi at full blast at 3AM will bring the police. They know that they should lock their doors and that they have signed a lease with a variety of stipulations that prevent disturbance, vandalism, and other wrongs. A dormitory is composed of teenagers and young adults. They are without adult supervision (many are not adults which in most states assumes reaching an 18th birthday). They stay up (most of them) until 2 or 3 AM. They socialize a lot and often leave their doors open. They have never tested their capacity to hold alcohol at home. They may experiment with marijuana to see what it is like. There is a peer pressure and conformity of teenage culture that is unique to that age. Too often, adults forget what they were like when they were at that age. What would be a crime invoking costly lawyer's fees and possible trial with jail for some inappropriate behavior in an apartment building or city street may not be looked on by a university with the same legal status and seriousness for infractions on campus. Most parents want their children to learn from bad experiences, not spend time in jail for stupid mistakes. A dormitory would be a DA's delight. Students are careless. They are not "street smart." They usually confess when caught doing something wrong. They are ignorant of their legal rights. They provide open temptation for committing minor crimes such as swiping books, credit cards, money, and stereos. They get drunk in social settings that the university usually tolerates (fraternities, sororities) unless mayhem or serious harm occurs. They damage property when they get angry or drunk. The university punishes these infractions with the hope that the punishment reforms the students. The student may be "sentenced" to community service, cleaning up graffiti, or helping out at a soup kitchen. If the student's act is more serious but not of a nature that community police should be brought in, the student may be suspended, expelled, or receive an F in a course.

Most of the public is unaware how old this tradition is. I have heard some harsh critics of university policy arguing that all students should be treated the same as citizens in the community. They should be arrested and dragged off in handcuffs for their crimes and punished in the same way. These critics interpret the university's *in loco parentis* policies as some sort of weakening of standards by mushy-minded liberals. They should read a

history of the university. These rules of student conduct were established by medieval universities in the twelfth and thirteenth centuries and they were negotiated to prevent town-gown riots for student infractions. The church recognized that younger people were more apt to be rowdy and they made sure the church, not the civil community, was in charge of handling the investigations, hearings, and punishments with the exception of those crimes that it deemed part of the civil authority to intervene.

I very much believe in that part of the *in loco parentis* tradition that assigns to the faculty the parent's role of listening, advising, counseling, and helping students in their times of need. I have often found this more helpful to students than their experiences with professional advisors, counselors, and similar agencies on campus. I am not opposed to such services, and I regularly send students to them when students have problems that I think deserve more attention and skill than I have. I also send students to such services when they are relatively routine and properly belong to such agencies, such as writing and computational skill centers, advice on majors in departments I know little about, or requirements for professional programs in law, medicine, engineering and other professions. The modern college and university depends on such skilled counselors who are knowledgeable and interested in helping students.

I am more concerned about something important to students. It includes helping them grow up or helping them get over a troubling doubt or failure that interferes with their academic life. Where most faculty shy away from learning about the personal lives of their students, I welcomed that knowledge if I could help the student. When I first came to Stony Brook, I had one student who did poorly in my course and she received a D. I learned after gaining her confidence that she had an unusual background. She had been pulled out of school when she was in the third or fourth grade and was semi-literate as a young adult. She had worked with an abusive parent and eventually gained her independence from him. She then obtained a high school equivalency education. She still was not able to read as well as her classmates, but she compensated by effort and time. I told her that the grade change would not be as valuable as her story. I told her I would write a letter of recommendation for her that she could use for her future

employment. I was confident from her motivation and work habits that each year would show a substantial improvement in her grades. A few years later I ran into her. She told me how much it meant to be told that people would look on her climb back to the literate world as something admirable. Before she had talked to me, she hid her semi-literacy as a mark of shame and felt inferior to other students. She said all her interviews were positive and people complimented her on her determination and skill to do well in college and in her career.

I had another student who did poorly in my class. He was Asian and, in his culture, going to seek psychiatric help was considered a sign of failure. He cried in my office. I learned over several visits that he had been a top student in his high school, and he had traveled a lot because his father was a diplomat. He applied for admissions to Oxford and was interviewed and accepted, a rare honor for an American-educated student. For reasons not clear to him or to me, his father refused to let him go to Oxford. He was told to go to Stony Brook instead. His grades collapsed as he dealt, not too well, with the conflicts he felt about his father's decision. He limped along through the next three years. I liked his compassion for others, and he had as a roommate a paraplegic student whom he fed, bathed, and dressed. He hoped to go to medical school but his grades were hopeless. He continued to take overloads of 20 or more credits against the advice of all who counseled him, and he never padded his program with easy courses. He completed a double major in biochemistry and engineering. It took a strong letter from me to get him into a graduate program. For years he had struggled on his own because his father was angry over his mediocre grades. I had faith in him. I knew that if he was bright enough to get into Oxford he was an unusually talented student. I had to keep reminding him that he needed faith in himself. The talent was always there but his insecurities, anger, and guilt were preventing him from succeeding. He went on for a PhD program in molecular pharmacology. He is a scholar with wide interests in everything. For many years he sent me a birthday card and a Christmas card. When he was in the New York area he gave me a call. I have told him many times that he does not owe me success. He owes himself the opportunity to use his talents as he sees best.

One student in the Honors College was a commuter student who began revealing to me and to the Director that he was having difficulties at home. He had asked me once to write a letter for him about a speeding ticket. In it I mentioned that he was taking a date home and he rushed home because he promised his parents that he would not be late. He told me that he could not use that letter. He said his mother would punish him if she knew he was dating someone who was not Jewish. As I got to know him better, I learned that his life was tightly regulated by his parents, mostly through his mother. Eventually he decided to leave home and with almost spy novel planning he arranged the hiding and packing of his belongings, the staging of a getaway car, and the detailed knowledge of when his parents would be out. He succeeded. His parents were furious. They blamed me and the Honors College for subverting their son. His mother called the college president and told him the Honors College was a cult that brainwashed her son. Her son had taken photographs of the pallets on the floor on which he and his brothers slept. The photos showed the stacks of newspapers saved over the years by his mother who filled the house so thick with possessions that it resembled a hermit's hovel.

His next youngest brother was a freshman at Stony Brook. He had an even worse relationship with his parents. They curtailed his extracurricular activities and he thus he lacked the roundedness we sought in candidates for the Honors College. At the time he applied we did not know the family situation. He began visiting me regularly. I learned from him that he was more defiant than his brother. Instead of sulking in secret as his brother did, he would yell back. His mother or father would then beat him. The crises continued at home, and he felt there was nothing he could do because they were paying his tuition. I sent him to a counselor who advised him to join the army. I began to get worried about his physical safety when he showed up with welt marks on his neck from being choked by his father. He had a scar on his tongue from a freshly healed bite that cut through it when he was punched in the jaw by his mother. On another occasion he got in a car accident, and he said his mother was so furious that she threw him against a wall and dislocated his shoulder. His mother forced him to say it was from the accident. He wanted desperately to leave home, but he had no financial

savings of his own. His parents had demanded and took all his bar-mitzvah money for themselves.

I tried to get him scholarship money based on need and was turned down by the administrator in charge who argued that it would not be fair to other students because there was no university policy for need based scholarships and there might be other students even more in need. I thought his argument was stupid and told him that made as much sense as sending back a boat load of Jews trying to escape Nazi persecution in 1939 because it would be unfair to all the other immigrants who wanted to come to America. I told him that if donors who gave for needy students knew that their money was tied up gathering interest and not being used, they would be furious.

I had to work out a different route. I personally went with the student to the student loan office and made sure I sat with him and I even told him to pull down his turtle neck shirt collar so the advisor could see the choke marks on his neck. I went with him to housing and made sure a room was made available for him. I made sure his tuition payment would be deferred until his college loans came through. I knew that if I did not do this, he would get a run around and delays or he would be told that his requests could not be filled. Few really care in the world of anonymous services for large institutions. Few like doing out of the ordinary things that take time or require lengthy explanations and extra calls for approvals.

Only when I made these arrangements did he consult with his brother and plan his departure from home. I made sure throughout his first year of independence that he got his texts for the courses and that his minimal needs were met. I wanted him to know that I would always be there, and I would go with him when needed if he were frustrated by red-tape. I became the surrogate father he lacked. He learned to be independent. He took charge of his life. He majored in art and took the courses in the liberal arts that his parents forbade him to take. He was an immensely gifted cartoonist for the student papers whose strip ran for two years. I took him to visit a former student who is a syndicated cartoonist. He graduated and has enjoyed a very successful career as an art director for a major entertainment

industry. Later he became a Vice President at a major corporation. In loco parentis is time consuming when students need the help and emotional support from faculty willing to extend themselves. I have learned over the years that there are many students who drop out, who never become free from the miseries of abusive parents, or who resign themselves to failure and settle for less than what their talents provide. I am not *Miss Lonelyhearts* and I cannot solve all problems for all students. But if I have helped a few, and that is perceived by others as unfair to those whom I have never helped, I do not for a minute regret the time consumed, the damage to my own reputation in the eyes of those who considered me Quixotic, or the financial expense it occasioned to have extended a hand of help to a few who came my way.

CHAPTER 64

BIOLOGY 101-102

When I visited the campus before moving out to Stony Brook, I spoke to the faculty about what they taught. I learned there was an introductory biology course that was taken by both majors and non-majors. Virtually everyone had tried teaching it but after a year they were only too happy to let someone else teach it. The course was disliked by students. I offered to take it over and totally revise it. At that time Stony Brook was a much-desired university by the students and parents on Long Island and in New York City. It took more than a 90 average for students to be competitive for admissions. As the science friendly school built between Brookhaven and Cold Spring Harbor, it sent a message to guidance counselors that this was a school for their brightest students, especially those whose parents could not afford to send their children to private college. Many on the faculty wanted to adopt the Johns Hopkins experiment of abolishing the introductory biology course on the assumption that almost all students in high school who were qualified to enter Stony Brook had an advanced placement course in biology and thus we did not need it.

I suggested that rather than abolishing the course, I would take it over and make it into a course for non-science majors. That way those coming in who had the advanced placement course would enter directly into genetics in their second year. They would have chemistry and calculus in their first year. The faculty was happy with that arrangement, and I began reshaping my UCLA non-majors TV course into a live course for the non-science majors.

My thinking was based on the hope that a well taught and stimulating course on life sciences for non-science majors would benefit the students

personally, would make better citizens, and would connect the life sciences to the humanities and social sciences. I would make it a truly liberal arts experience for the students.

I organized the course around five concepts. These were the broad ideas that made the life sciences distinctive as a science. The first was the cell as the unit of life. Few people appreciate their own cellularity. In a vague way they know they began life as a single fertilized egg (an idea that only stems from the mid nineteenth century). They don't always know that an adult has about 100 trillion cells. That's a lot and few of us can think of numbers that huge. Learning how cells work, how cells make more cells, and what type of damage or errors occur in cells can be illuminating to students. It would let them know why life is vulnerable and imperfect.

The second concept is the gene as the unit of heredity. Just as few people, outside of the life sciences, know much about their cellularity, few people have a reasonable idea that a sperm or an egg contains about 25,000 genes which specify or make a human being. Genes mutate. This would also enlighten students about the state of their health and the concerns they should have to minimize damage to their reproductive cells which house the genes for tomorrow's generations. It is also magnificent to understand how genes work and make cells, organs, and organisms possible. It is biological Rosetta stone to another world of immense fascination and importance.

The third concept is the life cycle. All organisms change through time. We begin our journey with a fertilized egg, undergo embryonic and fetal development, emerge as an infant, become a child, grow into our puberty, emerge as young adults, reach our peak at middle age, and enter old age and die. It's that simple. We are mortal and we die. Along the way a lot happens and some of us are fortunate enough to live an adventurous life in which we can both enjoy and contribute to life. Learning how the life cycle works is thrilling and hazardous. We run into problems of infertility, miscarriage, birth defects, premature death from cancers and other illnesses, and the biology of aging.

A major premise of biology since the 1940s is that we are complex molecular systems. Our biology can be described by processes familiar to

chemists and physicists. The field of molecular biology links the life sciences to the physical sciences. There is no unique “life-stuff” or vague “vital principles” that makes the material substance of the universe become living substance. The same atoms are in us and living systems use energy, make and degrade molecules, and have some fancy systems to make these molecules part of life. Once students learn about their molecular biology they can march up and down a hierarchy of complexity – from the nucleotide sequences of genes, to the proteins they make, to the components of cells they form, to the cells that work with a number of different such miniature cellular organ systems, to the tissues that have unique functions, to the collections of tissues in organs, to the collection of organs in an organism, and to the population of individuals who constitute a species, including ourselves.

The last broad concept of the life sciences is that species are not constant. They too change with time. The process that brings this about is natural selection and the consequences of natural selection are described as evolution. The farther back in time we go, the more different life looks. Evolution also teaches us to respect time. Most of us live in a small bubble of time that is about three generations old (our grandparents) and three generations into the future (our grandchildren). Before that we have history and after that we have the distant future. Our own life cycle of some 70 or 80 years give us this three-generation past or forward look. By the time we are adults our great-grandparents are dead. By the time we reach our 70’s or 80’s our grandchildren are barely out of high school. We don’t live long enough to have a four-generation perspective backwards or forwards in time. But biologists are scientists and scientists are very used to thinking of events ten, one hundred, or thousands of generations into the past. Some are not afraid to speculate about the future and I am one of those who is confident human beings will be around on earth and in many other parts of our galaxy over the next million or more years.

I divided the five concepts so that mostly I would cover the cell and the gene in the first semester and the remaining three concepts of the life cycle, molecular biology, and evolution, in the second semester. To engage the students, I wanted to make each concept dip into social controversies and

broad themes that the humanities deal with. If I chose current controversies, I knew I could bring the biology the students needed to know to think about the debates. My job would not be to tell them which side is correct. My job would be to show the biology that is essential to understand why we have a controversy. Their values would differ, and they would apply knowledge according to their values. Since this would be a large lecture class, I would remind the class that they themselves are as divided as their parents on these controversies. By introducing the biology, the debate is somewhat changed because it is more informed and has to deal with a biological reality that won't go away. This shifts the level of the argument from theory and ideology to a more serious reflection about the human condition.

I found to my great pleasure that students immediately responded to this approach. They talked with excitement to one another after class and in their dormitories and I got feedback from colleagues who overheard them, and I knew I was on the right track. Science has an obligation to make the public aware of how science touches our lives and makes us more sophisticated in dealing with it. Instead of propaganda ["living better through chemistry"] I gave them Promethean knowledge. About three or four years after I began teaching the course, I had a visitor to my laboratory. She introduced herself as an anthropology professor. She said she had to see me. "Do you know what mana is?" I had only the vaguest idea. She explained it is a primitive religious concept, prominent in the Pacific islands, that objects, living or non-living, have properties that are magical or endowed with power or enchantment. She said she had her class list ten things that had mana and she said very few students choose people, but my name consistently came up on those lists as having mana. That was why she had to see me. I don't know if my persona disillusioned her, but no doubt students respond to a charismatic presence. I have been swept away by great lectures I have heard and by musical and theatrical performances that certainly rank in my emotions as having mana. I would rate Roosevelt's fireside chats, Churchill's exhortations to the British public during the war years, and Martin Luther King's speech during the civil rights march on Washington as having mana.

I taught the course at 8:00 AM in the biology lecture hall. Students would sometimes come in with a robe over their pajamas to not miss lecture. The first two years I had a laboratory with the lecture course. This was a lot of work. I also had a one-hour discussion section and I wanted students to read short stories or essays that dealt with themes discussed in class. My teaching assistants were a mixed group. One or two loved to teach and many may have had a desire, but English was not their native tongue and they had great difficulty relating to American undergraduates who were not interested in science. The second year was somewhat better. I was assigned a young faculty member, Vera Farris, who would help out in the laboratories. She loved to teach and she was a parasitologist. She was an African American, a rarity in academics then and I was pleased that this would show my students that scholarship was not limited to white men.



Figure 64-1

Vera King Farris was my course administrator during the first few years that I taught Biology 101-102. She went on to become President of Stockton College in New Jersey.

We discussed the inadequacy of the graduate teaching assistants. The department thought this would be a good opportunity for the students to learn English. Fine. But if they weren't doing a good job as teaching assistants, why damage the undergraduate courses in the process? Vera and I discussed using undergraduates as teaching assistants. I sounded out my colleagues. There was some reluctance because of a fear they would do favors for friends and thus lots of restrictions were suggested. I felt this was a mistake and I built a case that teaching undergraduates how to be teachers would benefit them whether they went into teaching careers or not. They would gain a lot in speaking in front of groups, in having grading responsibilities, in tutoring those who had academic difficulties, and in

learning to express themselves clearly. I designed a three-credit course and met all the objections of the course committee that evaluated it, and soon found myself swamped with applicants. The department loved this because my course freed up the teaching assistants for the advanced courses where students were more skilled in their study habits.

I taught Biology 101-102 ever since. I never got bored teaching it because I never used my old notes. I always wrote my lecture outlines fresh for each lecture I gave. I also was correct that the social controversies would change with new technologies and new applications of knowledge. Today family planning is hardly a controversy and only the methods of birth control still have some controversy left to them, especially those agents that are abortifacients. Population is also less controversial today than 30 years ago no doubt because the rate of world population growth is declining and people realize that as women are educated, as public health is introduced, and as opportunities for children to be educated increase around the world, parents choose to limit the size of their families. New technologies now make prenatal diagnosis possible and infertile couples have many exotic options to use including in vitro fertilization.

My course stimulated other science departments to introduce non-majors courses and to adopt undergraduate teaching assistants. It allowed me to reach biology majors by having some of them serve as undergraduate teaching assistants. They were thrilled to get the human applications and the relation of the life sciences to the liberal arts. Many of my students went on to teach, practice law, enter businesses, and find careers quite removed from the sciences but I would get cards and notes from them or meet them at airports in other cities or in the streets of Manhattan and I would find them appreciative of how the course influenced their careers, their family decisions, and their own health.

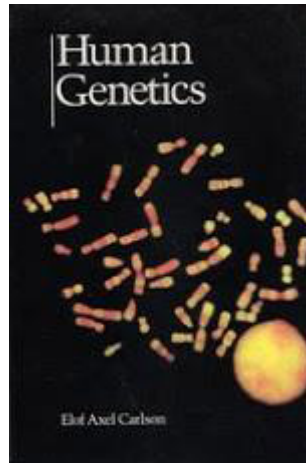


Figure 64-2

*D. C. Heath published **Human Genetics** which I used as a text for my Biology 101-102 course. I had to drop some chapters and add others to work out this compromise because my course was too idiosyncratic for the market at that time.*

CHAPTER 65

LIFE LINES

What do you do when you are fired as an administrator and are about to turn 65? Retire? Not me. I loved my work. I loved teaching and being around students. I would probably have had more take home income by retiring than by working, but that's a point of no return in the university. It really is "you can't go home again." The retired are put out to pasture to do other things. They are exploited with appeals to their boredom to come back to teach courses at laughably low prices. Only those who take charge of their retirement and want to do other things can enjoy a forced or chosen retirement. Fortunately, the laws protect older workers and if they are competent, they cannot be throw out.

I rejected sulking and vengeance. Those are self-destructive ways to nurse hurt feelings. I believe in Freudian sublimation. Harness the energy of discontent and make civilization out of it. I preached that to my classes for eight years in the Honors College. I believe in "the work cure." I began to write up a storm. One of my writing projects was a newspaper column. I call it *Life Lines*.

I had thought of a newspaper column about 20 years earlier and prepared two or three items on science and sent them off to a publisher on the East End of Long Island on recommendation of an acquaintance. Nothing happened and I stuck the articles away in a folder and they exist somewhere in a box in my garage. When I set up the Honors College, I thought it would be nice for the students to have a newsletter about their activities each month. I asked the students to come up with a name. Arthur Bozza, one of the students, had good enough sense to keep his fellow students away from the temptation of cute titles (Nerd News, Elite Bleat,

etc.) and they selected something representative of the lounge where they socialized. They called it *The Cubicle*. Arthur became the editor although he did not himself have a passion to write. He was good with computers, and he could organize things efficiently. We met regularly and planned the issues. I wrote a column for it, *The Master's Voice*, which permitted me to bring controversial issues to their attention, to use it as a moral forum and a reminder of their need to examine their consciences, and to share episodes out of my life to let them know that some of their problems are not unique. I also wrote up the "My Beginnings" talks. I tried to get students to debate each other in columns on issues of the day. We had some liberal students and some very conservative students. I wanted both voices to be heard. A few tried humor columns and some did reviews of musical events we attended.

It was a lot of work for Arthur to put it together and to ride herd on students who didn't turn in assignments on time. He did so all four years of his stay in the Honors College and I was fortunate to benefit from his talents. We also struggled with the conflict between putting out a quality publication and respecting the individuality of the contributors. I did not want to be a censor and only for thoughtless jokes and comments that would be interpreted as sexist, racist, or hurtful to another student did I or Arthur change the wording or delete a phrase from a contribution. I allowed some criticism of the Honors College or the University because that was appropriate. If free speech were absolute, no publication would be respected or read in a state supported university if it created outrage with anti-Semitic, racist, or similar thoughtless commentary. It would be like committing social suicide.

On occasion I contributed invited articles to the student papers, including a series of two or three that appeared in *Black World*. Its editor was a student in my Biology 101 course and she thought some of my lecture topics would make good columns for her paper. I liked writing short pieces that had something to say with a literary style that stamped them as engaging to read.

This became my summer project after leaving the Honors College. I started writing *Life Lines* columns and limited myself to one page single spaced or about 500 words. That's a challenge for long-winded academics. They like lots of time and space to think, to speak, and to write. They are not like poets who have to constrain themselves to a few dozen words. I began to jot down topics, and I did so whenever I had a snippet of time free. It might be on a train to New York City. It might be waiting in a dentist's or doctor's office. It might be during lunch while waiting for a student to show up. My most important asset as a scholar has been managing small chopped up bits of time and using them effectively. I can switch thoughts and topics instantly and go back to them hours later whenever another opportunity occurs for a few minutes of time between activities.

I wrote about 25 of these columns and in September, I slipped them in a large envelope with a covering letter to the publisher of our local paper, Leah Dunaief. I had met her several years earlier at a ceremony where I was honored by the *Village Times* as one of their Educator of the Year recipients. Nothing happened.

I then tried marketing them through my literary agent, Jack Scovil, who had been recommended to me by Carl Sagan. Scovil said that it would be a difficult sell and he didn't want me to build up hopes. It is very difficult to become a syndicated newspaper columnist because there are so few who have national columns. As predicted, nothing happened.

About January, I got a letter from the editor of *The Village Times*, Marie Murtagh. She said Dunaief had buried my letter and columns under a pile of correspondence and had just opened it. They liked what I was writing and if it was not too late, they would like to publish them every other Thursday starting sometimes in the Spring 1997. I was delighted.

That inspired me to write some more, and I quickly churned out another 25 columns which would put me two years ahead of schedule. I did not want that nightmare of writers and cartoonists to dog me – the deadline that must be met. My brother Roland had a similar compulsion, but he applied it to the world of institutions. He was always a month or two ahead on his rent, electricity, gas, and other bills. He wanted to be owed rather than face

the prospect of being in debt. My aversion to the world of finance did not work that way. My compulsion was for getting examinations, reports, minutes, and other bits of my career prepared far in advance. I had learned early in my teaching career never to depend on communal machines. Whether they are Xerox copiers, mimeograph machines, electric staplers, or university service units, they are subject to failure. To plan to run off an examination a day or two before the exam is courting panic. Not only is there the annoyance of waiting for others and inconveniencing others who need those facilities, there is the high likelihood that overuse will cause the machines to break down, the paper to run out (with no one around to provide more), and other horrors in the works.

I write most of the columns on a theme that I hope will strike the reader as interesting. Part of this must stem from my fascination with Paul Berdanier's *How it Began* comic strip. Part of it stems from my intense curiosity as a reader of the *Britannica*. Many of the themes come from my lectures. Others are new and I have to do some research to dig up hard facts. One such article was on George Washington. Several years ago I read a letter written by his three physicians who attended him on the day of his death. It was reprinted in a history of American medicine. I was struck when I read it by the many bleedings he had. There were at least five and possibly one or two more. Each had about 12 or 13 ounces of blood per bleeding. Washington got sick and died within 24 hours. He probably had a strep throat, but I suspect his death was assisted by the severe dehydration he experienced. In addition to all the blood lettings, he was purged by emetics and enemas. They blistered his skin and made him smell vinegar vapors. It must have been an uncomfortable way to go. I also used Washington Irving's biography of Washington to get the details of his last days. It was a nice excursion into the past and added a human picture of Washington that we usually lack when we only know him as a portrait on our dollar bills and as a General leading his troops through bitter years of struggle.

By giving the editor about fifty essays to choose from, I was as much surprised as my readers about what article appeared on the Thursdays that carried my column. I got nice feedback from people who knew me, from

my colleagues, and from strangers in the local supermarket or other places where I happened to shop or browse. For me writing the column is yet another way to teach. This time I have a far larger audience than my classroom. I have long committed myself to making a broader audience than science majors aware of what science is and how it works and how it affects our lives. In a democracy we want ourselves informed on issues that are important to our health and that shape each generation's perception of the human condition. Without putting science in a form that can be understood by the general public, such knowledge remains spotty and often misrepresented. I do not write to please scientists. I write because the pleasure of knowledge should be shared. Scientists have an important thing to say about the universe and how it works. Learning bits of that is as important, in my mind, as reading great literature, knowing a good deal of our country's history, and feeling at home in the arts. Fortunately my column continues in the north shore newspapers while I live in Bloomington, Indiana. By the end of 2016 I will have written more than 400 Life Lines columns.

VILLAGE TIMES
PCI

JULY 30
1998

Science

Welcome to Maxwell Hawkins Carlson, American

My ninth grandchild arrived June 22, 1998 in Pasadena, California. I was visiting my closest friend, Dr. Peter Gary, a composer in Victoria, British Columbia. He is a Holocaust survivor and had studied with Kodaly and Bartok. My wife, Nedra, was already en route from Vancouver to Los Angeles when baby Maxwell arrived a week early. His mother, Lyn Yasumura, MD is an obstetrician and this was her first child although she has delivered over a thousand babies for other women. His father, Anders, is finishing his Ph.D. in structural engineering at Caltech. Anders and Lyn attended Ward Melville High School in Setauket.

Baby Maxwell, you are my mother's 52nd descendant. She was born in Bound Brook, New Jersey, of immigrants from Tarnopol, in what is now southern Poland. You are my father's 17th descendant. He came from Stockholm, Sweden and settled in New York City after a few years in the merchant marine. You have eight cousins on your father's side and none yet on your mother's side. You are a melting-pot American who combines Swedish (one-eighth), Japanese (one-fourth), Polish (one eighth), German (one fourth), English (one tenth), Welsh (one percent), Scottish (one percent), and French (a trace) ancestry. Your ancestors are Lutheran, Baptist, Jewish, Huguenot, Catholic, Unitarian, and Buddhist.

Four living relatives also have your Y chromosome. Three relatives have your mitochondria. You have about 300 genes (out of 75,000) of your ancestor, Andrew Babcock, who helped make the links of the great chain that stretched across the Hudson River near West Point to prevent the British navy from supplying its Canadian forces during the Revolutionary War. Seven genera-

tions ago your ancestor, Israel Dock Johnson, fought for the Union during the Civil War with his Indiana regiment and he survived the rigors of a Confederate prison camp by digging up and eating raw sweet potatoes. You have about 1200 of Dock Johnson's genes. One of the slaves freed during the Civil War was the grandfather of Evelyn (Billie) Hawkins, whose last name is now your middle name. She was your father's fifth grandparent and she had adopted our family before your father was born.

You bring together by your birth four very different families. Your Japanese-American grandfather, a professor and physiologist, was American-born and raised in New York and California until World War II when he was sent with his parents to an internment camp in Idaho. Your maternal grandmother, a college administrator, was born and raised in New York of German-Americans whose ancestors lived many generations in Virginia. Your paternal grandfather, a professor and geneticist, grew up in the slums of New York. Your paternal grandmother, an in-vitro fertilization embryologist, grew up in the small towns and farms of Northern Indiana. What we all have in common is our designation as Americans.

From yesterday's immigrants to those who have lived in North America for a dozen or more generations, we have enjoyed the benefits of freedom (sometimes denied) and opportunity (sometimes thwarted). Enjoy that good fortune, Maxwell, and celebrate the many components of your ancestors who each helped make America the world's most admired concept.

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Life lines



BY ELOF CARLSON

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Figure 65-1

Life Lines column in the Liesure section of the Village Times, Setauket for July 30, 1998 using our grandson's birth as a theme on the American melting pot in our family. I have written more than 400 columns since 1997.

CHAPTER 66

MOTHERS IN LAW

I am not sure why there are so many mothers-in-law jokes. No doubt some do try to control a daughter's life and make her husband feel uncomfortable. Mothers-in-law can also remain attached to their sons and give a daughter-in-law grief. That was never the case with me. I liked Rose Zuckerman and I enjoyed Florence Miller. Academic families are like military families. They move to several institutions and exactly where they'll be is not entirely of their choosing. This makes it easier to have relatives who are seen only during vacation times. Perhaps mother-in-law jokes abound when she lives in her child's town. I am sure my mother was as heavy duty a burden as any daughter-in-law could imagine.

Rose Zuckerman was born a Bernstein. Her folks came over from Russia in the 1890s. Her father was a liquor salesman, and he skirted the law during Prohibition supplying speakeasies. There were four Bernstein siblings. Rose was the oldest. She had two sisters, Pearl and Marion, and a brother, Emanuel. They were typical first-generation American immigrants and they shifted rapidly to middle class American values. Marion married a dentist. Pearl was widowed twice and worked to support herself. Manny had a difficult marriage and wanted a divorce. He was the only Bernstein who had changed his name. He became Manny Brooks. He couldn't get divorced in New York which had strict laws in those days with adultery as the only grounds. His wife had been faithful to him. His two sons were turned against him and despite the bitterness with their father, they did well. One, James L. Brooks, went on to become a well-known producer of Hollywood films and TV hits, including the Mary Tyler Moore show and the movie *Terms of Endearment*, whose rather shallow biology teacher

husband of the heroine who died of cancer made me wonder how my relation with Helen was filtered through my former wife's family. I like to think of it as pure coincidence because I squirmed more when I saw Marlene Dietrich and Erich von Stroheim in *My Blue Angel*. That failed biology teacher made me feel as terrified as did Grimm's fairy tales in my childhood.

Rose was an excellent cook and at her apartment on Newkirk Avenue in Brooklyn I would enjoy sitting with her and watch her prepare chicken soup, set up a roast studded with garlic cloves, and lovingly coat a leg of lamb with mace and other spices. She spoke in a cultivated voice, something she acquired as a child in reaction to the "greenhorn" reputation of children of immigrants. She was determined to have perfect diction and she did. When she married her husband, George Zuckerman, an immigrant from Russia, and a child of a large Orthodox Jewish family with a stern father, she maintained an interest in the theater and played in several amateur groups in Tulsa, Oklahoma while her husband was in the oil industry as an engineer. He had gone to Cooper Union and had taken an interest in science when he was a child. He told me that in his Russian village when the first phonograph was played and he heard a human voice singing, he lifted the lid of the box containing the wax cylinder and expected to see a midget hidden inside.

George Zuckerman was somewhat deformed with a curvature of the spine and a small stature. My brother Roland always referred to him as Dvarian, the Swedish word for dwarf. He was also partially deaf from otosclerosis, a condition he passed to Helen but not his older daughter, Judy. Rose enjoyed playing Scrabble. She liked to read *The New Yorker*. She regularly got the *New York Times*. She had no college education, but she did like to cultivate her mind. Her Judaism was partially observant. She did not keep a kosher home, but she did not buy pork products. She and her husband did not observe Jewish holidays nor attend a synagogue. They both identified themselves as Jews.

Rose was theatrical in her gestures. She liked to sound as if she were in a theater, much to the irritation of her children. Both of her daughters were

rebellious, but both were scholars. Judy converted to become an Episcopalian and ended up in Texas where she became a professor of mathematics at the University of Texas in Beaumont. Helen was without a religious identification when she married me (although we were married in a Jewish temple). She became an Episcopalian after we were divorced, and she had Claudia baptized along with her. Helen did not stay an Episcopalian very long. As Helen became ill with lung cancer, she turned to the occult and took up astrology, casting horoscopes, collecting astrology books and ephemerides to calculate very elaborate charts for those she knew.

Rose outlived her husband by some 20 years. She was disappointed that her children had abandoned Judaism. For years she had worked as a school secretary, and she had faked her age so she continued to work another ten years past her mandatory retirement. She was active and would visit us every Thanksgiving or Christmas. When she got to be in her mid-eighties, she developed Alzheimer syndrome and by the time she turned 90 she knew no one except her surviving sister Pearl. She lived another five years before finally dying.

Florence Miller was the daughter of farmers, and her ancestors came as pioneers to Indiana. One of her relatives was an anchor maker and blacksmith who helped prepare the chain that was stretched across the Hudson River to block the British fleet from navigating that river during the Revolutionary War. His wife was cheated out of her land after he died, and she sailed on a flatboat down the Ohio River to go west. The family kept moving from Pennsylvania to Kentucky or Ohio to Indiana. They settled in the Fulton County area in the 1840s and some served in the Civil War. One was killed and his brother survived as a prisoner of war. His Civil War canteen was hung on the wall of my mother-in-law's living room in our house in Setauket.

Florence had a sister, Shirley, who lived to be 95 and a brother, Robert, who served in World War II and who died of diabetic complications following surgery a few years after starting a family after the war. Florence married another Hoosier with distant roots into America's past, Harold Miller. He was the oldest of five children and their father was a self-

ordained minister who did a riding circuit and who managed to get people to invest in business projects that more often than not failed. With one exception he skirted criminal prosecution for what his unhappy investors described as shady deals. He prevented his son Harold from going to Purdue on a scholarship and insisted he had to work the farm instead. It made Harold an atheist. He hated the hypocrisy of a born-again Christian minister who lived a life of deception. Harold's father left his wife and five children and remarried for money, used it up, divorced again, and remarried again. He spent much of his life borrowing money to pan for gold. He was convinced that somewhere there was a lode of gold waiting to be discovered that would make him rich. He never struck it rich, but he did live to be 100.

Florence and Harold had a happy marriage and despite the traveling life that got them to all parts of Indiana, they enjoyed raising their family. We loved coming out to visit them from Canada and from California. I loved visiting the farms of their relatives and participating in family reunions with old fashioned July 4th picnics and homemade ice cream cranked by hand. It was a thrill to see the log cabin that Florence's grandmother lived in now a part of the Fulton County Historical Society. My father-in-law liked to take me and his grandchildren fishing in the lake and we would then feast on the catfish and sunfish we caught.

I was in Bloomington working on the Muller biography when Nedra called me shortly after I arrived. Her father had died at work in South Bend. I made the arrangements to have his body moved to Rochester and I headed there to meet my family. I was the last of the family to see him alive. I had taken him to the airport the day after Christmas so he could go back to work in South Bend as a machinist. My mother-in-law was devastated by his death. It took a long time for her to heal. She felt she had not spent enough time with him and abandoned her friends. Instead she took up pottery and brought a kiln and soon had a store and was teaching children and young adults as well as some old timers to make porcelain and other ware that could be used for Christmas gifts. There were cups, tea sets, Nativity sets, commemorative plates, book ends, and lots of items she obtained as molds so that the green ware could be removed after the poured slip hardened.

After firing, the items were painted and glazed and fired again, getting different colors and effects that expressed the artistic tastes of the porcelain artists. When we visited, she taught us to make our own porcelain wares.

All her life Florence collected antiques from her relatives. For each ancestor who died she had a chair or a chest of drawers, or some other items to remind her of that farmstead or distant pioneer. She filled her garage with these mementos and then when she moved into her mother's place across the street and rented out her other house, she did the same with her mother's garage. When she moved to our place she emptied out her garages and selected some items to bring to Setauket, NY and some items to fill her daughter Sonya's house in Ocean Grove, New Jersey. She then spent months sanding these items, stripping the furniture of their layers of paint, bringing out the natural woods, and oiling them to a gleaming perfection. She taught herself upholstery and she wove the rattan fibers to put bottoms in her wooden chairs.

My mother-in-law's creativity astonished me. So did her energy. In her mid-80s she would go out to garden, yanking weeds, reclaiming gardening soil from the scrub, and lovingly making her flowers flourish in an outdoors area for herself. There in the summer she would sit, watching the birds at her feeder, enjoying the flowers, many of them from cuttings taken from her gardens in Indiana, and figuring out what to plant next.

She returned to her quilting after some fifty or more years in which she had left that skill. She designed her own blocks and figured out how to quilt a church glass window and other surprising motifs. She hobbled about on two canes and washed the dishes to show her appreciation for us taking her in and showed her determination not to let old age and crabbed bones limit her lust for life. She lived strictly by a code of authority. A mother-in-law does not tell her daughter how to run her household. She was happy that her two daughters did well in their careers and that both gave her sons-in-law who have appreciated her and given her seventeen great-grandchildren. We arranged for Florence to spend her last years in assisted living at Wesley Manor in Frankfort, Indiana, a small town near Michigantown, Indiana where her older sister also lived and then moved to that facility. We visited

them while both were alive in their mid-nineties. Florence died in her 95th year and her sister outlived her by six months, dying in her 97th year.

CHAPTER 67

DISTINGUISHED TEACHING PROFESSOR

Until my senior year of high school, I was terrified of being called on in class. I once peed in my pants in third grade when called on. Most of the time I tried to hide behind other students and hoped the teacher would not call me. When I was called on, I usually gave the right answer so that immunized me from being called on again for most of the class period. About fifth grade I was in a school play in my Audubon Avenue elementary school, PS 189. I had to memorize a four-line poem. I recited it at home hundreds of times and brute memory for its own sake was always repugnant to me. It didn't seem like learning. It was a stuffing of my brain, and I resisted that authoritarian imposition. How I wish it had been a poem of Whitman's instead that I could reel off to charm my fellow students. No such luck, it was plain old school child doggerel:

I am Caution, quite a name,
But I deserve it, for I claim,
That accidents there would not be
If children would consult with me.

My moment of emergence came in Dr. Sper's English class in high school. I had to present a topic to the class. It was on Pepys's diaries. My love for Pepys outweighed my panic syndrome and I shot forward to the class and recounted the London plague episodes and the London fire of 1666. I tried to make Pepys come alive and my enthusiasm held the attention of the class and I felt for the first time that rush of pleasure that

fills the body when a lecture is well received. It is less a consequence of the audience's rapt attention (although that helps) than the internal feeling of being your own best audience.

I knew after a week of teaching my first large lecture class at Indiana University that I was wedded to teaching. Good teaching is similar to good acting. You have to feel it and enjoy it. I like to think of it as improvisational theater. A major difference between acting and teaching is the significance of the skills involved. For acting they are essential, and much attention is paid to how to get each line and direction converted into a seamless reality that captivates the audience and penetrates deeply into each person drawn into the play. For teaching they are rarely invoked or studied. Most good teachers stumble on some effective ways to teach. They are taught *not* to be entertainers. There is a fear among academics that their colleagues will see them as substituting form for substance, technique for knowledge. I am sure many a gifted actor will say that's just bad acting. The best actors don't look like they're acting. It is also difficult to convey material that is abstract, highly factual, or very remote from human experience and do so with passion or aesthetic thrill. Some do. Those are your gifted teachers.

After Professor Breneman taught me what to do and analyzed my errors in my first week of teaching, I quickly took over and used my skill as a scientist to investigate my lectures. I tried to figure out what to do to establish eye contact, to modulate my voice, to learn to repeat in a new context to capture those who didn't get it without boring those who already knew it. I learned to connect abstract ideas to concrete experiences in the student's life. I learned stage presence. If I wanted to stress a point, I could build up to an idea and explode it out in its full fury to make it enter the class. I listened to the sounds of silence and differentiated them. There was the hushed quiet of rapt attention; there was the deadly quiet of a lost class, buried in the blizzard of facts and abstract ideas they failed to grasp. There was the murmuring of approval when an idea resonated in the class; there was the murmur of confusion as students whispered to find out what they missed. I trained my eyes and ears to become as aware of my class's needs as a mother listening to the sounds of her baby.

At Queen's University the magic held. Students loved my lectures and every once in a while Joe Lucas would tell me the students "floated out of the lecture room in ecstasy." I learned to be a story teller. There were stories about genes, about chromosomes, about radiation, about mutation, about birth defects, about the process of becoming, from a fertilized egg to a bawling baby. All of life became a series of stories. I was Scheherazade, and I ended my lectures with a hint of what is to come, and I began my lectures with a quick synopsis of what they had learned and every course became "one thousand and one nights."

When we were at Wood's Hole, I received notice of my first teaching award. I was chosen by the Academic Senate for UCLA's Distinguished Teaching Award. They gave one each year. It was a modest award of \$500 and a silver medal large enough to be placed on a Lucite base. We used the money to fly back to Los Angeles to attend the award ceremony. It was given during the Alumni homecoming celebration and most of the activities were celebrations of famous alumni, like Jerome Hines, who came back to receive their accolades from their classmates. Hines made the alumni study their finger nails in discomfort as he praised Jesus for the award. He was a born again Christian and as a star of the Metropolitan Opera he was very different from the Chemistry major he was as an undergraduate and as the secular star his alumni hoped him to be. They got a sermon instead. I was uncomfortable, not from Jerome Hines, but from the alumni and the ostentatious parade of wealth and power they exuded, especially in their indifference to what faculties think a university exemplifies. Theirs was a college of athletic achievements, business success, and the upcoming overthrow of the Great Society by a world in which money was America's meaning. I felt out of place and the award seemed shallow in such a setting.

When I came to Stony Brook, I transformed the teaching of the introductory biology course. By creating a non-major's course, I had an opportunity to reach out to the decision makers of tomorrow. I loved my audience. The course was well received. In 1972 my name was submitted by President Toll for a national teaching award. Some four hundred schools were invited to submit a single name from each school. I made the first cut, and the top 40 candidates were individually studied by a team sent out by

the Danforth Foundation. The representative sent to Stony Brook interviewed faculty and students. He attended some of my lectures.

I received notice about a month later that I was one of twelve recipients of the Harbison Award for Gifted Teaching. It came with a certificate and a tax-free check for \$10,000 (a good sum of money then) which would be presented at a ceremony in the Stanley Hotel in Estes Park, Colorado. Nedra and I were thrilled, and the ceremony was a festive occasion. It turned out to be the last year they gave the awards. Originally the Danforth Foundation hoped the national awards would gain a good press, like the Pulitzer Prizes. In fact, it was listed in such places as the *Encyclopedia Britannica Yearbook* among national awards. During one of the early years, President Johnson, himself a teacher, gave the awards in the White House. Somehow teaching fell out of favor with the public and its coverage by the press. When the Danforth Foundation weighed the costs of selecting the winners and holding a ceremony and the paucity of publicity they got for good teaching, they dropped the program.

Locally, the publicity was much better, and my colleagues were happy. I was also pleased because the national recognition made my contributions to the department more acceptable. Until then there was a lot of mixed feeling about my having been recruited to Stony Brook. Why take a full professor who isn't going to do research with graduate students when you can get one or two young assistant professors who are raring to go on their research? It's a good argument. I had to prove myself and my worth to my colleagues. I'm sure I did. I gave the department a respect among the students, alumni, and other departments. Soon the chemistry and physics departments were adding courses for non-science majors.

The next year my name was submitted for a new class of academic titles established by the State Regents. The Distinguished Teaching Professors would be a life-long recognition with a title above that of a full professor (who has the unmodified title, professor, instead of the adjectives assistant or associate attached to that name). I learned through the grapevine that the committee decided not to nominate me because I had already received a national recognition. Teaching was not well recognized academically, and

the honors should be spread around. They nominated someone else who was not chosen by the state-wide committee. President Toll was furious. He considered the faculty reasoning stupid; it would be like not nominating candidates for a Nobel Prize because they had received Lasker or Fermi Awards.

In 1974 I received the title of Distinguished Teaching Professor. There wasn't much of a ceremony in those days. We had a dinner at the President's house and those receiving major honors that year were given a handshake. There was no medal and no certificate. After all, it was a promotion. But I loved the title. I have used it as I hope it was intended. It was a way to tell my colleagues and correspondents that teaching is recognized, and good teaching is an academic value. It also told the recipients of my letters that New York State recognized excellence in teaching as it does service and research, which also have a Distinguished rank above the full professor.

Not all faculties agree. I once gave a talk at Brown University and to my surprise the first question asked of me, was why I had that title. The professor who asked told me that it was hard enough to become a full professor at Brown. Why would anyone want to torture faculty by adding a rank above a full professor? One could raise the same question at private schools that have "name professorships," where some millionaire's name (or his and his wife's) are appended to the title of professor. It is well known that such name professorships carry a higher salary and are given as prestigious awards to those who publish a lot or whose work has national or international recognition. Of course, unlike full professorships, the rank of distinguished professor in its various forms is not a departmental decision but a university or statewide decision and it has much more of an honor status than just another rung in the ladder of academic success.

It took quite a few years before we had a "critical mass" of distinguished teaching professors. Jonathan Levy took the initiative to set up a council of distinguished teaching professors to initiate programs and comment on the needs of undergraduate and graduate teaching on campus. It is one of the duties that the state asked of those who held the title.

There are some difficulties with the use of this title to encourage good teaching. It demands that the person also be a well-recognized scholar. Few receive the full professorship without a long career of publishing and establishing a reputation as a scholar. This closes out outstanding teachers who do modest amounts of research and who are tenured. They will never get that title. There is also a growing trend to focus on measurable impacts of teaching through service on national or international programs that foster teaching. This would make the award difficult or impossible to attain for a superb teacher who has no interest in promoting good teaching off campus but who is outstanding in developing new courses and doing these with brilliance on campus. Titles get corrupted by the values that institutions rate high. Unfortunately, even those who determine who gets great teaching awards and titles are often more swayed by how the candidate ranks among colleagues here and elsewhere than how the candidate ranks with the students. Student input is limited to not very effective machine graded forms that students fill out and occasional letters solicited from students who worked with the professor as a scholar, and this may not recognize those who are most influential and appreciated among the students.

CHAPTER 68

MEDICAL SCHOOL ADMISSIONS

I was a premedical advisor for two years at UCLA. I interviewed well over 250 students a year. I did all the interviews, and I wrote all the letters for the students. Most schools don't do this. They use a committee, and the premedical advisor writes a composite letter. This shares the work, but such letters often have a committee quality of formula phrases and impersonal tone. I became the premedical advisor because I needed the money with a growing family, and I was already writing abundant letters on behalf of students in my courses.

I enjoyed the experience. I learned quickly how diverse premedical students are. I was impressed by the idealism of those who had served in Peace Corps or other volunteer agencies to help people who were sick. I realized how many were themselves stricken by illness and had survived through good medical care. There were also those who were minimalists, and I didn't care too much for them. They just did what was expected and they could be dull interviews with nothing to say about their well-charted lives. A few were in active revolt against their parents. I remember one student whose ancestry went back to the 1600s and whose last name had tagged to it the Roman numerals XIV to remind him and his long list of ancestors that they had to live up their illustrious ancestor, a household name to American history. He spent most of the interview looking at his shoes. He had a crummy average. He had poor self-esteem. I asked him why he even bothered applying to medical school. His mother made him do it. He hated taking premed courses. I gave him some advice. I told him to go to New York and to get any job. I told him to run an elevator or wash dishes. I told him that a year away from his mother would be the best thing

he could do for himself. He did. A year later he showed up with a bounce and considerable enthusiasm. He loved New York. He met his fiancée there. He was now retooling for medical school. I don't know if he ever made it, but he was certainly now his own person.

I realized how difficult it was for students who had severe problems at home to talk about them. They usually had long ago abandoned the religion they were raised in. They had no close peers to confide in and besides, their peers were as ignorant about life experience as they were. They didn't want to go to a psychologist or counselor on campus because it was too impersonal, and it made them feel like they were some sort of nut. I couldn't imagine a more improbable place to unload than during an interview for medical school. But unload they did. I had one student describe the hell of his childhood with fighting parents and a father who pulled a gun and threatened to kill his wife. After a few dozen interviews I felt like Miss Lonelihearts.

I also learned that there were some despicable students applying to medical school. One colleague tipped me off about a student who had faked traumas so realistically he was taken in until another student informed on him. He had asked for a make-up examination claiming he was a building superintendent and that a murder had taken place which so shook him up that he couldn't focus on his studies. My colleague was sympathetic until he got a phone call telling him that the student was laughing his head off over how easy his professor was suckered in. The informer told him not to reveal that he called because the other student carried a gun and had threatened him if he ever revealed his behavior. My colleague handled it well. He confronted the student with the telephone calls he had made to both the newspapers and the district attorney's office to verify the alleged murder that took place. There was none. The student was not amused.

I never considered it the premedical advisor's job to sell UCLA's students to medical schools. I considered it my job to evaluate the students as impartially as I could and weigh their academic records, their academic habits, their motivation, and their personalities. I wanted to create as

detailed and fair a picture I could for a one-hour interview. I learned from this job how to talk to anyone about anything.

When I came to Stony Brook, I kept away from the medical school during my first ten years. Only after I came back from a year studying human genetics at the University of Minnesota did I feel ready to teach in the medical school and to serve on the medical admissions committee. There is no committee that works harder than the medical admissions committee. For ten years it involved two interviews a week from late August to the beginning of April. I would also screen ten folders a week and rate these as interview, screen out, or hold. We also met once a week on Thursday evenings from 5 to 8 PM. The interviewer for the admissions committee has more information on the student than a premedical advisor. The student has to write a personal essay for the application and supplementary short essays to specific interests of the school. The MCAT [medical college admissions test] scores and grades are complete and so is the file of letters, including the premedical advisor's report. I only interviewed students who didn't go to Stony Brook and that avoided a conflict of interest. I got to know what is taught on other campuses and I met incredibly interesting people from ivy league schools to obscure small colleges I had never visited. I talked about anything. I learned from a Sikh how he prepares his turban from a cloth the size of a bed sheet. I learned about education in Uzbekistan from immigrants who came to New York. Some are older students who have had a lot of life experience as professional tennis players, ballet teachers, police officers, physician's assistants, or corporate middle managers. Some have experienced the miseries of lives in Calcutta working for Mother Theresa. Some have worked on Native American reservations. Some worked in the slum areas of New York City. They varied in skills and their goals for medical education. Many were hot shots who will be academic stars, doing basic medical research. Most wanted to work with people and their conversations proved that they can. Others are just dull and pulling anything out of them is like extracting impacted teeth. A few are psychotic and I let the Dean of Admissions know this so the student can be given a second interview by a psychiatrist. After a while you begin to detect those who have hidden lives

as substance abusers or who are covering up their past and not being straight forward. Nothing dumps a candidate faster than lying about the past or omitting a record of past failure. The truth helps even the fallen student. We have voted in a student who had a prior arrest record or who had been suspended for a minor infraction in school (such as selling a stolen book).

What I have learned over the years is that there is no such thing as a typical premedical student. I am also confident that most of these students are decent, work hard, and will serve us well. Many people criticize medical admissions committees for not just using grades and MCAT scores to make it “objective.” This would be a disaster. It would mean no one could be a physician except a genius or a grind. A cold fish who dislikes people would be admitted because he or she had a 4.0 average and outstanding MCAT scores. Good grades are no guarantee a student can relate well, respond well to emergencies, or inspire confidence in a patient. Physicians have to deal with the rich and the poor, the stable and the neurotic, the educated and the ignorant. They have to work with patients of all races and political views. Society is better served with physicians who have a caring personality to go along with their academic talents.

After the interview is written up it may take anywhere from a few hours to several weeks before that student is discussed. There are lots of students to be discussed and voted on, so each committee member has to wait. Sometimes a student may be presented earlier because of some special need, such as competition with other students or the student has already been accepted elsewhere. The committee members eat a buffet dinner for about 30 minutes and then divide into subgroups, each subgroup taking about 20 folders to vote on. The person who interviews presents the case for or against the student and the rest of the committee reads a copy of the file and asks questions. The members then give their votes on a numerical scale (such as 1 to 5, where 5 is tops and 1 is considered unacceptable). It was a wonderful way to get to know my colleagues in the medical school and to know their personalities and their values. Sometimes I felt triumphant if got a student through that was a great interview, but the student had a less than stellar academic record. Sometimes I lost a student I really cared for. Fortunately, we only know these students for one hour and it is good that

there is a conflict-of-interest rule. I would find it painful if a student I knew for years and went to bat for were voted down by my own subcommittee.

Over the years I have been impressed by the high quality of students entering medical school, the seriousness with which the committee selects them, and the diversity of talents such students bring to the field. Patients want doctors to treat them as human beings and not as detached objects. They do better when they feel their physicians care about them. They also want their physicians to listen to them and not ignore their complaints. They appreciate it when physicians make an effort to understand their values and their circumstances. Having top grades is important, but these very human attributes are not learned from books or the lecture hall. They are often learned through volunteer work, summer jobs, extracurricular activities, travel, and other circumstances that bring people together who are very different.

Teaching medical students is a joy. They are highly motivated. They want to learn everything. Their hands shoot up whenever they seek how an idea will relate to their future practice. It is easier to teach medical students because they know how to study. You don't have to repeat a lot as you do with students who take required courses in fields that they have no intent to use. They are alert in class, and they appreciate any human interest that relieves the deadening blizzard of facts that deluges them every day. I taught fifteen hours a year in a course called *Molecules, genes and cells*. It was a hectic pace because my portion of this huge first year course for medical students was covered in two weeks. It was an opportunity to make future physicians aware of human genetics and the way parents and society cope with birth defects and inherited disorders.

Just as undergraduate education in America and admissions to our colleges vary from school to school, so too does medical education and medical admissions. There are about 130 medical schools in the United States and most take in about 100 students a year. Elite schools pick the future leaders of the medical profession. There are only about ten such schools. The rest look for students who will primarily practice medicine in cities and towns throughout the country. Rural areas and areas where the

poorest and least educated live are usually under served. No one knows of a just way to meet the wishes of all premedical students, half of whom will be rejected. The present system is not a lottery based on chance. A student rejected at Stony Brook may end up being accepted at half a dozen other schools. Students apply to many schools because there are so many uncertainties. A bad interview can be fatal. A bad impression by the hosting medical students can be fatal. An essay filled with impersonal clichés can be fatal. Nor is there a way to meet the needs of society. If courts favor objective numbers such as MCAT scores and grade point average, students who were born overseas will not do as well in the verbal section. Should we tell parents of immigrants to wait until their grandchildren apply? Should we tell students whose parents are not college educated to wait until their children are raised middle class so they can apply? Should medical school be a goal achievable primarily by the middle class and wealthy? Much of the national debate over cases in which minority students are admitted over the huge number of conventional students rejected, gives a false impression of who are the medical students. With rare exception they have been and still are overwhelming white and middle class. The only major change in the past forty years has been the end to discrimination against women entering the professions. Their ease in getting in is simple. They are the female counterparts of males who get in. They match in home environment, parental occupation, and all the other factors that males from middle class households enjoy. What has not changed is the obvious inequality of opportunity offered to a child born of parents lacking a college education and immigrants who were raised in a different culture. To expect them to do as well as white middle class students remains unrealistic.

That is just the problem of admissions. Medical education makes it even more complex. Numerous studies show poor correlation of MCAT scores to reputation as a physician based on performance on national board examinations, matching to residency programs, or peer judged quality of medical care in practice. A student may have low or marginal MCAT scores one year and through a concerted effort take them over and have outstanding scores the next. The scores tell little about manual dexterity for surgery, finding a vein to take out blood, or relating a variety of symptoms

to figure out a cause of the patient's illness. Medicine is not memory, and it is not test-taking, although both play an important role. Medicine is both science and art and no machine graded test has been proven effective for predicting the much-desired human qualities of successful physicians.

CHAPTER 69

IU FELLOW

David Smith helped me get invited as a Fellow of the Indiana University Institute for Advanced Study. I was planning my sabbatical leave for the academic year 1986-1987 and thought splitting it would make the most sense. I'd spend one semester just writing and learning new things and one semester teaching at Tougaloo College, thus fulfilling a long-standing hope that I would have an opportunity to teach at an historically black college. The Danforth Foundation had encouraged its scholars to do so in the 1970s, but with younger children I didn't think pulling them out of elementary school was a good idea, especially for a single semester. David Smith was one of the regulars in the Lilly Workshops on the Liberal Arts. He told me if the Fellow appointment didn't work out, I could use a room in the Poynter Center and work there. David headed the Poynter Center which was a scholarly facility for the study of values and ethics in the professions. David had wide interests in the humanities and sciences, and I had audited his course on literature and values at the Lilly Workshops.

Nedra and I were given faculty housing in an apartment building a few blocks from campus at a reasonable rental. We both decided to audit David's introductory course on ethics, and I arranged to meet with a monthly gathering of ethicists in medicine who either came down to Bloomington or held the meeting for us in Indianapolis. These were sessions that dealt with difficult legal and ethical issues for the newer medical technologies that prolonged the duration but not the quality of life, that dealt with decision making for profoundly sick babies born with multiple birth defects, and with unusual issues arising out of the application of new technologies.

The Fellowship status came through and I was assigned an office at the Poplars, a one time hotel that was later a dormitory and at the time I was there, a set of offices for different IU activities, including its Institute. There were two additional Fellows there. One was a Singapore scholar and politician who was studying Pacific Rim politics. The other was Daphne Patai, a scholar in Portuguese literature, especially Brazilian writers. She was also interested in feminism as a scholarly pursuit rather than as a mission or political movement. Except for a tea in the afternoon where we could meet and chat, there was no formal activity that brought us together. My only duty as a Fellow was to prepare a public lecture and give it sometime before I left. I thought I would explore an interesting question. Why did Indiana University have three recognized scholars who departed from tradition and became socially controversial activists for views of society that were connected to their science? The three scientists I chose were David Starr Jordan, Alfred Kinsey, and Hermann Muller. Jordan had served as president of IU in the 1880s and he was admired as an educator and was one of the first to organize the undergraduate curriculum as consisting of a lower division liberal arts education and an upper division major in a field of concentration. His success as an educator led him to become the first President of Stanford University. Jordan was a prolific writer, and his essays and books filled several inches of Stony Brook's card catalog so I knew he had written a lot of popular science in his day.

Kinsey was an entomologist, and his initial fame was a study of the genus *Cynips*, the gall wasp. He traveled throughout the US and Mexico to collect several million specimens of these wasps and gave intense attention to describe their differences. He developed an elaborate evolutionary model for them which was idiosyncratic and not well received. But from it his methods for field work were honed and he used these effectively in the 1940s when he switched to human sexual behavior as the focus of his research.

Muller, of course, I knew well from his five years as my research mentor and from writing his biography. He was a staunch advocate for radiation protection of the public and he was an equally strong advocate for initiating eugenic programs that addressed biological problems that most

scientists pretended did not exist. Muller was applauded for his concern for our protection by the same general public that condemned him for his eugenic views.

I thought a comparison of the three would be ideal for my public lecture. What I needed to pin down was Jordan's role in the formation of the American eugenics movement and whether he played a part in shaping the horrible compulsory sterilization laws implemented in 1907 in Indiana and the restrictive immigration policy based on racism and bigotry that characterized the Johnson Act of 1924.

That sent me to the library every day and I loved the research library (now named for Herman B Wells) housed in a tall white building that dominated the eye and that preserved some very valuable and rare holdings that scholars need for their work. I began reading a two volume autobiography, *Days of a Man*, that Jordan wrote towards the end of his own life. I had read other works of Jordan's that I bought over the years in used book shops, so I had a good understanding of his interests as both a scientist and a popularizer of science applied to humanity. His *Footnotes to Evolution* had some devastating essays, one on Oscar McCulloch and the "Tribe of Ishmael" and one on social degeneracy applied to immigrants. I had never encountered anything of his pointing to a desire to sterilize those considered unfit or unworthy of producing a new generation. I had thought of Jordan as a somewhat Galtonian elitist who believed in the gardener's model of human heredity – cull your rejects and breed the best. Some of his books on heredity that I read in the IU library had this philosophy spelled out. But Jordan was complex, and he was also a pacifist and believed war was "dysgenic" because it drafted the most able young men and then sent them out to kill each other leaving behind "the man with the hoe," a symbol of the downtrodden and less able who formed the future pauper classes he condemned. He became a pacifist through this eugenic belief.

It was the reading of the two-volume autobiography that convinced me I was following a false lead. Jordan was not the one who got the sterilization laws going in Indiana, but he did influence a lot of his readers about the

virtues of American eugenics which put more weight on weeding out the rejects than in cultivating the best.

My days in the Poplars were enjoyable. I had brought along my computer and was writing on it, which was a triumph for a semi-Luddite like myself. I much preferred writing with a fountain pen than typing or using a ball point. I had forced myself to use the personal computer when I was convinced it was easier to edit on a screen than go through the agony of retyping draft after draft of a book. I had already written several books longhand and then typed them myself or used a combination of writing using extended outlines in longhand followed by typing a draft of each chapter. I was also delighted that ignorant as I was on the use of computers, I found someone who knew even less – Daphne had just bought a computer, and it was as bizarre to me as when Jim Telfer, in Muller’s laboratory, one month married, was instructing me on what married life was all about as I prepared to go to Brooklyn to marry Helen.

Nedra and I enjoyed David’s course where I learned about utilitarian and deontological theories of ethics and how they were used. His readings were varied, and I particularly liked his emphasis on issues that are not likely to ever have consensus. There is no definable boundary between fighting to save a life and letting go when a condition is impossible to rescue. There is no clear guideline on “shooting a naked soldier” taking a bath; and shooting a soldier in uniform, gun in hand. Nor are the complex issues raised in *Bad Blood* easily reduced to simple bigotry against blacks. It is easy in retrospect to condemn a study of untreated syphilis initiated before there were effective treatments for early syphilis and virtually none for late syphilis. Deception in experimentation was almost universally accepted when I took a psychology course in 1952. I do not doubt that the same study would have been done on white syphilitics if they were readily accessible in Appalachia or other poverty pockets in the 1920s and 1930s. What was racist in the thinking of federal physicians at the time was the belief that African American culture was more accepting of “loose standards” for sex than white impoverished cultures, a thesis which I suspect made the black impoverished population the study’s first choice.

It was an enjoyable semester. I began my book on the history of allegedly unfit people while there. I saw how difficult it is to develop ethical standards that are shared in a diverse democracy like ours. It was an intense opportunity to learn a lot with no distractions to pull me away from a prodigious amount of reading. I was grateful to have a place to be a scholar on my own terms and for those five months I felt like Darwin at his home, free to set his own pace as a scholar and writer.



Figure 69-1

The Poplars was at one time a hotel and later a dormitory. It was purchased by Indiana University and became the site for several programs, including the IU Institute for Advanced Study. I had an office there when I was a Fellow in 1986. The Institute is now located in the Eigenmann dormitory.

The public lecture I gave was well received. I learned through conversations with staff and patrons of the Kinsey library what Kinsey's contributions were. The library is certainly one of the most enduring of his contributions. At that time nothing was published, and nothing was said even privately about Kinsey's new sexual life. I am not sure that those contribute much to the shape of his work or the validity (or lack of it) of his findings. I suspect there is little correlation between the personality and the various transgressions, sexual or otherwise, of scientists and the laws, discoveries, or theories they propose. There are many scientists I have known who are not nice to students, their families, or their colleagues. Some may also be sexually more aggressive and non-conventional than others. The real test is simple. Give the experts a series of scientific findings in modest detail and then ask them to identify which were the works of libertines, which the works of reasonably monogamous individuals, which the works of tyrants, and which the works of those revered for their collegiality with their students or colleagues. Only if that shows a

correlation will I believe that what a person shoves up his rectum, down his urethra, or into whatever other orifice is available, is significant in explaining the scientific work for which that scientist is known.

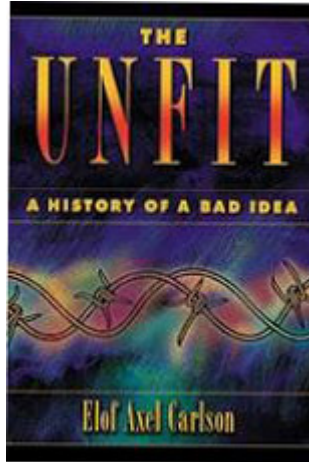


Figure 69-2

The Unfit: A History of a Bad Idea is a history of people designated as unfit to live among decent people. It goes back to biblical times and became shifted to science in the 1700s with masturbation as the first (false) interpretation of the cause of degeneracy, as social failure was then called. Degeneracy theory led to compulsory sterilization laws and the negative eugenics movement in the United States and to racial hygiene and the Holocaust in Nazi Germany. I wrote a good portion of the first draft as an IU Fellow.

CHAPTER 70

TEACHING SEX

At Queen's University I first began thinking about human sexuality as an interesting topic for a biology class. I came up with what I called then "the seven sexes of man" and made good use of the medical library, especially Jones and Scott's text on human reproductive disorders and their surgical repair. In 1958 there wasn't that much known about the genetics of human sexuality. It had been known at least since early in the century that males had an X and Y chromosome and females had two X chromosomes but how many chromosomes altogether were in a human was not worked out with certainty until 1956 when the human chromosome was found to be 46. The geneticist represents our human chromosome number at fertilization as 46,XY for the male and 46,XX for the female. Except for this bit of knowledge there was very little else known about the genetics of sex in humans when I began teaching at Queen's University. My working assumption was that there must be a lot of human counterparts to what existed for fruit flies with regard to sex. This included non-disjunction or gains or losses of a sex chromosome, genes that affected sexual development causing sex reversal (which in humans would be XX males and XY females), and lots of genes for sperm and egg production. Exactly where one would look to find these was pretty much of a guess.

I classified human sexuality as having seven components. I called these chromosomal sex (are you XX or XY), genetic sex (are there genes that lead to partial or complete sex reversal or ambiguity of sexual development), gonadal sex (do you have testes or ovaries or both), internal genital sex (do you have a sperm drainage system or a pregnancy delivery and maturation system), external genitalia (the equipment in males and

females that is banned from display in public), secondary sexes (what happens to us when we hit our teens), and psychological sex (our heterosexual, homosexual, and gender characteristics). In 1958 that approach created as sensation in my classes because human sexuality was either ignored in biology classes or left to “dorm talk” where most of the concern was preventing sexually transmitted diseases or unwanted pregnancies and learning how to be a decent person when courting another person.

My basic assumption was that sex made the species continue but it was not a vital organ system and thus any genetic damage to the reproductive development or function would likely live and thus we could learn a lot about how genes work by studying human genetic disorders. I didn't know enough human biology then to make that foray into human genetics although I was teaching the Queen's university medical students in their first pre-clinical year. Instead I was an avid reader of anything that appeared concerning the genetic and chromosomal basis of human sexuality and as soon as something new came out, I'd plug it into my lectures.

I did this also at UCLA, keeping the seven sexes approach to human sexual development and as the chromosomal disorders were identified, I'd make sure the class got these whether I was teaching genetics, biology for majors, or biology for non-majors. I also did so at Stony Brook wherever I could tuck that information into my courses. I had amassed quite a bit of knowledge following the literature over some 20 or more years.

In 1964 my colleague from the history department, Ruth Cowan, asked me if I could teach a course on the biology of human sexuality. She was organizing a federated learning community on the theme of human reproduction. I told her I'd think about it. A week later I told her I had a rough outline of such a course but that I'd have to prepare it over the summer because I was too busy to work on it while serving as Master of the Honors College. She was delighted and surprised because I'm sure she didn't expect me to design a new course specifically for her program.

I spent most of that summer in the medical library. I went through the recent literature on sexual disorders leading to hermaphroditism and

pseudohermaphroditism. A hermaphrodite has both testicular and gonadal tissue (and what these do to the rest of the seven sexes). A pseudohermaphrodite has gonads of one sex and something that doesn't normally belong going along with it, like ovaries and a penis or testes and a uterus. As I compiled the notes on each of my lecture topics, I would take them home and write them up as a chapter. By the end of the summer I had researched my course and I had a first draft of a text in the biology of human sexuality. I made it a non-major's course with a prerequisite of Biology 101-102 or the majors biology course. I expected about 30 students and got 200.

Over the years I have met some students with conditions I described in class. I discuss a medical condition called Turner syndrome. Persons with this are females who do not grow to normal adult height. Many of them have an unusual webbing of the neck, a fold of skin running from the earlobes to the shoulders. They have no ovaries (they degenerate into scar tissue after birth) and thus do not enter puberty. They can be helped as they approach puberty with hormones to induce breast formation and even a monthly menstrual cycle (they use "The Pill" to induce this cycle) which, of course, lacks formation of an egg. They can even become mothers through in vitro fertilization if someone donates an egg or stored fertilized egg. Persons with Turner syndrome have most or all of their tissue with only one sex chromosome present, an X. Their chromosome number is represented as 45,X.

About 25 years ago a student walked into my office to apply for a position as an undergraduate teaching assistant for my non-major's course. I asked her if she had Turner syndrome. She did. She went on to enter medical school. Except for her small height and the surprise her patients would have upon first seeing her, I had no doubts she would do well in her profession. Another student, in my non-major's course, once came to my office and asked, "Dr. Carlson, what do I have?" I was at a loss to tell. She said she had Turner syndrome. She looked like a normal small, but not dwarfed, woman. She said she was a mosaic and had tissue that was composed of XX and X bearing cells. She went on to law school. Children born with Turner syndrome are relatively rare, about 1 in 5000 births. Most

abort along the way and about one percent of all fertilizations have a 45,X composition.

I also discussed a sexual difficulty with a student in the Federated Learning Community program called Social and Ethical Issues in the Life Sciences. He told me he was a hermaphrodite and that he learned this from his mother. He was upset to learn this less because of the sexual ambiguity than because he was sterile. I gathered that he had ovarian tissue and had some monthly bleeding through his penis. I did not ask him about his genitalia, and I usually let the student do the volunteering of information on matters like this. He had a rough childhood. He was the youngest of five children born in an African American family raised by their mother. He was the lightest skinned child, and his siblings were dark skinned so he felt different from them. He was close to one sister, but she and her child had died of AIDS. He was the only one of his siblings who had gone to college. He was also having difficulty at Stony Brook because he was being pressured to join different African American clubs and he wasn't interested in his spending much time on his black identity. He was interested in his school work and his career, not racial politics. I told him that it would take a thorough medical examination to confirm if he was sterile or not and that he should do that if he were getting serious about a girl he was dating. I did not tell him he had ovarian tissue because I felt this was not the right time for him to absorb it.

Students over the years have discussed difficulties facing and occasionally their own inclinations to homosexual feelings or their deep fears of homosexuality. One told me his father had told him that he would rather see his son dead than learn he was homosexual. That was some thirty years ago, and I hope fathers don't say that today. It's enough of a burden for a young man or woman to struggle with sexual orientation without having a potentially suicidal wish imposed on them.

My purpose in teaching the course on human sexuality was quite different from the traditional non-major's human sexuality course. This was not a course on how to put on a condom or how to date. It was a course that taught biology through human sexuality. The seven sexes approach made

me aware that this brought genetics, developmental biology, and physiology into the course. Students learned that there were some key genes, some on the X, some on the Y, and many among the rest of the 22 chromosomes that dealt with sexual differentiation. They learned there are hormonal axes running from the brain to the pituitary to the adrenal gland to the gonads and which revealed stunningly how these affected genital development and adult sexual function. They learned how some gene mutations knock out formation of a hormone and other gene mutations knock out the receptors to those hormones. For every failure of a key hormone there is a consequence paid in fertility, genital differentiation, or sexual function.

I made the class learn dozens of these genetic and chromosomal disasters that led to sexual syndromes, many of them hermaphroditic or pseudohermaphroditic. It was biology at its best to predict the consequences to the seven sexes for each mutant or chromosomal abnormality that occurred.

The past ten years have been very exciting ones in this field. A gene on the Y chromosome determines the fate of the embryonic gonad. If that gene, called SRY, is present, the gonads form testes. If it is mutated, then the individual becomes an XY female who is sterile. Sometimes a piece of the Y chromosome with the SRY gene gets inserted into an X chromosome. This can lead to XX males who are normal in every way except they can't make sperm in their testes. The gene for SRY has been isolated and its sequence of nucleotides worked out. In years to come scientists will study the molecular events leading to sexual development. They may also isolate genes that alter sexual behavior including homosexual orientation, childhood play, and what makes people repelled or attracted to others.

I repressed my normal tendency to use wit during lectures and made sure my language was sensitive to those who might be offended by the way I described people. I learned there are advocacy groups for everything, even for people with ambiguous genital development. One such group berates their parents for having done surgery to remove a penis or a scrotum to give the child a single sex upbringing. Those in such advocacy groups argue that they should have made that decision. From them I learned that there are

people who put the autonomy of decision making as the supreme value in American society. Most parents would reject this and argue that parents must do the decision making for their children's best interests. It is more likely that an individual with an XX chromosomal composition, whose penis and scrotum has been surgically removed and who has ovaries, a uterus, and a vagina, is more likely to have a self-image as a woman growing up than if that person were raised as a male and retained all the female organs and a penis and scrotum with the potential trauma as a teen of menstruating through the penis. The reality of many human genetic disorders is that there are no perfect treatments or philosophies to guide parents that are for the best interests of the children or their interests as future adults.

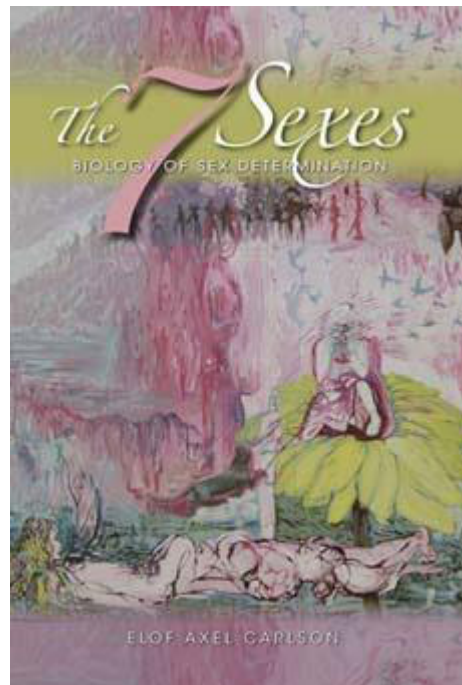


Figure 70-1

The 7 Sexes is a history of sex determination from antiquity to the present with the piece by piece addition to our knowledge of human reproduction from anatomists, breeders, cytologists, biologists, evolutionists, endocrinologists, and molecular biologists. I did the research for it at the Kinsey Library which is in Morrison Hall on the IU campus. The cover was from a painting in a Kinsey juried art show. The painter was the daughter-in-law of Nedra's roommate at IU.

CHAPTER 71

RETINOBLASTOMA

I first became familiar with retinoblastoma when I met the son of a couple who were active in the Westwood Unitarian fellowship. Their son, Brian, was a teenager who had both eyes removed when he was an infant and he was a pleasant young man who enjoyed playing the guitar. I looked up the disorder and learned that it was inherited as a dominant trait. Retinoblastoma is a cancer of the eye that appears in early childhood. This meant Brian had a 50% chance of transmitting it if he married and had children. Both his parents were normal and that meant Brian's condition arose because a mutation arose in his father's sperm or in his mother's egg just before he was conceived.

When I was doing my chemical mutagenesis studies to compare xray induced and chemically induced mutations in the dumpy locus, I discovered that almost all of the mutations induced by ICR170, the quinacrine mustard that Irwin Oster taught me how to administer to flies, were mosaics. Each mutant fly was a composite of mutant and normal cells. With my graduate student John Southin, we worked out the classes of mosaics. Some had normal bodies and mutant gonads. Some had mutant bodies and normal gonads. Some had mosaic bodies and their gonads could be anything. I thought about Brian and his retinoblastoma because in reading up about it to counsel him and his family, I learned that most of the retinoblastoma cases were mosaics. Only one eye was affected. I wondered if the human was like the fruit fly and if my fruit fly model for dumpy applied to human cases of retinoblastoma.

I did not divert my attention from the immediate need to extract as much information as I could from the fruit fly experiments and I was not prepared

while at UCLA to switch to human genetics. That would take a lot of effort and if I added that to my work, my teaching would have to go. It took another ten years before I felt I was ready to explore human genetics more thoroughly.

I did so at the University of Minnesota in 1977. I wanted to teach in the medical school at Stony Brook University and I wanted to see first-hand the conditions I read about and used as examples in my non-majors course. Looking at photographs is one thing, seeing such children is another. I was abundantly rewarded in my sabbatical. I spoke to Bob Desnick about working in his group at the Health Science Center in Minneapolis. I also told him about my interest in retinoblastoma and he arranged for me to get access to the hospital records. I selected the previous twenty-five years of cases. Some were obvious misclassifications and other eye tumors caused by melanomas were lumped with the retinoblastoma cases. Some even mixed retinoblastoma, with neuroblastoma, a cancer of the brain in children, because untreated retinoblastoma can spread from the optic nerve into the brain. I filtered all those cases out and had a generous number of retinoblastoma cases to study. Each folder had a file of about ten to fifty pages. There was a lot of useful information I pulled out of them. I studied the time when symptoms or the diagnosis was made. I looked at the location of the tumor. I checked the number of tumors in each eye. I made a pedigree for each family. Each folder was a different heartache for the parents. Each case was a child who had to go through years of painful eye examinations. I got to see such children and I spoke to their parents. From each folder I made a pedigree, and I could follow the transmission of the gene from generation to generation or determine if it was just a sporadic case that would never be transmitted. I knew my mosaic model inside out so I could now fractionate the retinoblastoma cases, classifying them like my fruit flies and fitting them to the categories that I knew so well. My model worked. I was very excited and went through the world literature and compiled all the published cases to see how the data agreed.

When I amassed this information, I wrote it up and submitted it to Desnick. I heard nothing. I learned from one of his students that he was miffed. I had violated an etiquette of medical publications. I did not put his

name on the paper as a co-author nor those of the physicians who contributed the most cases over the years. It never occurred to me I should. The tradition in Muller's laboratory and in most biology laboratories was very different. Muller was not a co-author of my papers for the work I did on my dissertation. He put immense time into correcting and modifying my sentences to tighten them. He made many suggestions to improve my evidence and to do more tests to clear up findings that had too many loose ends. The rule in graduate laboratories was that if you did the work and wrote the paper it was your work and your publication. If you were paid by Muller to work on his experiments you were a co-author. Sonneborn was even more demanding. If his graduate students worked for pay on his research they were not co-authors; they were acknowledged in a footnote.

I spoke to Desnick about the impasse and agreed to do what medical tradition demanded. I added him and one of his colleagues as co-authors on a paper for the *American Journal of Ophthalmology* discussing the genetic counseling for retinoblastoma and I made Desnick co-author on a more theoretical paper that related my fruit fly model to the analysis of the retinoblastoma cases for a paper in the *American Journal of Medical Genetics*. The papers appeared after I returned to Stony Brook. I appreciated Desnick's revisions and his criticisms and they certainly strengthened both papers. I still prefer the tradition of the basic sciences where co-authors have to participate in a major way in the design and execution of experiments and in the writing of the paper. Many a career in medicine has been blemished by the appearance of respected scientists as co-authors on papers that were faked by their students, post-doctoral associates, or colleagues. I believe it happens more in medicine than in non-applied science because the close collaboration of real co-authors is absent. It is easier to spot faked data when you are there seeing the data emerge and are part of the day-to-day working-out of the experiments. It was not uncommon for physicians to add co-authors out of loyalty to hard working colleagues who were up for promotion and did not have time to spare from their patients to do enough research to gain tenure. I have heard many of my colleagues in our medical school at Stony Brook who expressed their

sympathy for this practice. It is not greed but concern for members of the medical department that motivates such investigators.

Shortly after I returned to Stony Brook, a movement for patient privacy began and within three or four years I found it close to impossible to get access to hospital records to study other disorders. I had hoped to study a variety of autosomal dominant disorders to look for mosaicism which I was convinced would appear if a thorough search was made. There was no reason why such mutations could not arise spontaneously, as they do in flies, and produce mosaic distributions of tissue. To track down patients who had long ago moved away is a daunting and expensive task. I was not going to spend my own time in such clerical tasks, and I was not interested in applying for grants and once again end up feeling obligated to keeping people on a payroll. I am not convinced just compiling data from hospital records is an invasion of privacy, but we now live in an American culture that does not take chances. Hospitals don't want to be sued. Some people feel their records are not for research no matter who benefits from it. I dropped my involvement in human genetics.

Over the years I have met individuals who survived retinoblastoma. Some came to me after my class lectures and told me of their family difficulties. I always prepared a pedigree for the student and told the student to put it in a family bible to have for future relatives to see. Some, like Brian are eyeless. Some have a glass eye replacing the one that was removed, and these are so well crafted that I couldn't tell which eye was artificial in one young teenager whose father was quite depressed. This was while I was still in Minnesota. I told him that my research, still unpublished, actually put his daughter in a very low risk group, probably less than one percent for her passing it on. He said that was the first positive news he had heard since she was diagnosed about three years after she was born.

Today the gene for retinoblastoma has been isolated and its sequence of nucleotides is known. Its role in producing tumors is well understood. Children in industrial nations are usually spotted early when symptoms appear. In developing nations many children are first seen by a physician

when the tumor has pushed the eye out of its socket and the cancer has spread to other parts of the body. Such children rarely survive. For those caught early almost all survive and the chances of recurrence in their eyes is slim although they may still experience cancers elsewhere later in their life, especially for those who had both eyes involved.

CHAPTER 72

CHINA

I have been to Hong Kong three times and mainland China twice. I didn't get to see much of Hong Kong en route to Ho Chi Minh City for the International Symposium on Agent Orange. I did enjoy several days in Hong Kong on my second trip. That was arranged through *People to People*. I had gotten a letter in 1986 from Ernest Chu, a geneticist I knew who had made some early contributions to cytogenetics. *People to People* was a non-profit organization that had gotten its start through President Eisenhower's encouragement. He believed that if people from different countries met their professional counterparts this would reduce our fear of strangers and lead to a more peaceful world. It would be an opportunity for Americans to serve as good-will ambassadors.

I used my royalty money from a text I had written and invested in this opportunity to meet people in human genetics in China. I was particularly intrigued by the changes in China. They had spent the first twenty-five years of their existence as a Communist state under the influence of Lysenkoism, a crackpot belief invented in the USSR that claimed genetics to be bourgeois and false. I remember reading copies of *China Today* in the library and seeing articles on "selectionists" who followed a Lysenkoist philosophy of training plants or changing their heredity through environmental treatments. China and the Eastern bloc dropped Lysenkoism when the USSR acknowledged his policies failed and that Soviet scientists were encouraged to use classical genetics again for their scientific studies.

I was also curious about the one child family. I knew that whatever political creed Chinese politicians might believe or offer as propaganda for the public, the reality of biology guaranteed that about five percent of their

children would be born with birth defects. Would those families be given an exemption to try again? Would prenatal diagnosis be available or even mandated if they tried again? How well observed is the one child rule? How does one do genetic counseling if there are no collateral relatives such as cousins to find in a pedigree of the one child family?

We were briefed in Seattle and then flew across the Pacific to Tokyo for a brief one day stop-over and landed in Beijing. The first impression I had was that I had moved back in time about 30 or more years. The airport was crowded, dismal, and filled with the choking smoke of cigarettes. It seemed as if every adult smoked. The clothing was uniformly the same, a drab blue or gray work outfit, jacket, and cap used by men and women alike. As we drove to our hotel in the downtown section near Tiananmen Square, I was struck by a second sight. Everywhere I could see China was building apartments and office buildings. Cranes and bamboo scaffolding were a testimony to how much was being done in a hurry.

Our first visit was to Peking University. It was originally built with Rockefeller money and retained the older name, Peking. We met Dr. Wilson Lo, an American trained physician who headed the human genetics program. He had survived the war and the Cultural Revolution and was optimistic about the changes taking place. He showed us two wings of the hospital. Down one corridor were old laboratories with the brass microscopes and balances of the 1930s. The other corridor was modern and a partially opened crate revealed a state-of-the-art DNA synthesizer.



Figure 72-1
The Life sciences Building at Peking University.

The patients in the hospital sat in long wooden benches and there must have been several hundred in the waiting room. Both Western medicine and traditional Chinese herbal medicine were used by patients. A major concern was cancer. Chinese were particularly vulnerable to stomach, nasopharyngeal, and esophageal cancer. One large scale project was being carried out by a method that was not too expensive and that did not require high tech skills. The physicians suspected that there were two factors involved. One was dietary or environmental and the other was genetic. The dietary factors involved the use of certain fermented sauces in curing and preparing foods. Most people were not harmed by this way of feeding their families. Rather than try to force tens of millions of people to change their dietary habits, the physicians looked for family histories in which two or more relatives developed one of the cancers. Local students were trained in taking family histories and these were compiled by the neighborhoods and used to determine which families would receive nutritional counseling. Eventually the physicians hoped the carcinogen in the fungus that fermented the soy sauce would be identified and that they could remove it from the prepared sauces. In the meantime a change in diet was their best approach for families at risk to cancer.

We flew from Beijing and its marvelous restaurants and banquets lavished on us by our hosts to Kunming in Yunan Province. It is near the northernmost reaches of the Burma Road and in the part of China that has the most diverse ethnic populations. Most of China [95%] is Han, the typical Chinese we encounter in American cities. In Yunan there are dozens of ethnic minorities whose languages vary from Arabic, Latin, Sanskrit, and exotic alphabets to ideographic languages quite different from Chinese. Many of the ethnic minorities have no written language. These are all protected minorities and because they are so small numerically, they are exempted from the one child family. Human genetics there was less molecular than at Beijing. They lacked the political clout to attract the money for building modern genetics at their university, but they hoped this was just a temporary situation that would change as the country became more prosperous. They used fingerprint and palm print studies of the various ethnic groups and they kept catalogs of birth defects in the ethnic

groups to look for “founder effects” in which a few genes from founding members of the tribe that settled there centuries ago had multiplied through all its members as the population expanded. Children from cousin marriages would bring these to their attention. There were occasional cases of Tay Sachs disease, a disease associated in higher frequency among Ashkenazic Jews, and we speculated whether that arose as a new mutation in China or was introduced by Russian or Middle East merchants centuries ago in their travels along the Silk Route.



Figure 72-2

Kunming University is in the capital of Yunnan province which is in south China near the Burma Road.

The medical students at the university in Kunming had to “volunteer” several weeks a year to rake leaves, pick up trash, cut grass, trim shrubs, and scrub the monuments of their year’s accumulated grime. Our hosts told us this was a contribution each student had to make to build a community and it was intended as a reminder that China was being built by all its people. We also learned from our translator that when a couple has twins they celebrate with a bottle of wine because they beat the system legally. Others who are exempt from the one child rule are farmers who have a daughter. They are allowed to try again if the farm work requires heavy

physical labor. Our translator had one child, a daughter. He denied that most people were forced to abort. He said most of China works on peer pressure and people follow what their neighbors do and this has been true of China for centuries.

When we reached Shanghai, we traveled through the crowded streets and I saw children who were albino, had Down syndrome, or were achondroplastic dwarfs. Most of all I saw couples with a single child either riding along on a bicycle or towed by hand. It was rare to see two or more children accompanied by a parent. The children seemed well nourished and happy in all the cities we visited. We went to Fu-Dan University, the Harvard of China. The most famous geneticist there, C. C. Tan, was a student at Columbia with T. H. Morgan a few years after Muller had headed for Texas. He told us of the horrors of the Cultural Revolution. Although he was a personal friend of Mao Tse Tung's, he was arrested, his wife died, his university position abolished, and his house was ransacked and he was taken away. After the Cultural Revolution he was rehabilitated in a Job-like afterthought and made Rector of the University, appointed as vice-mayor of Shanghai, remarried, and he was restored to his home which was handsomely renovated. Fu-Dan University was already engaged in molecular genetics research, and they had high hopes for developing some practical applications of genetic testing for some of the disorders particularly troublesome in China, especially the hemoglobin disorders associated with southern China. Chinese geneticists are well aware that a one child family, if long continued, leads to problems. One is dealing with birth defects. As screening for at-risk populations and families becomes available, prenatal diagnosis will be widely used. There are no religious barriers to elective abortion in China. If a couple will only be allowed one child both they and the state want that child to be healthy.

The trip with *People to People* was superb and certainly realized what President Eisenhower hoped for such exchanges. We had a frank exchange of views and learned a lot about each other's values in applying human genetics to the needs of individuals and families.

When Nedra and I were on *Semester at Sea* we took the train from Hong Kong to Guangzhou (Canton) and visited Sun Yat Sen University. The students were eager to talk with Americans and our students were equally delighted to know what university life was like in China. One of our students, a Harvard undergraduate discovered that it would cost less than \$2000 a year [tuition, texts, room and board, and incidental expenses] to do graduate work in China and get a Master's degree in Chinese economics. He thought this was a great opportunity to learn Chinese, learn how their economy works, and come back with unusual skills he could apply to his doctorate in economics when he continued in an American graduate school.

We were driven over bumpy and muddy roads to the rural areas of Guangzhou Province where "new capitalist villages" were springing up. In one of them the village had two products they manufactured. One was a computer component and the other was a string musical instrument (a children's size guitar). The profits were split into thirds. One portion went to the village government, one third was split among all the workers, and the third portion went to the Provincial government. The village used its share to build and maintain a day care center, a retirement home, and a village activity center for its youth and the general public.

The clothing was more varied in this second visit to China, with Western jeans now more widespread and Mao blue jackets and pants less frequent. I have no doubts that symbolic "Westernization" will continue in these new capitalist regions of China and will spread from there through visitors to the rest of China, especially its cities. Only Hong Kong was characteristically Western in its buildings, traffic, clothing style, and endless varieties of shops. Both Taipei and Keelung in Taiwan were more like Hong Kong in wealth and habit than was Guangzhou. I realized when I walked these crowded market streets that the Chinese settlements in lower Manhattan along Canal Street would be hard to distinguish from the homelands our immigrants left. The busy hum of life often masks the ideological differences that govern the citizens of different countries.

CHAPTER 73

RUNNING A RESEARCH LABORATORY

For eight years I ran a typical laboratory at a research university. There are about 100 such universities among the 3000 or more colleges and universities in the United States. They have in common the granting of the PhD degree and a commitment by most of its faculty to devote a substantial time to research. In the sciences, with a few exceptions, research is conducted in laboratories. The exceptions may involve mathematical approaches to fields where either a pencil and paper or a computer are the chief tools for analysis and creative exploration of new ideas. I respect my colleagues who do research and I know how hard that work is. In the eight years I was engaged in it, I supervised six students through their PhD dissertation projects.

It is customary for young investigators at major universities to be well supported for their first few years. Young scientists are filled with ideas, and they have a great enthusiasm to work hard and to launch a career. I had no problems receiving National Science foundation grants. This paid for the salaries of Billie Hawkins as preparator and dishwasher, of those graduate students who did not have fellowships or teaching assistantships, and for occasional short-term help, especially in the summer, when we would all be working full time on our projects.

There is a lot of work in preparing a grant application. There are biographical components, statements of short- and long-term goals, description of the project, a detailed and justified budget for the project, references to competitive work in the field, and a dossier of

accomplishments, including an up to date list of publications. These had to be run off in the days before Xeroxing by mimeograph machine with an original typed form with a cover letter. The packet had to be mailed out in time to be received by the deadline for the application cycle. This meant circulating among administrators for approvals and signatures. That meant hand carrying it from office to office because the mails always delay things. After the grant was awarded, usually for a three-year period, yearly progress reports had to be sent in and when the cycle ran its course, a terminal report had to be submitted.

The system of competitive grants that are peer reviewed is not perfect, but it goes with our democratic system and most good investigators are funded. It also has some drawbacks. It encourages not straying too far from what is thought to be a good approach. Highly speculative thinking is discouraged and those who do not have clear ideas of what they want to do are at a disadvantage. I have learned over the years that some of the most creative work is not what goes into the planning of one's grant, it emerges from one's grant and this is where the National Science Foundation was a better program than most granting agencies. Unlike a contract, where what you say you will do is what you have to do, the National Science foundation grant allowed investigators to change their experiments as they gained insights. If the departure was too abrupt, they suggested letting them know and there was no major problem. Why is this important? Sometimes ideas emerge out of the data that accumulate. Relations begin to emerge that weren't seen before. A surprising result may contradict an original experimental approach that seemed certain to go in one direction. Scientists need that flexibility. They cannot be given federal money for thinking, waiting, and immersing themselves in new fields or other adventures that lead to spurts of creativity. That privilege is given only to the wealthy, like Darwin, who could fund his own odyssey or to unusual geniuses who receive MacArthur genius awards.

The down side of administering grants is that it takes a lot of time, requires business skills, and slowly shifts the recipient from the person receiving the grant to do research to the Principal Investigator who supervises a small enterprise engaged in research. It differs from business

because the work usually leads to nothing financially gainful or patentable and the scientist is doing the research because it is intensely interesting rather than eminently practical. For a Platonist like myself, who has never balanced a checkbook in fifty years of using them, the administration of a grant is boring, painful, and mind-wasting.

Muller solved the problem by hiring Herskowitz to manage the budget and supervise the deadlines and the paperwork which was modest in the 1950s compared to the staggering amounts of red tape scientists today encounter with federal rules on everything from biological hazards to the use of human or mammalian subjects in research. A scientist today has to have unusual patience to deal with a horde of potential critics who look upon scientists as irresponsible despoilers of the earth. I realize why society has imposed these burdens to protect itself. I am not opposed to all these regulations. Most of them make good sense. They just consume enormous amounts of time. I've known a few scientists who solved the problem by not taking graduate students and just working on their own scientific projects. Some are like Muller and pull in enough money to hire someone to supervise the management of the grant. I have rarely heard scientists enjoying these tremendously time-consuming activities that accompany the research process.

I gradually found myself tied to my laboratory and the personnel I was responsible for. It became a constant worry getting a grant to keep people employed who had no other source of income. Letting them go meant they would have to look for work and no guarantees it would be in a university setting. I am sure tens of thousands of proprietors have had the same feelings of loyalty to those who worked for them. Not all capitalists are Scrooges. There is also a tread mill effect securing grants. You can't ease up. To ease up means to publish less or to neglect your graduate students. When I sent one of my undergraduates from Stony Brook to Indiana University to work with a geneticist there, that geneticist was heavily committed to a career in administration and he was beginning to use his time as a department chair to build the skills that would advance his career as a future dean or provost, if not president someday. My student was dejected and wrote back he rarely saw his sponsor and missed the

camaraderie and day to day contact he had in the laboratory at Stony Brook. Any scientist who spends too much time teaching, doing public service, or engaging in administration will find it more difficult to know what is going on in the laboratory and gradually grants will dry up and students will seek other sponsors.

This leads to a tension that no research university has solved. They know their best researchers are often their most exciting teachers because they abound with new ideas from their creative scientific careers. But when those scholars do commit themselves to the classroom, they find less time for research. Many chairs hope that those who are not research hot shots will do more teaching and many do. But some believe those who are least able in their research should do most of the teaching and this can be a disaster if that faculty member is burnt out or consists of what is called “dead wood.” It is also not uncommon for younger faculty who seek to be promoted to neglect their teaching and many are encouraged and protected by their departmental chairs to focus on research.

Running a laboratory also requires dealing with the university’s various bureaucracies. These can sometimes be infuriating to investigators who find their requisitions for material blocked by regulations known only to those in the purchasing department. Employees can be held up or shot down because of faulty paperwork prepared by a hasty investigator. I sometimes had to do drastic things to get work accomplished at UCLA or Stony Brook. I once sent the buildings and grounds manager at UCLA a telegram that I paid out of my own pocket to get an electric outage defect repaired. I got a quick response because I was clever enough to do something out of the ordinary. Such ploys only work once.

Doing research is bitter-sweet. Without the grants there would be little research done. It costs money to buy equipment and supplies and it costs money to support graduate students, especially over the summer when they have no courses, and they are eager to work full time. The pleasure of that research is enormous. During my years at UCLA I made some satisfying discoveries about the structure of the dumpy locus, the differences between radiation-induced and chemically induced mutations, and the virtual lack of

mutagenicity of LSD a substance erroneously thought to be a hazard to genetic material. I also recognized that mutations induced by chemicals were almost invariably mosaic if they were induced in the later stages of sperm production. The study of mosaic mutations got me into developmental genetics because I had to figure out why some mosaics transmitted their mutant tissue to their reproductive cells and others (most of them, in fact) did not. I got very few mutations from those same chemicals when injecting or feeding females with mutagens. Their eggs were too big and had too much material that absorbed the mutagens before they got to the chromosomes.

Each finding was exciting. Each was something new to publish and to add to our knowledge of how life works. My disappointment was never with the research I did. I loved it. My disappointment was that in order to sustain this pace of research I would have to diminish the time I spent teaching. I was not prepared to make this sacrifice. After eight years I decided to redefine myself. I had an overwhelming passion to teach.

CHAPTER 74

HOMES

When I was growing up in New York, I never thought I would be living in a house of my own. I was a city creature who took for granted the stacked apartment dwellers living one on top of the other, nodding to each other on the way to and from work or picking up mail. Living in a cramped setting was natural. Houses were alien to the city. They belonged to movies and to quaint pictures in the magazines of folks out west. The closest to real houses were the side-by-side houses along Cortelyou Road or along Ditmas avenue in Brooklyn where I saw the lawns and the gardens lovingly attended by the owners of individual homes. I never imagined what they were like inside. They were relics of Brooklyn past that didn't belong and they were absent in Manhattan.

I saw real homes for the first time when I came to Bloomington, Indiana, and I was invited for a Thanksgiving dinner by a married graduate student and his family. I had never eaten at a home-cooked turkey dinner before, and had never had fresh baked pumpkin pie. I felt as if I were transported into a Norman Rockwell painting. My biggest puzzle was how this family did it. They weren't rich and their furnishings were not too different from what I had seen in New York apartments. I soon learned that most of the townspeople in Bloomington, including the faculty and staff, lived in individual homes. Muller's was a Dutch design with an unusual multi-angled roof. He had used his Nobel money to buy it. It was a modest house and close to campus, about three or four blocks from his office. Once or twice a year he would have us over to discuss laboratory work or to celebrate a return from a trip overseas.

My first wife, Helen, and I lived in a partitioned house when we first came to Bloomington after our marriage in 1954. It was a dark apartment with not too many windows and dull paint and mahogany or dark brown trim and furnishings. Our landlady lived in the same house, and she was always prying. She once walked in thinking the place was empty and Helen was taking a bath and I was talking to her when the door popped open, and the landlady was startled and let out an "OOPS" and slipped back to her apartment. Helen fumed with rage over the invasion of our privacy. In those days the laws and customs favored the landlords and there was nothing we could do about it. I watched her rummage through our garbage looking for evidence of sin, especially beer cans or wine bottles. She found little of demon rum in our garbage, but she must have wondered at the diet we had. Helen was never interested in cooking and her one triumph was to push a pound or so of chopped beef into a baking tin, pour a can of tomato sauce over it, bake it, and that was meat loaf. An indication of how bad or limited my mother's cooking had been, is that I thought this was terrific!

In Canada in 1959 after several months living in an upstairs room that looked down on the children's room of our landlady, Nedra and I decided to move to a house of our own. We enjoyed that tiny room and it was cheap, but we wanted our privacy and a place where we could study and do other things, especially to take care of our expectant baby. The land-lady's mother-in-law was going to go to Scotland for a year and we would be able to rent it as a furnished house. It was posh by any standard Nedra or I had ever lived in. Nedra and I enjoyed the year, despite the frequent heavy snowstorms and the amount of shoveling I had to do in a corner lot. The owner told us that she was coming home a week earlier than she planned and Nedra and I had only a few days to clean the place and we thought we did a good job. Alas, this was a lady of scrupulous standards of cleanliness and order. Everything had to be back in its place, spotless in the same condition she had left it. All the water had to be drained out of the heaters and replaced. I imagined how she must have run a white glove along the trimmings and found offensive layers of dust. She was furious and of course blamed Nedra because it was the woman's job to clean. Nedra was in tears. I suspect that even if we had had that extra week to clean up, our landlady

would have been unhappy. Her life as a widow was one of full-time attention to her house. That was her life. She waged war on dust and dirt and was clearly an exemplar of the “cleanliness is next to godliness” credo.

In West Los Angeles in 1960 we spent our first two years in our second-floor apartment on Granville Avenue. There were about four families who lived in the building. I liked our apartment. It had a balcony and during Christmas, I knocked on the front door while Christina was in her room, and opened it, and thanked “Santa” who was outdoors and brought in Christina’s Christmas present, a tricycle wrapped in a bow. I told her since we didn’t have a chimney Santa had to come to our front door.

On Sunnyside Avenue in Mar Vista in 1962 we had a small green backyard that the children enjoyed and the delight of apricots and peaches from the trees growing there. The children also enjoyed a swing I set up on one branch of the apricot tree. Our neighbors were also friendly and had young children. There was a regular movement of children in and out of the houses along the block. On Halloween one neighbor had an elaborate display of lighted pumpkins and dressed mannequins with hidden walkie-talkies in them to greet children as they mounted the stairs of the porch. After we added on a library and another bedroom, the house was much less crowded. It was the first time I could unpack our father’s books and set them all up with Roland’s and my own collection. We also purchased a library table and some straight back chairs from a salvage sale store.

By far the most comfortable living we experienced was in our home on Mud Road in Setauket when I joined the Stony Brook University faculty in 1968. It was a much larger house than the one in which we lived in Los Angeles, and it was in the suburban splendor of the North Shore of Long Island. I remember the day Frank Erk took me around in his car and I looked at the gorgeous trees and homes in the small villages north of the university. I realized that for the first time in my life I was neither poor nor lower middle class. I was actually going to live as professionals do. I would be living in the house of the former dean. I had chosen the house on Mud Road because I liked its cathedral ceiling in the living room and its split-

level organization. I also like it because it had more trees than lawn. It was on a one third acre lot which was big enough to accommodate forty trees.

Mud Road got its name because it was the path to the town dump when Setauket was still in the nineteenth century. On its north was Christian Avenue where a long strip of old houses served as the homes of a black community that dated back to colonial times. They had been freed slaves and servants during the eighteenth century. Between our home and the black neighborhood was the junior high school. It was still under construction when we moved in. Once some friends of ours from Los Angeles who collected bitters bottles, went with us to the site where the old dump stood, now the back lot of the junior high school. Within an hour they hit the nineteenth century and began unearthing the bluish or violet glass that age had discolored.

I loved the seasons in our Setauket, NY, home. There were the gorgeous colors of autumn and the heaps of leaves that we piled up in the back yard. In the winter the bird feeders attracted the birds in droves, and they commuted with the squirrels for the bounty within them. There were also the blankets of white snow that covered the streets and the branches and filled the neighborhood with an inviting newness. Over the years our children built snow forts and snowmen and tumbled in the snow. In the spring, the crocuses were followed by snowdrops, and the first pushing of the still leafless bulb plants, soon to erupt into tulips and irises. The dogwood tree every other year seemed to flower and shortly after the oak leaves achieved a decent size, myriads of gypsy moth caterpillars munched them and rained their droppings in showers covering the cars, the deck furniture, and the driveway. In the summer the leaves were so dense it became difficult to see the inner planets and other celestial events that hovered near the sun. We had to go to the beach to get a full view of the comets that visited us in the 1990s.

A house is filled with memories, and I remember years ago, reading one of Mr. Cohen's recommended books, *Take Three Tenses*, one of Rumer Godden's marvelous novels. Our house has those memories of children growing up, grand children recycling the games and activities of their

parents, deaths, broken romances, celebrations, secrets, shame, and disappointment. It is a house of love making, disputes, the hurts of teenage rebellion and misunderstanding, the thousands of hours of sewing, painting, writing, and reading.

We had the empty nest. Where once there were five children and assorted friends of theirs constantly in and out as they went through junior high school and high school, there were now just the two of us. It was an eerie silence. Our house felt empty, and it took several months to get used to the new privacy, the new intimacy, and the opportunities to fill the evening hours with uninterrupted projects. Holidays brought the children back and the house would swell with eighteen to 25 relatives and friends, most of them staying over and the miracle of the beds would occur. But as our children had their own children these gatherings became more difficult to achieve with in-laws competing with in-laws for the gatherings at different holidays.

The empty nest ended when our daughter Erica lost her job after a merger of Kenner and Hasbro. She was working at Hasbro in Rhode Island at the time. She and her husband Michael and their four children went back to Cincinnati where his folks lived. For a year they lived off their savings. When that ran out, we invited them back to our place. They were followed by Nedra's mother who was hitting 80 and getting too frail to live on her own. Suddenly the empty nest became a four-generation household and a family of nine. Meals were once again hefty roasts and multi-bag shopping efforts and laundry piled high every day. We had the four grandchildren sleep on the floor of my library. We felt crowded and we decided to add on to our house. The equity in our home had quintupled since we had bought it some 25 years earlier. We took out a new mortgage and got an architect to plan an addition about the size of our original house. We added a full garage and made sure the two-story addition included a sewing room for Nedra, her mother, and Erica because all three were ardent sewers and quilters. After the wall was broken through between our family room and the new addition, Erica got a call from one of her free-lance employers. He asked if she was interested in a permanent job in Florida. She flew down to interview and two weeks later the moving vans carried their belongs and

they were gone. We were now three. It left an immense amount of space, a huge mortgage, and the luxury of a down stairs library, an upstairs study, the planned sewing room for Nedra and her mother, and an office for Nedra's in vitro fertilization records, journals, and study. On the occasions when I was alone in the house, I walked its corridors, looked out the upstairs balcony from our bedroom, gazed fondly at the backyard trees, moved from my study to the living room, sat in my easy chair or sofa, listened to baroque music fill the room, and could not quite believe that I am the ragged child whose nose was pressed against a Gristede's window on 59th street, dreaming of peaches on a hot summer day.

In 2009 I fell down the kitchen stairs into the family room. I couldn't get up but I knew I could move my feet so I wasn't paralyzed. I didn't have any brain lesions, so I still don't know why I fell. The x-rays taken at the hospital were normal. It was a bruised muscle that kept me from getting up after the fall and I was given a brace and a cane to use until the muscle was back in shape. Nedra also fell but she didn't experience any injury. We decided to downsize. But if we did move, why stay in Setauket? We both loved Bloomington, Indiana and it would be easier to see Nedra's mother who was now in an assisted living facility in Frankfort, Indiana with her sister. We spent two trips and about two weeks looking at houses before buying a ranch house on Azalea Lane in Bloomington. Downsizing also meant letting go of many books, furniture, and memories from almost 50 years of living in Setauket. We donated many furnishings to Good Will, sold a few items, and filled two dumpsters with trash that no one wanted. In this uncluttered bliss we moved into a lovely home with the Winslow woods behind our back yard, and the pleasures of a college town that was not doing double duty as a bedroom community for commuters whose work lives were in a distant city. The move also gave us the benefit of shifting our property taxes from \$20,000 to \$2000 a year.

CHAPTER 75

FEDERATED LEARNING COMMUNITIES

Stony Brook is famous for initiating programs that become admired and copied elsewhere but slowly die on its own campus. This is because no administration has seriously embraced undergraduate programs that cost even modest amounts of money. For undergraduate programs administrators want faculty to volunteer, do overloads of teaching, or have departmental chairs drop courses for their majors and substitute courses for the general good of the university. Charity works well on a one-time effort. People feel generous with their time for a first effort. New things are exciting and those who teach them learn new skills. After that it becomes work and people would rather put their energies into some other novelty. The novelty that never wears out is scholarship.

One program that began at Stony Brook was a creature of the late 1960s and 1970s when students were in a rage over the Vietnam War. The shooting of students at Kent State in Ohio and Jackson State in Mississippi told students that many adults of their parents' ages were only too willing to kill them because the students cherished freedom, democracy, an end to racism, and a rejection of hawkish militarism that old communists and old capitalists wanted to impose on an obedient youth. To protest was to declare war on Cold War ideology. In a secular nation like the United States whose unofficial religion may well be the love and pursuit of money, this was heresy. Students began to question why they were in school. They wanted to justify their classes and majors. They said they were not empty containers to be filled with professorial wisdom. That wisdom they saw as the same old Cold War values.

The faculty was nervous about the mood on campus. A theater arts building (a converted barn) that housed its costume collection, burned to the ground. No one claimed responsibility and it may have been natural causes that led to the fire, but in the mood of that time there was a fear it was burned by radical students. My colleagues and I took turns patrolling our buildings and for my assigned night duty, I just sat in a chair in the old biology building and read a book until my shift was relieved. The faculty voted to close down the school for three days and have seminars of faculty, students, and staff discuss what they thought the university should be and what our roles were to be during a time of national discontent. It was called “The three Days”.

One group considered how we learned. Students felt they were being force fed. In some subjects that did not matter, but they had brains and ideas and they wanted to express their ideas. They also wanted to relate what they learned in different classes. From that session two ideas emerged. One was a report called *The Two Stony Brooks* written by Frank Meyers in the Political Science Department. He argued that there were mismatched expectations. The students wanted to be treated as colleagues, enjoy the sweeping world view of the liberal arts, be mentored in their passage into scholars, and have an opportunity to explore new knowledge to find what they would choose for a career. The faculty wanted students who had all the academic skills provided by their high schools. They would be self-motivated, know what they wanted for their careers, and drink in the wisdom of their professors through lectures in large impersonal classes.

A second group raised an interesting question. One of my students in Biology 101 asked me, “How come you are teaching a biology course and you don’t discuss death? Isn’t death part of life?” I agreed, and I worked with my colleagues to produce a course on “Death and Dying.” We invited a hospital chaplain, a physician, a nurse, a funeral home director, a Vietnam veteran, a hospice worker, a philosopher, an evolutionary biologist, a person who recently lost a spouse, and an English professor who discussed Tolstoy’s short story, *the Death of Ivan Ilyitch*. The course was given for about three years until the war ended and students suddenly shifted back to taboo mode and were no longer interested in “death and dying.”

The third contribution of the Three Days was the proposal by a philosopher, Patrick Hill, to create an interdisciplinary program that solved the paradox that most faculty were not polymaths and only knew one area well. To provide students with the connections they sought among their courses, he recommended a cluster of cognate courses that fed into a broader theme. The theme might be “world hunger,” or “human nature,” or “technology, values and society.” Some six courses would be federated or linked over one year, three a semester. There would be a faculty member called a Master Learner who would become a student again and take these six courses with the students, study for exams with the students, take the tests and write the papers. The Master Learner would also conduct a once a week three-hour seminar (in the words of the philosopher, a “metacourse”) that would show how the three courses connected to the umbrella theme.

I avoided the Federated Learning Community or FLC as it came to be called on campus. First, there was the name. It sounded like military jargon and red tape. Second, was the cost. It was a lot of faculty involvement for a relatively few students even if the six federated courses were open to anyone and were already in the course offerings. Pat Hill was not one to take a no without a good reason. About a year or two after he launched the program, he asked me to lunch. “Why don’t you want to participate in the FLC?” As I cited each objection, he had an answer. Pat was very convincing. I agreed to federate my Bio 101-102 courses for a program in “Social and Ethical Issues in the Life Sciences.” He federated a sociology course, a literature course, a medical ethics course, and a philosophy of science course. The Master Learner was a physicist. The faculty met for lunch the semester before the program began and each of us tried to tell the rest what we did as scholars and what we taught. We learned the assumptions and values of our different fields. Rose Zimbardo, the English teacher I found to be the most creative. She played a tape by a professional actor she hired to read the “word salad” of schizophrenics talking to their therapists and the words of contemporary poets. She made us figure out which were which. She also told us that she wanted students to understand the human life cycle seen by serious literature. She chose works such as

Agamemnon, King Lear, Sir Gawain and the Green Knight, The Death of Ivan Ilyitch, and Mrs. Warren's Profession.

When we met the students, we each tried to arrange panels, field trips, and other means of getting students to see that there was learning outside the lecture room. One of my favorite events was a trip scheduled to Pilgrim State Hospital for the insane. We heard a court hearing in which a patient was protesting having to have surgery for a rupture when he felt his truss would do. The psychiatrist was called to read his history and after some five minutes he realized he was describing the wrong patient. No matter. The judge served as “jury and cunning old Fury.” He noted “I had surgery for a rupture six months ago. It didn’t hurt me, and it won’t hurt you. Next case.”

Also memorable was our talking with a graduate student who was a paraplegic. His neck had been broken by his classmates during horseplay on the beach after a high school prom. He thought as he was taken by stretcher that he’d be OK the next day. His classmates didn’t come to see him because their parents feared a law suit. He wanted to die. Eventually he learned to control an electric wheel chair and to compensate for the loss of his arm and leg movements by dictating or by pressing keys through movements of his head or tongue. He fell in love with his therapist, and they married. He said even medical professionals could not take his sexuality seriously. “Don’t they realize that my neurons are awash in testosterone like theirs?” He got his gratification mostly from oral sex. He had erections but could not will them. He was working on his dissertation for his PhD. It was a nice way to learn how some humans can triumph over their limitations. Not all are that fortunate.

Several years later I got to be a Master Learner in a program on “Creativity, Imagination and Problem Solving.” That first semester I took a mathematics course in problem solving, the poetry of William Butler Yeats, and the history of popular and rock music. I thrilled to the Yeats poetry. I learned to struggle with the students in the mathematics course as we prepared for examinations. I was in utter terror in the music class. I could not read musical notation. I had never listened to rock music and the last popular music I listened to was “Kay Kayser and his Kollege of Musical

Knowledge” in the 1940s. I had to overcome my immense prejudice against popular music. My tastes were classical music, like my father’s. I identified most popular music with the activities of those I shunned as a youth – normal, extroverted, fun loving, and not very intellectual. By the end of the course Peter Winkler was having the students, including me, compose a rock song. I learned a lot of social history along the way.

During the second semester I fought tooth and nail with the psychology professor in his course on cognitive psychology. I refused to accept that scientists construct reality. It made for lively classes but I’m sure it was wearying for my colleague who had to get constant flak from me. I also enjoyed helping my fellow students put on two of Yeats’s plays. We memorized the parts, designed and made the costumes, prepared the scenery, and did everything down to printing the playbill.

In my seminar the first semester I had the students talk about a task they mastered or failed to master. A Chinese student taught us to use an abacus. A student who worked for a locksmith taught the class to pick locks. A premed used me as the victim for pulmonary resuscitation. An Iranian student discussed his difficulties coming to the US and going to school without knowledge of any English. In the second semester I divided the class into three groups so they could use their talents effectively. One was a music group that composed and played their own music. One was a writing group that prepared a collective presentation. The art group made a yearbook of our experiences in the FLC.

The students who did the writing chose an apartment house as the theme uniting their stories. Each chose a different person or family and wrote stories about them. They did it as a play reading and each sat in an easy chair with a reading lamp. All the rest of the lights were off except the one lamp by the reader. A piece of his or her story was read, and the light would go off, and another light flicked on and another tenant’s story was told and this went around two or three times to complete the episodes. It was beautiful. It reminded me of Dylan Thomas and his fellow poets reading *Under Milk Wood*.

I ended up with a deep appreciation of how much work faculty heap on students, how varied are their styles of teaching, how much creativity there is in ordinary students who would not fall into categories called gifted, and how difficult it was to do every assignment professors dish out to their students. I learned a lot and even felt proud of my grade in rock music. I got a C.

CHAPTER 76

NEDRA: OVER FIFTY YEARS OF MARRIAGE

Nedra and I were married in Rochester, Indiana, on March 28, 1959. Fifty years later we celebrated that occasion in Ocean Grove, New Jersey with our family and friends. We renewed our vows and I called on my son Anders and my friend, Peter Gary, to do the officiating. Both have conducted weddings using a California law that allowed them to become licensed to do so. Anders did it to help his fellow graduate students who wanted an interfaith marriage and Peter, for much the same reason, did so for his friends when Peter lived in California.

We are very fortunate in having lived a long life and in having a loving family with five children, 12 grandchildren, and three great-grandchildren. If I had to identify what made this marriage so successful, I would single out the compatibility of our two personalities. We both like to learn. We both have a strong work ethic. We enjoy being creative. Both of us have a positive outlook on life. Both of us are enthusiastic about each other's accomplishments. We are flexible in our response to life's unpredictable circumstances. We confide in each other and rely on each other to test out our ideas. After sixty years we still hold hands. And we say, "I love you."

Nedra learned how to sew at an early age. Her mother taught her how to sew and throughout her life Nedra has made clothing for herself, for her family, and for her friends. She learned how to quilt as a child sitting under a quilting frame while her grandmother and her circle of quilters would ask her to push the needle back up as they quilted. As our children grew, so did the range of Nedra's skills with a needle. She began to make plush toys. She

always had several new ties she made for me for my birthday or for Christmas. She made outfits for the dolls the girls got for their birthdays. She often used patterns from fabric shops to make dresses and other clothing, but she also made her own patterns and had that rare gift of seeing something she liked and creating her own pattern for it. The children loved Sesame Street puppets and Nedra made her own patterns for these, creating not only the characters the children took delight in, but Muppet puppets that represented characters in Doonesbury and other comic strips the children enjoyed. She also made historical characters. The children devised their own theater scripts for these puppets and performed these at school or at holiday fairs.

When our youngest child Anders entered first grade, Nedra began volunteering at the University Hospital in Stony Brook. She learned how to become a cytogenetic technician and did that work for about 15 years. I much enjoyed discussing the cases with Nedra and was amazed at how rapidly she could identify individual chromosomes and match them for preparing karyograms. She switched to in vitro fertilization and was sent to Virginia to study at the Jones Institute and learn how to do this complex procedure of cultivating retrieved eggs, fertilizing them, isolating those that had normal meiotic divisions, and preparing the fertilized eggs (or later preimplantation stages) for the physicians to insert in a uterus. This was also a time-demanding career because the fertilized eggs had to be followed carefully.

While Nedra continued to sew in those years of working full time, she could only do a few major projects a year, usually for birthdays or holidays and occasionally as baby gifts for her friends. When she retired from her IVF work, she took up quilting and joined a quilter's guild and participated with a local group of quilters who called themselves "The off the wall quilters." They met in each other's houses, each week circulating to another member's home. Nedra had a talent for quilting and liked to design her own pieced quilts. She collected lots of fabrics so she could choose a palette of colors for her projects. One of her quilts was selected for the Quilt National show in Akron, Ohio. It is the top juried show in the United States. Her theme was, "the yellow brick road," and she prepared a spiral of lines which

required a lot of thinking to cut and piece. She also had a quilted cape she designed that was shown in several cities.

I often go to quilt shows with Nedra. They are very stunning. The variations of standard forms, like log cabin, mariner's compass, and wedding rings, are unending and it sometimes takes a studied look to recognize that such a format was used. Many other quilters just let their imaginations go and they produce quilts that are museum quality fabric art. Some of Nedra's quilts take a long time to complete and she puts them aside and returns to them when she can. One of my favorites is a "postcard" theme in which Nedra designed a square for each port we visited in our first Semester at Sea voyage. Each tells a story.

We both like to cook. We took turns when Nedra was working, and our children were growing up. Both of us believe in using fresh meats and vegetables and we selected a variety of recipes from the American Heart Association cook book to supplement some of the standard cook books. Good food is one of the pleasures of life. We also taught our children how to cook so that they would have these skills in their marriages.

Ever since Nedra began to work full time, we started a custom of going to dinner on Friday evening. We tried out different restaurants, enjoyed a glass of wine with our dinner, and used it to relax from our busy week and to get caught up on what each of us was doing. We call it our "date night."



Figure 76-1

Our wedding in 1959, Rochester, Indiana. From left to right: Nedra's sister Sonya, her father Harold Miller, Nedra, Elof, and Nedra's mother Florence Miller.

CHAPTER 77

TED WEISS

Nedra's sister Sonya went to Ball State University in Indianapolis where she majored in art. She left Indiana for New York City and taught art in elementary school for a year or two. She shared an apartment with two other young women from the Midwest. One, Mary Ellen Pracht, was studying voice and became a singer for the Metropolitan Opera. She later sang Schiller's *Ode to Joy* from Beethoven's Ninth Symphony at our wedding in Rochester, Indiana. The other, Nancy Reilly, became an executive secretary for several corporations. Nedra and I met them when they were all single and just beginning to date. Mary Ellen married the chief cellist for the Metropolitan Opera orchestra. Nancy Reilly married a movie critic for the *New York Times*. Sonya met George Hoover, a neighbor in the building. He had been an editor of the USC campus newspaper and he became a publicist for television networks. George and Sonya married and had two children, Geoffrey and Robby. The marriage failed after about seven years and Sonya began working as free-lance artist. One of her talents was campaign art.

Sonya liked politics and she became active with the local Democratic Party Clubs. She was a liberal and followed their gradual triumph in taking over the Democratic party from its former boss-dominated political machine. When I grew up, I remember how that worked. I was reading the *Daily News* while going to work as an elevator operator about 1954 and noticed a story about a passenger in a taxicab who found a brown paper bag with \$10,000 in it. He turned it in to the police and notified the press. The reporters checked with the cab company and the previous passenger was the Tammany boss of New York's Democratic Party, Carmine De Sapio. De

Sapio denied any knowledge of either seeing the paper bag in the cab or having a clue how it appeared in the cab. I heard later from my brother Roland that the money never went to the finder. I went back to Indiana University and lost the follow up on the story. What I do remember is mulling over the incident and figuring out that this might have been a purchase of some appointment to City government. Eventually DeSapio was ousted from his position after a defeat by the reform democrats.

One of those reform democrats was a young assistant district attorney who had graduated from the law school at Syracuse University. Ted Weiss had joined Ed Koch and other reform-minded liberals and led the door-to-door campaigning that voted them into office and defeated DeSapio in his own district. Ted received a congratulatory letter from Eleanor Roosevelt who backed the reform democrats. It was one of Ted's prized possessions and he kept the framed letter with him in his office throughout his career.

Sonya met Ted when he was in the City Council of New York. Ted was a West side Democrat and active in the Ansonia Democratic Club. Sonya had done campaign literature posters for other candidates in the club. Ted was born Tibor Weisz on September 17, 1927 in Gava, a small village in northeast Hungary. His father was an erratic but colorful figure, plagued with alcoholism, who had a stormy and ultimately unsuccessful marriage that left two children, Ted and his sister, in their mother's care in a nearby village, Haydubugus, where her mother lived. Ted's mother was Gyngi Weiss but in the US she used the name Pearl. A curious feature of the Weiss family in Hungary was the tendency of Weisses to marry Weisses. In 1938 when Ted was 10 years old, his mother thought it was essential that they leave. She had a cousin, Samuel Weiss, in New Jersey who had become a widower and she agreed to marry him and help him raise his family. Ted recalled the thrill of seeing the Statue of Liberty as their ship entered New York Harbor. Ten of Ted's relatives who stayed behind perished in the Holocaust. Ted's father contracted tuberculosis in the concentration camp and died of that disease in 1958. Samuel Weiss had six children from his first marriage. His wife had committed suicide leaving him with three children who were still young. He had come to the US in 1910 and by the time Pearl arrived he had a profitable factory manufacturing.

Ted grew up in south Amboy, New Jersey. He appreciated the home America provided him and he was an enthusiastic boy scout. He was too young to serve in World War II, but he enlisted in 1946 and was sent to Hiroshima as a radio operator. It was his first realization of the devastation that nuclear war could bring to humanity. Hiroshima was still a city in shambles and during his years there he got to know the magnitude of the physical illnesses from radiation sickness and the utter chaos of life for the survivors. It made him a foe of nuclear weapons and an advocate for the peaceful solution of international disputes.

He returned to the United States and applied to Syracuse University which had a combined BA and law degree program. While there he became active in the World Federalists. He liked the ideal of a world government that would pattern itself on a model similar to the individual states in his adopted country. After completing his law degree he decided to move to New York City and practice law and seek public office. It was Ted's long-term goal to become a Congressional Representative. He thought New York City, with its strong Democratic Party, would be the environment where he could build a political alliance of liberal Democrats.

Ted began as a public defender and later served in the district Attorney's office. His law partner, Dudley Gaffin, became his political campaign manager. He became a City Councilman and attempted to run for Congress losing in a very close vote and being more soundly whipped in a second effort. He realized that he needed to build a reputation among voters as someone who cared about them and their issues. Ted served 13 years in the City Council. He learned that his constituents wanted neighborhoods that were not congested, blighted with buildings that choked off the sunlight, and relatively free of drugs and crime. Ted pursued these issues. His constituents also feared industrial wastes, the transport of radioactive materials through the city streets, and other health hazards. Ted became an advocate for strong regulation of such potential health hazards. These activities, Ted's gifts for public speaking, and the effectiveness of his staff made him a popular member of the City Council.

Ted and Sonya worked on his campaigns for the City Council. Ted had married a few years after coming to New York City and he had two sons, Tom and Stephen. His marriage failed and he divorced his wife, Zelda. Sonya liked Ted and they began going out. At the time, Sonya was working for the Department of Environmental Health and Safety. She designed posters and signs for them. She asked them to paint their trucks white and make them more attractive and reflective of the public health they protected. Sonya and Ted held off marrying for some five years because each was afraid of a second failed marriage, and they wanted to make sure their four boys would get along if they did marry.

Ted and Sonya did marry in 1980, two years after Ted was successfully elected as a Congressman from his West Side district in Manhattan. Ted carried to Congress many of the issues that were of concern to his district. He was interested in health issues, the quality of urban life, environmental issues, the need for peaceful resolution of disputes with other nations, preparation for an alternative economy when the Cold War would end, Civil rights, equal opportunities for women and all minorities who were bypassed through prejudice, helping to rescue the poor from the neglect and punishment that the wealthy permitted, and veterans' benefits. He was a classic liberal. He had a distrust of totalitarianism of all forms.



Figure 77-1

Ted Weiss and Sonya Miller Hoover Weiss about 1980.

Ted served 17 years in Congress and would have continued being elected in landslide elections that usually gave him 80 to 90 percent of the vote in his district. The district had been Congressman Bill Ryan's who died in office. It was Ryan's campaigns that made Sonya well known as a political campaign artist. Bella Abzug became the Congresswoman after Ryan's death. She vacated the job when she ran unsuccessfully for the Senate and Ted then became the candidate to fill her seat.

Nedra and her sister alternated whose home would be host to the annual thanksgiving and Christmas gatherings of our families. We made sure that if

we held thanksgiving at our house, Sonya would hold Christmas at hers. Our gatherings usually had about 20 to 25 people for dinner and staying over (especially at our house) was a feat, with every floor space filled with sleeping accommodations from cots to make-shift pallets formed from pillows and easy chair seats.

Ted and I usually kept our professional lives separate. He would occasionally ask me about issues of biological hazards from products brought to his attention by his staff. I would ask him about the status of substances I was interested in, such as Agent Orange. I invited him once to talk to our medical students. The Deans were looking forward to hearing a talk about the importance of support for medical research and expertise to safeguard the public health. Instead he talked about scientific fraud, much to their horror. There are few issues more apt to bring fear to a faculty than a government official talking about regulating or inquiring into scientific fraud. That was precisely why Ted wanted to speak to the medical students. He wanted them to know that faked data can lead to harmful treatments for potentially lethal conditions like cancer. Ted also felt that slapping a cheat on the wrists was not proper when the research was supported by taxpayer dollars. Why should we expose and prosecute cheats for military procurement fraud and demand honest accounting, when we look the other way if physicians fake their data and their sins are covered up by universities that want to be spared bad publicity? In practice, academic crimes are rarely prosecuted and punished. The university sometimes does scurrilous acts like recommending a scoundrel to another school to get rid of the cheat. The university may force early retirement as one way to get rid of a potentially embarrassing faculty member whose story would lead to scandal. Ted warned the faculty in the audience that colleges have to be more alert in responding to whistle blowers among fellow faculty, graduate students, and others who observe fraud. If they fail to provide adequate means to protect the legal rights of the accused and the accuser, then Congress will seek legislation to force them to do so. Ted's talk was received with hostility by many of my colleagues who believe that science is self-correcting. Bad science does not get cited. Good science gets verified. But as Ted pointed out, what about the patients receiving bad

medicine because it is based on fraudulent results. Should they be sacrificed while science sorts out its errors?

Of Ted's 17 years in Congress, only a few, in the Carter years, were with a Democratic President. During the Reagan and Bush years, the Democrats controlled congress, but Presidential vetoes made liberal legislation relatively scarce. Ted used the power of the Congressional hearing to bring about change. He did so by avoiding grandstanding and hiring a very competent staff. He investigated any health claims with MDs and PhDs who did the research on these topics and who were interviewed by staff members with a science background. He then got the heads of government agencies to come down and confronted them with detailed questions about the scientific issues involved.

Through these means Ted got Vietnam War veterans the benefits that were denied them for their exposure to Agent Orange. He got the Centers for Disease Control and the NIH to acknowledge that the White House had instructed them not to fund research on AIDS and he kept pushing the need to prevent a major epidemic until the Reagan Administration finally relented and authorized funding for research on this disease. I have no doubts that under the Clinton administration, Ted would have been very effective with the seniority he had built up. Unfortunately his health impaired and then destroyed his effectiveness.

Ted had a heart attack that required by-pass surgery about five years after being elected to Congress. He watched his health, exercised and did the other right things, but some eight to ten years later had a second heart attack while at a meeting in Congress and had to be taken by helicopter to Walter Reed hospital for treatment and a second major by-pass operation. He developed congestive heart failure after the second operation and his kidneys began to fail. In his last four years of office he was noticeably thinner, his skin began to bronze, and he required more naps. He told Sonya that if he resigned his position he would die and the only thing that kept him alive was his desire to represent his district. He utilized whatever time he could muster to instruct his staff. I remember some three or four months before he died we attended a fund-raiser in Southampton. Ted was wearing

a palm beach suit and white fedora and he was dragging himself from the car along the path to the country club entrance. As soon as he was introduced and began to speak a curious transformation took place. He was robust in his delivery, filled with optimism about the changes the Clinton administration would bring about, and looking forward to serving his district. He covered all the issues he felt needed the new administration's attention and he was witty, alert, fielded questions with ease and did not at all convey an impression that he was dying. A few hours later it was all he could do to get back to his car and get home.

He died the day before he was reelected by 90% of the vote of his constituents. He had peritonitis which added to his multiple organ failures. Most of the Democrats in Congress attended the funeral and he had requested his favorite song, *Amazing Grace*, to be sung in his synagogue, much to the surprise of his non-Jewish colleagues. Ted and Sonya had respected each other's religious beliefs. Sonya had been active in the Judson Memorial Baptist Church and Ted was a reform Jew in the Stephen Wise synagogue. We drove in the lead car with Sonya to South Amboy where he was buried by his Weiss family members.

CHAPTER 78

TALENTED STUDENTS

At Thomas Jefferson High School, I loved my association with the students in Arista. We all shared multiple talents, intense curiosity about the universe, and a passion to learn. We were good students, and we liked each other's company. Most of us were in the R or rapid advance classes in the days before there were honors classes or honors programs. It was harder at NYU to find such students. A college assumes, of course, that all its students are there to learn and that they are considerably above average in intellect and talent. I did not find this to be true as a student. Most classes were large, and I did not get to know the brightest in my class. It was also a commuter college, with very few students living on campus and most students took off for part time work or for their homes rather than staying on campus.

At the level of graduate school, all students who are seeking a PhD are indeed motivated to learn and are scholars or hope to become scholars. The PhD in the 1950s was almost exclusively a scholar's degree in my field. There were no commercial outlets for geneticists except in agriculture and those students got their PhDs generally at "cow colleges," such as Cornell, Missouri, or Purdue, where an agriculture school was affiliated. Even in such schools there were outstanding geneticists in corn genetics of Nobel stature. I learned that many of my fellow graduate students at Indiana University were also interested in other sciences, literature, history, music, or philosophy. They varied, of course, but I rarely found an individual who was so immersed in one field that all other knowledge shriveled away.

When I entered academic life, I found that my colleagues also fell into this tradition of broad interests. They were scholars who liked reading

newspapers and magazines, who regularly read trade book fiction and non-fiction, and who took an interest in society whether their political outlook was conservative or liberal. I also noted that whether I was in high school, undergraduate college, or doing university research as a student or as a professor, that my peers were often idiosyncratic, had exotic lives, or overcame a lot of personal hardships. Because I see so many students, it is these whose lives have been most apparent to me.

I am sure the six students I helped see through their PhD degrees were not unrepresentative of PhDs among my colleagues. In fact I know it to be true. I spoke to a lot of graduate students at UCLA and some of them were struggling with their sexual identities, some were experiencing divorces, some were products of stressed homes where the parents were divorced, and some had survived physical or mental abuse from a parent. I also learned that some had difficulties with their sponsors. Some were sexually abused by them, some had love-hate relations with them, some were bullied, and some felt neglected. Academic life is not much different from other ways in which people make accommodations with the world they experience. A few can't take it and commit suicide. I remember one such graduate student in developmental biology. He was a high achiever, loved developmental biology, and was perfectly happy with an academic life. His father was unrelentingly obsessed that homosexuality was a condition worse than death. His son was gay and could not reveal his sexual status to his parents. I learned of his homosexuality from my friend Vincent. He went on a postdoctoral fellowship to the Carnegie Institution of Washington in Baltimore and shortly after he completed his first year, he committed suicide.

Undergraduates are very vulnerable to life crises. They go through a rough time with broken romances, lost friendships, alienation from parents, and rejection by their peers. Some are bizarre in their behavior, as much to attract attention, as to repel others from helping them. Their sense of self-worth is so low they don't want help. I remember one immensely talented poet in the Honors College. We tried for two years to salvage him. He wore leather gloves to class. He didn't sit in a chair, he slid off it and sat around the chair. He undulated into a room, his long neck bobbing his head left and

right, up and down. He made strange noises. He never turned in an assignment. But he wrote stunning poetry. He borrowed money from me and never returned it. He destroyed property, removing the plastic scuff protectors from the bottoms of chairs. He hated his parents and sulked if they were present at a university function. He found some satisfaction with a homosexual love life and shortly after he began a sexual relation, he came out with violet triangles on his clothing to proclaim his identity. I had hoped this would give him enough self-esteem to work on his courses instead of cutting them. Nothing changed. He dropped out of academics and went to work in a fast-food restaurant. I heard years later that he was going back to school. I hope he found the motivation that eluded him in the years of his need. I could not help him. I wanted so much to restore his battered sense of self, but he was so hostile to adult authority, that my existence itself as Master of the Honors College was threatening to his misery.

I had more success with other students. Some were struggling with inept attempts to date or maintain a relationship with a person they loved. These were typically heterosexual romances that fizzled. Such failed relations usually accounted for a drop in grades or a change in personality that I would note among my students. Much more difficult were the students with deeper traumas. These included students whose parents were just entering a divorce, students who were physically or mentally abused by their parents, and those living in the turmoil of an unhappy household. What surprised me among the faculty as well as among the undergraduates was how often these were associated with very creative and successful students. We like to think the opposite. I do not deny that some of these horrible circumstances can overwhelm a student and force the student to drop out, attempt suicide, or change goals. They can also cause a plunge in grade point average. But they seem to be in excess among our most successful faculty. Of the first twenty faculty and administrators that I invited to the My Beginnings series of autobiographical lectures, eighteen had traumatic or atypical childhoods with disruptions of war, parental divorce, psychosis of a parent, poverty, being raised by grandparents, being an outsider (tomboy, rejecting traditional gender roles, anti-Semitism, racism), or having a parent who was idiosyncratic, alcoholic, or psychotic.

When I first came to Stony Brook, I had one student, Wendy Fein, in my Biology 101 course who was an enthusiast for learning and what I was teaching but she just couldn't bear down and do well on examinations. She had a C average and no real sense of what she wanted to do. She was witty, filled with school spirit, and enjoyed being among her students. She thought of law school but her LSATs were pathetic. She did not have an average to compete for medical school. She also had the bad luck of going out on a date with someone her mother met in a class she was taking. There was a whirlwind romance and Wendy entered a marriage for which she wasn't prepared. It lasted less than one week and was annulled. She then got very ill and she was diagnosed as having SLE (systemic lupus erythematosus). She recovered with cortisone therapy and became motivated for a health career. She went to chiropractic school and did well, finishing up and getting married to a person who was very caring and loving. She had a practice for nearly five years and was quite successful working with patients, giving them hope, and steering them to specialists when she couldn't handle them. She died of her lupus or complications from the years of relapses and treatment. It was a tragedy for the family and for her classmates who were shattered those medical skills, whether conventional or not, could not save her life.

Her cousin, David Wiener, worked for me on a project in which he studied traits associated with SLE patients that he gleaned from medical records at three or four hospitals that were willing to provide that information. I wanted him to get some laboratory experience that he might use in a career in human genetics. Nedra at that time was working in cytogenetics and I sent him to Dr. Trunca's laboratory where he learned karyotyping and chromosomal disorders. He also took his skills in scuba diving and an interest in sea life to help rescue a whale, and while doing so he obtained a sample of its cells and prepared the karyotype for it. He went on to Cincinnati for his PhD and after a post-doctoral session in Philadelphia he was hired by the University of Pennsylvania and became a successful scholar in AIDS research. He is still there working on techniques to promote antigen formation using injected HIV genes as a means of permanent immunization against the virus that causes AIDS. David was

unusual in having a stressed home life growing up, the trauma of his cousin's death from lupus, and a B rather than A average upon graduation. Despite these features of his undergraduate achievement that would (and did) block him at most schools, he had tremendous enthusiasm for research and an inventiveness in doing it. He was recently made Vice President for Research at the Wistar Institute. He has already accomplished more than most of his classmates with the high averages and high MCATs or GRE scores who went to more prestigious schools. Why does this happen?

It was not until I read the Goertzel's *Cradles of Eminence* that I appreciated the reason for this. The academic world shows a bias for high achievement in grades and test scores and tends to overlook the proven enthusiasm and accomplishments of students for undergraduate research. Also there is no guarantee that high motivation will win the day. Some students may be unlucky and not hit it off with a sponsor or a project. That makes most admissions committees go for the high academic achievers and those with high test scores. At least there is the confidence that such students will do well in their coursework.

I have some reservations about precocity. I am strongly attracted to those who can do well at an early age. The prodigy fascinates us because we know that at the same age, we had no way of doing as well as these students whether their talent is music, mathematics, art, or scholarship. Two students fell into the prodigy category. One was a mathematical genius who was 16 when he entered the Honors College. His father was a college professor and he felt comfortable in the world of books, ideas, and standardized tests. He was arrogant and mischievous. He programmed my computer so all the letters fell from their sentences like a snow storm. On another occasion he accidentally or deliberately introduced a virus which destroyed all the contents of my hard disc. He enjoyed sabotaging the soda machine in the Honors College lounge and working with two other students on a trick of the week which I put up with. On one occasion he sabotaged a can of tuna so that the oil seeped out on my table. He had a hostility to authority and my only success in getting to know him and having some degree of conversation with him was to play chess with him. He regularly trounced me. I admired many of his traits. He said he liked to take courses

that challenged him, not ones that he could get an A in. He also worked out the proofs of everything he encountered. He rejected algorithms and other short cuts to learning. He did not have a gift for research and was unable to complete a double major in physics and mathematics and ended up going to the University of Pennsylvania for his PhD. I do not know if his personality mellowed out, but he had a productive academic career in mathematics before he switched to apply his skills to the financial market. His difficulties with his classmates were mostly ones of immaturity. A student may be brilliant in class work but socially still be a child; and having to compete socially with students two years older on entry is difficult.

Equally difficult was a sixteen year old with an unusual background of an English mother and American father. The student had a tremendous curiosity about everything and a passion to read. He collected books, read avidly, knew the history of antiquarian books, and spread himself across biochemistry, history, literature, and creative writing. He spent a year at Oxford and his tutor told him he was the best American student he had in 30 years of teaching, and he would guarantee him an opportunity for a PhD if he came there to study British history. Instead he chose to pursue a PhD in molecular biology. He later switched and became an antiquarian bookseller. His young age was a problem in his relations with his suite mates and with his judgment. It is not unusual for such young students to find themselves in scrapes and their judgment seriously questioned. I cannot generalize from a small sample. I know of only three sixteen year old students who attempted a college education and all three have had questions about their maturity as they pursued their careers and in each case it was not a bias against youth itself.

One of the most talented students I have encountered is Owen Debowy. He came to the Honors College at the time I had an office in one of the residence halls. He was a frequent visitor and I would see him roaming the halls, in stocking feet, reading a book. He loved learning and excelled in my Honors 101-102 course with some of the most original essays written in the eight years I served in that program. Owen was also ruthlessly honest and hard on himself. He read every assignment. He took all the requirements seriously. He spoke his mind and did not hesitate to challenge me or other

teachers in the course if he felt our views were off the mark in interpreting a text. He was also considerate and helped his fellow students and very generous with his time to those who asked him.

Owen was unusual only because he was a nearly straight A student who was learning disabled. In his childhood he had difficulty with eye-hand coordination, and it took him a long time to learn to write or print. He had difficulty in his class work and his parents were told he might be retarded. His brother was his hero and read to him and encouraged him and had faith in his abilities. Owen learned to compensate for his defects through years of special education programs that supplemented his regular class room work. By the time he was in high school he became an outstanding student and graduated near the top of his class (6th among some 600 graduating seniors). He still needs a computer to type his essay examinations so his instructors will not be biased against his difficult handwriting. He is a scholar with a scholar's love for learning everything. He completed his many years for an MD-PhD program, and I had no doubts if he chose that path, that he will be a first rate scholar and contributor to neurology or psychiatry, the areas that attract him most because of his own intense experience of using a damaged mind to excel. He decided after getting his MD to become a pediatrician and he now practices in a hospital in Massachusetts.

Equally impressive, but very different from Owen DeBow, is the career of Shari Cohn. She was a dishwasher in my undergraduate research laboratory and used to listen to the conversations of the other students about genetics. She was a psychology major. One day she asked me about females who are carriers for red-green color deficiency. She wanted to know why they saw color if half of their cells expressed the red-green color deficiency. She was referring to a phenomenon called X-inactivation in which a normal female has half her cells expressing her father's X chromosome and the other half expressing her mother's X chromosome. After discussing the genetics I encouraged her to try out an idea she had of testing obligate carriers under more limited lighting conditions. She designed a shadow box in which a bulb with a rheostat allowed her to reduce the amount of light and I sent away for a set of Ishihara plates, which have numbers composed

of colored dots in a background of colored dots. Shari's undergraduate work did demonstrate that under these reduced lighting conditions obligate carriers made more errors reading the numbers on these plates.

For her master's degree in psychology she worked on this project with a colleague, David Emmerich, who used more effective equipment to test these subjects. That work led to a publication in *Vision Research*, demonstrating the phenomenon Shari had found. When Shari considered going on for a PhD, she surprised me by saying she wanted to apply for a fellowship in Scotland to study extrasensory perception. I am a skeptic of such phenomena and the history of most of the research in this field has so far not demonstrated a useful way of seeing future events before they have happened. Shari studied "second sight" which is extensive in Scottish cultural history and was first reported in Roman historical accounts of ancient Scotland. She studied Gaelic, interviewed persons who claimed to have had such experiences, and showed they ran in families. I am not convinced Shari's data show a genetic basis for this. I suspect people who have this belief are more comfortable with others who share this belief and end up marrying them and many of their children grow up believing what their parents believe. But Shari's dissertation was excellent because it was interdisciplinary and showed the many aspects of this belief in Scottish society. Shari lives in Edinburgh. Her husband is a mathematical molecular biologist on the faculty of the University of Edinburgh, and Shari divides her time as a mother, as a therapist, as a scholar studying second sight, and as a bassoonist in amateur symphonic orchestras.

Talented students come in all varieties. Some are a delight to parents and teachers and find no difficulties in their consistent success. How many become creative contributors to their fields is still much debated. Some compensate with unusual energy, focus, or ambition and succeed by hard work, imaginative insight, or unusual good luck of matching their personalities to sponsors who feel at home with such students. All high achieving students have some qualities in common. It is much easier to teach a class with them in it. They make it come alive with excitement through their insights and their capacity to stimulate each other and their teachers. They form a community much faster and have enormous respect

for each other as fellow scholars. Competition becomes less significant than learning from each other.

CHAPTER 79

WRITING FOR COLD SPRING HARBOR LABORATORY PRESS

In 1997 I attended a lecture at Cold Spring Harbor Laboratory. Jim Watson was talking about the history of Cold Spring Harbor Laboratory Press [CSHL Press]. I knew of the press primarily from its annual red covered volumes of the Symposia on Quantitative Biology as they were called in the 1930s when Reginald Harris first got them started. The Symposia varied in emphasis but after the 1950s they were almost all on genetics and evolution. Watson discussed how important those volumes were in making the Cold Spring Harbor Laboratory internationally famous and how prestigious it was to be invited to the conference to give a paper. He also mentioned the additional ways the press expanded with manuals for their courses on new molecular approaches to biology and monographs on new organisms applied to basic research, especially in the fields of molecular biology, cancer research, and neurobiology. In the last part of his talk he discussed the role of a non-profit press as part of the Cold Spring Harbor Laboratory. He argued that it should accept losing money publishing books on the history of genetics and eugenics because it preserves the history of how our fields developed and allows us to avoid the mistakes it has made. He mentioned the unsavory reputation of Cold Spring Harbor laboratory for its endorsement and promotion of eugenic views that were odious, and he cautioned that if we do not publicize our own past involvement we run the risk of repeating such errors.

After the talk I went up to Watson and asked him if he would be interested in looking at a manuscript I had written on the history of “unfit people” and how that idea entered into the eugenics movement. He said he

would be happy to do so. I sent him the manuscript and a few weeks later I got a letter from the Director of the CSHL Press, John Inglis. He said Watson felt this was a worthy book to publish and they would be glad to send me a contract. I was much delighted that this work was published by CSHL Press. It appeared in 2001 with the title *The Unfit: A History of a Bad Idea*. [see [Chapter 30](#)] I had originally intended to call it “The Unfit: From the Sin of Onan to the Smoke of Auschwitz”, but Peter Gary felt it would be misinterpreted by Holocaust deniers as associating (or justifying) the Holocaust with Biblical acts of genocide.

I had begun the work at Indiana University when I was a Visiting Fellow of the Institute for Advanced Study and completed it at Cold Spring Harbor, using their archives to follow the history of the eugenics movement when it moved to Long Island. I was pleased with the care shown by the editors and the ease with which I could converse with people who worked exclusively with scientific books. The book came out while Nedra and I were at Semester at Sea.

I began working on a history of classical genetics and spent a good number of days at Meyer House in the Banbury Center component of the CSHL campus. The reprint collection that McClintock asked me to take in the 1970s was now in the basement of that residential building and I set up a lamp on a card table and read in the solitude of that setting. I had donated the reprint collection again to Cold Spring Harbor Laboratory as I prepared for my retirement from Stony Brook and learned from Jan Witkowski, the Director of the Banbury Conference Center of his interest in it. I called my book *Mendel's Legacy: The Origin of Classical Genetics*. I argued that the shift from Europe to the United States about 1900-1920 in genetics came about because of the rise of the American graduate school with its multi-disciplined departments and more democratic relations among faculty and graduate students. It appeared in 2004.

My next project was an expansion of one of the themes of my biology 101-102 course. Why is it that some scientists are motivated by good intentions but somehow their work results in harm to society? Consider radiation damage from x-rays and atomic radiation. Consider Chernobyl.

Consider Hiroshima and Nagasaki. How about DDT and pest control? How about the egg shell thinning that led to massive deaths of birds in their nests before they could hatch out? How about eugenics? We know that its harms far exceeded its idealized benefits which virtually were non-existent in practice. How about thalidomide as a sedative and its unintended production of babies born with missing or deformed limbs? There is a litany of such cases and I explored what went wrong and how it could have been prevented. I called this book *Times of Triumph, Times of Doubt: Science and the Battle for Public Trust*. Actually I had a working title of “Good Intentions” but Alec Gann came up with the far-more effective title it bears, which is another reason I like publishing my books with CSHL Press. It appeared in 2006.

In 2008 I published *Neither Gods nor Beasts: How Science Changes Who We Think We Are*. I explored the issue of human nature, a concept that is as old as philosophic study. We like to think we can pin down a universal set of human behaviors but often these turn out to differ in different cultures and many of them are contradictory making a genetic basis for them dubious. The conflict is not solvable because both environmental factors and biological factors (such as hormones and our neurobiology) differentiate humans and most of us could live many different lives depending on the luck of our circumstances. That was largely “old hat” to me, and I was more interested in showing how a knowledge of our anatomy, physiology, cellularity, chromosomes, and genes had changed the way we think about fertility, birth defects, life expectancy, family size, age of marriage, sexual orientation, vulnerability to cancers and other diseases. Our expectations vary culturally and with time. Our ideas of race, sex, class status, capacity for education, and mobility have all changed profoundly in the past two centuries and those who explored those changes often found it was science that illuminated new insights and destroyed old prejudices about human expectations.

My next book, 2011, for Cold Spring Harbor Laboratory Press was *Mutation: From Darwinian Fluctuations to Comparative Genomics*. It is a history of the idea of mutation but also a history of vocabulary change in a science. I explore how the terminology for variation has changed since

Darwin was a youth and taking an interest in natural history. The terms of hobbyists and breeders were mostly in use and these gradually were replaced as new findings arose through experimental biology, the chromosome theory of heredity, population genetics, breeding analysis, the induction of gene mutations, and the molecular characterization of gene structure through DNA sequence analysis and the induction of molecular mutations with chemicals.

My last book for Cold Spring Harbor Press came out in 2018. I called it *How Scientific Progress Occurs*. It explores the applications of Kuhn's model of scientific revolutions through paradigm shifts. It is a very popular theory that many fields other than the physical sciences have used as models for their own histories. I found it failed for all the major areas of the life sciences I carefully examined. Instead I call the process for the life sciences, incrementalism. I argue that as new tools are introduced, new data create new associations that bypass controversies of stalemated fields. These new tools, experimentation testing data from them, and new patterns and insights for coming together of separate fields through new tools are incremental in their formation of new fields of science.

It would be nice if all my books were accepted and published but I have many books that are in first or later draft status that have not been published. Some are not that well developed, especially my attempts at fiction (four novels), a memoir, and living a meaningful life in a world that makes it difficult to do so (what one publisher described as "save the world books"). I also have a book on the history of Agent Orange that is still languishing because it neither exonerates its use in the Vietnam War nor does it condemn it as grossly damaging to the health of US veterans and their children. What I often do if a book does not get a contract on first submission is to put it aside. I will read it some three or six months later and this gives it a fresh impression so I can see the weaknesses in it.

I will try another publisher (usually an academic press) as I did when CSHL Press turned down a book I was working on for the history of sex determination and differentiation. I was fortunate that IU Press liked it (see [Chapter 31](#)). I won't keep trying, however, and I don't get discouraged

when a book is rejected. I just barrel ahead and do another book on a different topic. Depending on the book's subject and the nature of documentation I need, I can write a first draft of a book in one or two months (and actually see it published) or I can take seven years (the amount of time it took to do all the readings and interviews for the Muller biography). I have learned to use the internet for access to original articles and books that are described as "open access". That saves a lot of time when writing at home. I do try to check the accuracy of information from Wikipedia because I've found errors in some of the articles and serious omissions on some of the topics. But it is useful for finding references and for getting other links for additional information. Using computers is not my forte because I am old and until ten years ago, I was still writing my drafts with a fountain pen. But now I do all my drafts on the computer, and I like the ease of editing it provides. What I have learned is that writing is fun no matter how I do it. Keeping a diary for most of my life also makes it much easier to write rapidly and with some coherence.

I tried using a literary agent recommended to me by Carl Sagan. He was enthusiastic and liked the book I was writing (*The Unfit: A History of a Bad Idea*) and he tried hard to get trade book publishers to take it but after a year he gave up and, as I noted earlier in this chapter, it was Jim Watson who rescued the book by recommending it to CSHL Press.

I do not know if books a generation from now will be almost entirely published on websites. Someone will develop a user-friendly software in which one enters a manuscript and the computer organizes its chapters into book format. I imagine one choosing a representative layout of chapter headings, subheadings, and the preferred type-font and then pressing an icon which provides a view of the entire book. Such self-publishing will compete with more carefully edited and reviewed manuscripts that will bear the cachet of a respected publisher. Those desiring a paper copy will be able to obtain it at a reasonable price. I would certainly use that future software for family histories, memoirs, and similar limited audience readers.

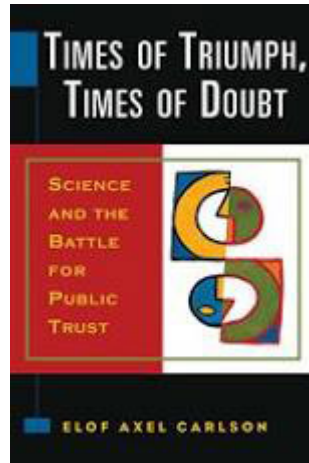


Figure 79-1

Times of Triumph, Times of Doubt is based on the unintended consequences of science. I discuss LSD, DDT, Agent Orange, Radiation, DES, and other applications of science in our lives that led to health hazards or environmental disasters. I recommend more regulation and a respect for objective regulation in applied science.

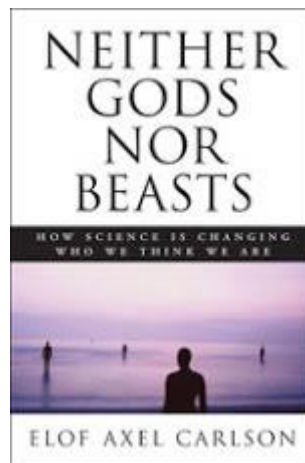


Figure 79-2

Neither Gods Nor Beasts discusses the human condition, why it differs from human nature, and how the human condition changes. I argue that knowledge of science is transforming who we think we are, with more choices, control, and understanding of our universe and the molecular basis of life.

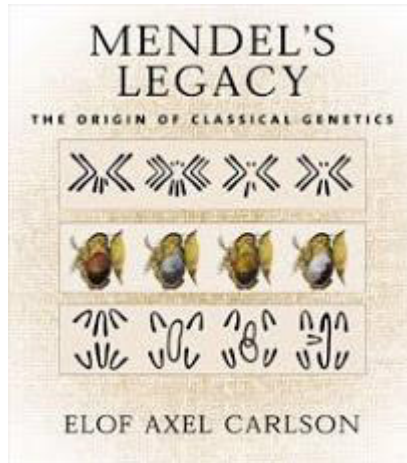


Figure 79-3

Mendel's Legacy is a history of classical genetics. I trace the sources of cell biology, breeding analysis, developmental biology of reproduction, evolution, and the first forays into the biochemical and molecular basis of heredity.

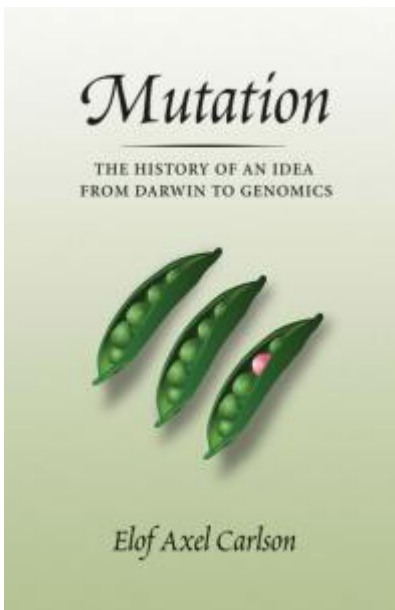


Figure 79-4

Mutation is a history of that concept. I show how the concept has changed from nineteenth century ideas of fluctuations, atavisms, and sports to the twentieth century concepts of gene mutations, distinguishing them from chromosomal rearrangements and other aberrations. I follow the concept into molecular concepts of nucleotide change and loss and gain. Today epigenetic changes have been added to the working activity of genes when they express their functions or turn them off.

CHAPTER 80

MOVING TO INDIANA

We decided to move to Indiana because we were getting old. In 2007 Nedra fell carrying a load of clothes but she said since she was well padded and thick boned it wasn't a problem and she was sure it was just a misstep that had nothing to do with aging. I thought that was a classic rationalization. I did not make it for myself when some six months later I fell down the other small staircase in our kitchen. I remember placing my foot expecting a step and the next thing I knew I was flying down the stairs and thumped hard. I wiggled my toes in my shoes and knew I could feel, and I had voluntary control over my feet. But I had bruised a muscle as it turned out, because I couldn't get up after resting about 15 minutes on the floor. Nedra called our physician, and he ordered an ambulance for me to go to the emergency room at the University Hospital. The x-rays showed no break. I was given a brace and a cane, and I told myself, "Welcome to old age".

We considered our options. We could move to an assisted living facility in the Three Villages, Port Jefferson having an excellent one called Jefferson's Ferry. I had lectured there and had lunch there with some of my retired colleagues. But Nedra and I didn't feel ready for assisted living. A second option would be to sell our house and buy a ranch house in the area. We both felt that if we sold our house, it might be better to go to Indiana where we could see Nedra's relatives and visit her mother Florence and Florence's sister Shirley who were at Wesley manor, an assisted living facility in Frankfort, Indiana. We both liked the idea of buying a house in Bloomington, Indiana. IU had fabulous libraries I could use for my writing

and Nedra knew it had an active quilt guild. We both knew it had a large Unitarian-Universalist Church where we could find lots of activities.

If we had our falls a year or two earlier, we would have been on the top of the housing market. Our home in Setauket was appraised for tax purposes at \$860,000 and we were paying \$19,000 annually in property taxes. But we happened to put our house on the market when the bubble broke and we tried for almost a year to sell it at \$600,000 but eventually had to settle for \$450,000. That was still beneficial because we used that sum to pay off our mortgage in Setauket and buy outright a house in Bloomington without having to obtain a mortgage. It certainly made it easier to live on our retirement incomes.

The house we chose is near a YMCA where we signed up for tai chi and balancing classes on our doctor's recommendation. Our house is situated on a half-acre lot with the rear facing a municipal forest. It has a large upstairs room (the only upstairs room) on a well-padded staircase with a handrail. Nedra uses that room for sewing. I made one of the smaller bedrooms into my study for writing books. Having a smaller home makes it easier to manage. I arranged to be appointed, without salary, as a Visiting Scholar in the IU Institute for Advanced Study. This gives me campus faculty benefits for use of the library and for activities on campus, including the Emeriti house which sponsors monthly lectures and workshops.

So far, I have written and published five books since coming to Bloomington. Nedra has joined the local quilting guild and enjoys her sewing room. She has volunteered to paint and hammer for Habitat for Humanity. We both have visited Louisville, Kentucky where our granddaughter Natalie spent a year in an acting program. We have enjoyed car trips to Michigantown, Indiana where Nedra's cousin Sarah Webb lives. Her husband raises quarter horses so it's nice to look out their kitchen window and see the foals with their mothers. We visited Florence and her sister regularly until their deaths in 2009. Twice a year we drive to Ocean Grove, New Jersey, to attend Nedra's "Off the wall" quilter's retreat. I started a monthly book discussion group, and its members are mostly faculty at IU and members of the Unitarian-Universalist Church. I also serve as historian

for the Unitarian-Universalist Church of Bloomington and wrote a book on its history and do a twice monthly 250-word historical item for the *Prologue* that serves as a newsletter. We've enjoyed going to campus operas, plays, and musicals. Its climate is similar to Long Island's, but spring is a few weeks earlier.

Much of Bloomington and the campus have not changed. The University has added more buildings and the town has doubled its size since we got our degrees in 1958. The downtown square is much like it was when we were students. The rolling hills are characteristic of this part of Indiana. We enjoy the sight of its limestone along the highways and feel we are "back home in Indiana."



Figure 80-1

The Unitarian-Universalist Church at Bloomington, Indiana is on the northeast corner of Indiana University on Fee Lane. I serve as its historian.



Figure 80-2

Our first two great grandchildren, Annabel and Zeppelin Begley, were born in Ohio. They are the children of our granddaughter Vanessa Woodward Begley and her husband Daniel. Vanessa is our grand daughter from Erica Carlson (Erica Woodward before her divorce).

CHAPTER 81

GROWING OLD

I turned 85 on July 15, 2016. My first graduate student, John Southin, said he thought I'd never make it to 35 because I was so over extended in my activities. I never thought I'd make it to 65 because of the early deaths of my parents, my father dying at age 60 and my mother dying at age 67. My brother Roland was 44 when he died, and my brother Ben was 59. But by not smoking, usually avoiding desserts, minimally using barbecued or fried foods, cooking from fresh meats and vegetables, and living a relatively calm academic life, I have beaten those odds against me. Also, I can't discount having received some of my Grandmother Amanda Carlson's genes for longevity (she lived to be 93 in Stockholm). But number of years does not measure how one feels. I felt physically in excellent health until my mid-sixties when I first began to feel the stress of prolonged walking. I was developing arthritis without being aware of it because I did not have achy joints. Mentally I have felt alert, capable of doing complex puzzles (like medium and hard Sudokus even using a ball point pen to do them. As for writing and creativity, I still feel capable of writing books and articles in my 90s. Senior moments are still relatively rare for me. I might forget a name but I can usually dredge it from memory with effort. That tells me that senility was not among my risk factors.

But I do feel old as five more years have passed. Scare number 1 was falling down the stairs in our Mud Road house as I went from the kitchen to the downstairs family room. It's one thing to turn an ankle or to slip on something but to suddenly find yourself falling with no reason or hint of misstep is scary. I checked out likely suspects, like having a brain scan to make sure I didn't have a lesion in my brain. I didn't. I didn't have balance

problems when the neurologist checked me at the hospital (I did not break anything except for the bruised muscle in my thigh). So I now use a cane, a metal one that the hospital issued to me while I recovered from the bruise. I use it in winter, when it is raining, when I have a long distance to walk, or if I am going to be standing for a long time. I also use it if I am on rough terrain or if I am going to climb a lot of stairs. Of course, I now look upon a banister as a friend and shuddered when I saw President Obama run down the stairs of his Air force One never touching the banisters. While a cane often evokes pity in the eyes of younger people, I find it helpful as a reminder of my uncertainty while I am moving about.

Scare number 2 was the price of health care for the uninsured who are old. I have Medicare A and B as a citizen's right so most of my serious problems would be covered. I am unusual in never having stayed overnight at a hospital except at camp Atterbury in Indiana for my draft board physical. It cost me \$8,000 for my hearing aids (Nedra also had the same expense). It cost me \$20,000 to have five implants put in my jaw. That is expensive and I do not know why they cost that much but I suspect it is partly the health providers' self-perception of what their income should be. The Depression era poor doctor who accepted eggs or labor in return for providing surgery and other health needs disappeared after wide-scale health insurance was part of union contracts. Those sent costs zooming. When employers began to balk, the federal programs entered. Now those are being hectorred by law makers who feel taxes should not provide those services. Nedra and I have for many years paid for long term health insurance if we live to an advanced age and need to finish out our lives in assisted living with nursing care. Nedra's mother advised us to do so years ago when she saw relatives lose their farms to pay their costs in a nursing home. I used to think when I was young and going to high school that we were too poor to get sick. That was a fantasy and nature does not work that way. You can be careful, but there are many sicknesses, accidents, and outcomes of our genotypes that we rarely can control or prevent. "Life the lucky" as Muller called it, works both ways – for our species' survival and for our potential to enjoy life and contribute to human welfare.

My libido crashed when I was 68 but we still hold hands and kiss. I did not want to try Viagra, testosterone therapy, or aphrodisiacs because I did not want to risk a heart attack. About age 65 I began to take statins for my blood cholesterol levels and I cut back on fats in our meals. My father's heart attack reminded me of that risk and just as I never tried LSD because of my mother's psychosis, I have not tempted fate with my family history looming as a reminder.

Aging has its irritations, like having an enlarged prostate gland (and I take medication for that) and I wake up usually once a night (about 2 AM) to visit the bathroom. My urethra has turned into a twisted passageway and sometimes I deliver a spray rather than a stream, which solved the mystery of why men's urinals are splattered with urine at their floor level. It is not bad aim. It is, I believe, mostly due to the deformed lumens in the aging urethral passageway. So far, I am lucky. I do not need a male diaper.

Nedra and I signed up for Tai-Chi courses at the YMCA which is near our Azalea Lane home. We had two years of Tai chi for balance and we are now in our third year of Tai Chi for arthritis. We both love the gentle and graceful movements of these exercises and they do involve all our joints through warming up exercises and the basic Tai-Chi movements of hands and legs.

There are a few benefits of aging. My first delight was getting reduced prices for tickets at movies and other events. Sometimes when I am at an airport or train station, I am taken to a special line and get on first or I get my passport examined without having to wait a long time. It helps that I have a cane, although my white hair, wrinkles, stooped posture, and somewhat doddering walk gives me away. I have resisted being escorted in a wheel chair at airports when I have to make connections or go to the baggage claim area. But reality tells me that someday I will not have that choice.

Most of all I am grateful that I no longer have to earn a living. My retirement was a good one, with TIAA-CREF provided by Stony Brook University and both Nedra and I getting our Social Security. I planned to write a lot after retiring and that has come true. If I am lucky and live into

my 90s, I still have five or more years of opportunity to write. The older I get, the harder it will be to travel. The older I am, the harder it will be for me to keep up with my fields of science which are changing rapidly and becoming less recognizable to me as new tools and findings change the way science is done. But no matter how old I am, if my brain continues to function well, and if my aches and pains are manageable, and if my diminished sense organs hold out, I will continue to enjoy each new day and capture it in my diary and thank my good fortune in savoring what I can from this final stage of my life cycle.

CHAPTER 82

CLAUDIA CARLSON (1956-2016)



My daughter Claudia was born October 16, 1956, in Bloomington, Indiana. Claudia had an allergy to lactose and in her infancy, she lived on a soybean substitute that reduced the projectile vomiting that sometimes followed her breast feeding. The condition was called pylorospasm. Claudia was a happy baby and not at all colicky. After Claudia's first birthday, Helen decided to end the marriage. Partly we drifted apart and partly she felt her sexual orientation was making her life a lie. She would always prefer the love of a woman to the love of a man, she told me, "Even when I am a grandmother." The mid-20th century was tightly closeted, and the feminist movement would not find support until after the Civil Rights

movement led the way for social change and better opportunities for women in academic careers.

I adjusted to the separation and kept visiting Claudia on weekends while Helen finished her master's degree in the English Department. When I began dating Nedra, I introduced her to Claudia, and we would play outdoors on campus during good weather or play "hide and seek" in the corridors of Jordan Hall. In the Fall of 1957, Helen got a job at Pennsylvania State University, and I worked out a visiting schedule for Thanksgiving, Christmas, and Spring breaks. I would fly out to Pennsylvania and then play with Claudia while staying at a nearby motel. When Nedra and I had graduated, she worked in Chicago and I was teaching at Queen's University in Kingston, Ontario. I took the bus down to State College to visit Claudia on holidays.

Claudia's personality was shy but happy. She loved my visits and cried when I had to go back to Kingston. In 1959 I married Nedra and a year later we moved to West Los Angeles, and I joined the faculty at UCLA. Helen also moved and she and Claudia were in Baton Rouge where Helen taught at Louisiana State University. Helen moved frequently because she did not have a PhD and thus lacked a tenure track and had to plan each year as temporary. I would fly east to visit Claudia and when she was five years old, I arranged to bring her to our home in California to spend the summer with her growing family of siblings. Through this arrangement, I got to see Claudia, corresponded with her as she learned to read, and make her comfortable with having two families. She was adored by her younger siblings who admired her as a story teller and organizer of their activities playing games or engaging in art projects.

Claudia's relation with Helen was more difficult. Claudia grew up in seven different college towns. Helen was more engaged with day to day living and was the disciplinarian. I was the visitor who pampered her and when she came to visit Nedra and me, she was treated royally as a guest. But Helen made sure Claudia was steeped in the arts and the humanities. She read to her, introduced her to poetry, brought her art supplies and, as a

college teacher, provided the intellectual stimulation that such homes excel in.

Claudia joined our home permanently when Helen developed lung cancer. She lived only one year after diagnosis and only two years after getting her PhD. It was difficult for Claudia because she was in her early teens seeking her own identity and Helen was expecting a more caring and sensitive attention to her medical needs. It was also painful for Claudia to realize her mother was dying. Claudia had started high school in Albany and continued, briefly, in Brooklyn when Helen taught at Brooklyn College, but transferred to Ward Melville High School on Long Island, when she joined our family at 19 Mud Road in Setauket. Claudia also went to Stony Brook University and majored in English and Art. She enjoyed working on the college newspaper, *Statesman*, and the college literary journal, *Fortnight*. She had a comic strip in the paper and drew spot drawings and wrote articles and poems for the literary magazine while learning how to edit submitted papers and prepare the copy for each issue so it could go to the printers. Those skills she applied to her later career.

Claudia began work in Manhattan as a book designer for Crown Publishers and then worked for Ferrar, Straus & Giroux. She then worked for Oxford University Press and Cambridge University Press. She learned computer skills and became a graphic designer. She added cover design and map-making skills especially for end papers in the front or back of books, researching the maps at the New York Public Library. She began dating her brother John's best friend, David Allen and they got married and had two children, Natalie Allen (now married to Jackson Hardaker) and Caitlin Allen (now married to Andrew Jones). Natalie teaches English as a second language. Caitlin sings in a swing and jazz band and calls her group "Cait and the Critters." Jackson plays the trombone and is in another jazz band.

Claudia's marriage failed and both she and David remarried. Claudia married playwright and lyricist James Racheff who has written and produced musicals and plays off Broadway (*Abyssinia*, *Houdini*, and his most recent play, *100 Views of Otzi*). Claudia and Jim lived in Manhattan on 109th street and Broadway. Claudia took courses in art at the Art Students

League and she was a founding member of the River Writers of Manhattan, a group of about six writers who meet monthly and read chapters, short stories, essays, or poetry to each other and critique their work to encourage their careers. Claudia also began designing covers for books and attended many poetry reading groups at Poetry House in lower Manhattan and at the 92nd street Y. She also would sketch a portrait of the noted poets and have them sign the sketch after they finished. She would frequently do these as water color sketches.

Claudia's first publication was with David. They did a small book for the Ellis Island gift shop on *The Bulgarian Americans* that had a for hire series for different immigrant roots. She was able to interview the artist Christo for the book while he was in New York. Her second publication was with fellow poet Jeanne Beaumont and they co-edited a book of poems about Grimm fairy tales that they called *The Poets Grimm*. Claudia's first book of her own poems appeared in 2007 as *The Elephant House*.

In January 2014 Claudia called us in Bloomington and told us that she had not been feeling well but her physician thought it was just strain and exhaustion. She woke up in screaming pain and her left leg was swollen. At the emergency room the worst fear of her attending physician was realized by biopsy. She had cancer, a stage 4 clear cell carcinoma of the ovary and she was given only a few months to live. She managed to stretch that prognosis to two years. She was given chemotherapy at Memorial Sloan Kettering Hospital and radiation treatment for a series of small tumors on the brain. The cancer had also spread to her lungs and one breast. She told me that she was not going to die like her mother. She would not curse fate or make people around her feel awkward or uncomfortable. Instead she would live every day to the fullest that her condition would allow. She arranged a trip with her daughters to go to Barcelona and enjoyed two weeks there studying its art and architecture. She came back and initiated a children's book for the company for which she worked, American Friends of Mogen David Adom which is the Israeli branch of the International Red Cross. She wrote, illustrated, and prepared *Avi the Ambulance Goes to School*, a picture book for young children. She also wrote poems and took photographs for all four seasons of a small park tucked between skyscrapers

near the Empire State Building and she called this book, *Pocket Park*. Her final publication was a collection of poems on her illness and impending death which came out just before she became comatose. She called this *My Chocolate Sarcophagus*.

Nedra and I made many trips by car or by airplane to visit Claudia during her illness. She exhausted both their standard and experimental drugs. The tumors of the brain shrank from the radiation and Nedra knitted caps Claudia could wear to keep her head warm. The hair grew back sparsely leaving what Claudia called “a reverse Mohawk” as if someone had used a clipper to shear her hair from her forehead to the nape of her neck. Claudia would sit in her couch while her dachshund, Sadie, snuggled by her. Her sister Christina worked out a schedule book for the week’s visitors. Claudia had elected home hospice when the treatments ended. It was run by Calgary Hospital and they provided a visiting nurse and visiting helper who would run errands like picking up prescriptions, food, or taking the dog for a walk. Each made two visits a week during the week days and Claudia’s husband Jim would be there for the weekend to do these tasks. Visitors were limited to one hour so Claudia would not be exhausted. Claudia made each visitor feel welcome, engaged in discussions about mutual friends or colleagues, reminisce about the good times they had in the past, and discuss the writing projects she was doing.

Each of our visits in the last six months of her life (alternating two weeks in NYC and two or three weeks in Bloomington) revealed the relentless wasting of Claudia’s body as she lost weight, slept more, required more pain medication (supplied as patches or taken as pills), and required more help to get up from the couch and go to the bathroom. At our last visit, she had moved to full time hospice care at the Dawn Greene Hospice of Calgary Hospital on York Avenue and 71st Street. She was comatose, her limbs like skeletal bones wrapped in skin, her appearance as if she had aged 20 more years. The next day she opened her eyes only once, said nothing, and lapsed back into an ominous death rattle of breathing. Two hours after we went to Nedra’s sister’s apartment on West End Avenue, we got a call from our daughter Christina. Claudia had stopped breathing.

In a remarkably short time of two years, Claudia had taught those who loved her how to die. She did so with courage, creativity, grace, wit, and love.

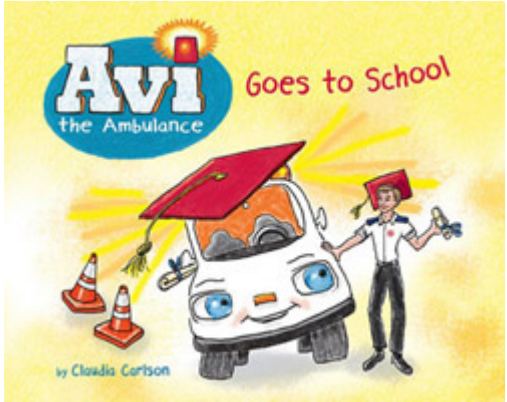


Figure 82-1
*Claudia's children's book **Avi the Ambulance Goes to School.***
Behrman House Publishing Springfield, New Jersey 2016.

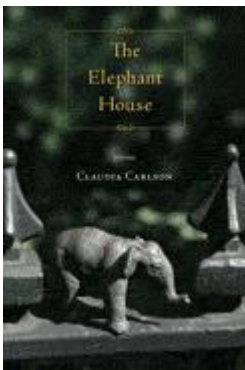


Figure 82-2
***The Elephant House** 2007 Marsh Hawk Press, East Rockaway, New York.*



Figure 82-3
***Pocket Park** Marsh Hawk Press 2013 East Rockaway, New York.*

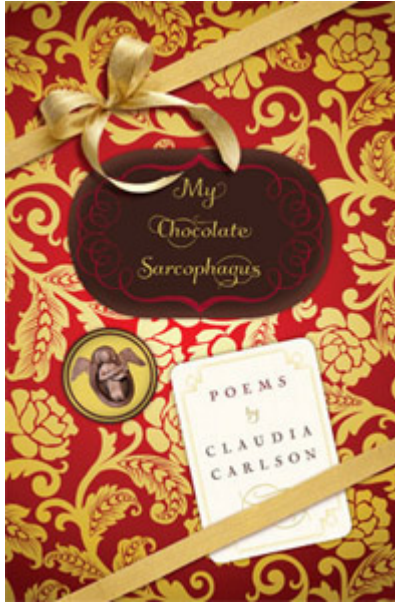


Figure 82-4

My Chocolate Sarcophagus Marsh Hawk Press 2016 East Rockaway, New York.

CHAPTER 83

ART AS A FAMILY TRADITION

One of the fondest memories of my childhood is watching my brother Roland draw cartoons or sketch scenes of things around us. I also admired my father's ability to paint in water colors using black and white photos from a newspaper and bringing them to life-like status when he rendered them enlarged in color. My mother would also paint, often in oil colors, still life pictures of flowers in global vases or a neighbor sitting on the front bench facing the apartment house in which we lived. My half-brother Ben was an artist. He attended Art Student's League and studied with George Grosz. While my father and Roland were attempting realism, my mother was a primitive artist in her style with vivid color dominating her paintings. My brother Ben was impressionistic and followed modern trends from Picasso and the German expressionism taught by Grosz.

I joined that family tradition and chose the realist style of drawing and painting. My favorite way of rendering what I saw was with graphite (lead) pencil or charcoal pencil. I would buy HB, 2B, and 4B pencils and a sharpener and a sketch pad if we could afford it or I would make do with whatever was available in the apartment. Sometimes it would be loose-leaf paper from a three-ring binder from school or blank writing paper my father used to write letters. It was always a treat when Roland and I would go with our mother to an art shop and we would buy a set of Winsor and Newton water colors, cubes of colors aligned along both sides with a trough in the middle for camel's hair brushes.

When I was in high school, I began drawing portraits, mostly of myself in front of a mirror. On occasion I would do my parents or Roland. I was fascinated by portraits and whenever we went to the Metropolitan Museum

of Art, I would look for ways different artists rendered lips, eyelids, or eyes. It filled me with excitement that a daub of paint with a swirl of contrasting color, seen close up, could look like a nostril at a farther distance. Most artists did not use a line to draw a lip; they merged the color and texture of facial skin with the perpendicular wrinkling of the lips and their ruddy color.

I did the covers for the East New York Junior High School student magazine. In Thomas Jefferson High School I would do large poster-board drawings for a class project. One, for my chemistry class, was on the Solvay process for extracting sodium carbonate from limestone. I drew a blast furnace with lots of coiled piping for extracting the components of the reactions. Another was on evolution for my biology class and I drew a spiral enlarging as it moved up from the origin of the earth to the first microbes and then I painted various invertebrates, then vertebrates, then mammals, and then primates, with a triumphant human at the top of the spiral.

I thought seriously of becoming a portrait painter and had, as my high school art teacher, Bernard I. Green. He studied with Robert Henri, a member of the Ashcan school of American impressionist-realist art. He once painted in oils an African American student who posed for him, and it was with awe that my classmates and I watched him lay out a rough sketch of her head and seated body. Then he filled in her clothes and the texture of her skin and it was stunning to see how fast he could paint. I was also immersed in the humanities with reading classics aloud to Mr. Cohen and I was equally drawn to the life sciences by many trips to the American Museum of Natural History and I read widely in the history of biology and medicine when I would go with my father to bookstores on weekends. When I was a junior I made up my mind that I would have to sacrifice too much to become a full-time artist. I wanted to experience what it was like to discover new knowledge and be a scientist. I chose genetics as my future field.

I have never abandoned art. I have sketched when I went to the Lilly endowment for the Liberal Arts meetings in the summer for some 13 years

that I participated. I sketched when I went on semester at Sea. I sketched when we went to Cape Cod or to Maine on vacations. Each of our children learned to love art. Claudia did it for a living, drawing maps for books in production for university presses. She also became an art photographer and provided poetry and other literary magazines with her pictures. She also wrote and illustrated two children's books for Mogen David Arom, the Jewish Red Cross (*Avi the Ambulance* was her children's theme). Erica found her expression in making toys, designing dresses, and designing and making costumes for professional and amateur dancers. Much of Erica's love for the fabric arts comes from Nedra, a world class quilter. Christina did illustrations for some of my books. Anders found his expression through designing municipal structures working with architects and engineers. John showed artistic interest in his teens and sculpted an Archie Bunker dull-eyed and passively zapped out in his easy chair. But John did not pursue his career in applied mathematics to the arts. He focused on history instead. The arts have entered into our grandchildren and Caitlin (née Allen) Jones developed skills as an artist and has designed a book cover for one of my books and creates memory boards or life maps of those who purchase such constructions. Grandson Maxwell Carlson is a superb artist whose portrait of me graces coffee mugs, notebooks, and other items at Red Bubble. Quite a few of my cousins and descendants on my mother's side have developed interests in the arts. Her brother Arthur Vogel was a playwright and director for plays during the Depression WPA program. Her grandson Joel Hobbs was a sign painter. Her grandson William Hackerman has lots of creative and versatile art he shares on Facebook. It is not just genes involved in these multigeneration interests in the arts. It is the mentoring, direct and indirect, that also plays a major role.

Besides the visual arts, there is an appreciation for music in my family. Part comes from Nedra's ancestors and part comes from my mother. My mother played the violin and her father encouraged her when she was a child. He hoped to send her to Vienna for its conservatory but the death of her mother when my mother was 13 years old ended that hope. She did not get to play violin again until she married my father and it was on their first anniversary that he brought home a violin. I remember my mother playing

almost every weekday for about a half hour. She liked popular music, especially bel canto type songs. She also loved the music Fritz Kreisler popularized. At home my father liked to listen to the opera on weekends using WQXR as his source. My brother had a musical ear and he could whistle Beethoven's violin concerto in D, but neither my brother nor I learned a musical instrument. My mother's schizophrenia scared me and when she began making her own money as a street musician I felt ashamed that she had become a beggar. That ambivalence still persists. I love listening to music, but I can barely sing a note. If I am at a Sunday service, I will read the lyrics to hymns and other songs posted on the walls, but I will not sing them, nor will I fake singing by moving my lips. When I run into a street musician I usually give my change or a dollar bill in silent appreciation to my mother. My mother's great grandchild, Caitlin Jones sings as well as excels in the visual arts. She has her own band, "Cait and the Critters", and Nedra and I play her CD in our car whenever we drive.

I do not think I would have been as happy or successful in the arts as I have been in science. My composite personality runs against that artistic choice. I have the Faustian drive not to repeat a year. I have the enlarged curiosity of a Charles Darwin to know all I can in my field. I have the skepticism and self-doubt of Epicurus. I love learning, teaching, and writing. I told one of my students, that if I had to use a song to describe my life it would be "Hi diddle-dee, a scholar's life for me!"

CHAPTER 84

GENEALOGY MAKES ME A MELTING POT AMERICAN

New York City has immigrants from all the countries on earth. Its neighborhoods serve as enclaves or ghettos of immigrants and their descendants for two or three generations and then another immigrant group replaces those who have scattered to other states or moved to the suburbs. The largely Jewish neighborhood in East New York which is a part of Brooklyn is now largely Hispanic and African American. After the Native Americans were forced out of East New York it became a Dutch settlement. Van Siclen Avenue on the New Lots subway line that goes through East New York is a remnant of that Dutch presence as are the Dutch names on the tombstones of an old Dutch Reformed Church that used to be there. The English replaced the Dutch. The Germans replaced the English. The Irish and Italians replaced the Germans. The Russians, Poles, and Jews were dominant where I grew up. We lived also in a largely German neighborhood in Sunnyside, a part of Queens, when I was about 12 years old. That neighborhood is now largely Chinese.

Along with the Americanization of the children of immigrants are changes in cultural habits. Catholics marry Protestants, Christians marry Jews, blacks marry whites, Italians marry Irish, and generation by generation the melting pot emerges. I did not think of myself as half-Jewish anymore than thinking of myself as half-Swedish or half-Lutheran. I identified myself, as did most of my classmates as an American. I knew perhaps ten words of Yiddish and ten words of Swedish. While my mother would sometimes make latkes (potato pancakes), my father would get a craving once in a while for knackebröd and Swedish herring or kominost

cheese. I thought that was no different than taking a trip down to Mulberry Street with my father and bringing home Chinese roast pork and sowbelly cut into stir-fried strips. I ate far more chow mein than latkes or lingonberries.

I took an interest in genealogy when I married Nedra. Her mother was active in the DAR (a patriotic group that traces its member's ancestries to the Revolutionary War). Her chapter in Fulton County, Indiana was not political in outlook. They were interested in American history and the roles their ancestors played in American society. My mother-in-law, Florence Dawald Miller was a political liberal and had voted for Roosevelt four times. Her father was a strong supporter of the New Deal Programs. Florence liked learning history by studying her ancestors. Her husband's grandfather was Israel Doc Johnson, who lied about his age and enlisted at 16 to fight in the Civil War. His brother Asbury Johnson was killed. Doc Johnson was captured and survived a Confederate prison by digging up sweet potatoes and eating those. Both Florence and her husband Harold Miller were related as distant cousins through Andrew Babcock who came to the Colonies and became a blacksmith. During the Revolutionary War he served as an anchor maker and forged links of a chain that was stretched across the Hudson River near West Point. It was Benedict Arnold who planned to capture the guards at the chain's shoreline and release it so the British fleet could cut the American colonies in two. The plot unraveled and Arnold fled back to England. Babcock died a few years after the war and his widow used a flat boat to carry her goods and children down the canals to the Midwest. Nedra's ancestors came to Indiana from Kentucky and Ohio and settled in the farmland of Fulton County in the 1830s.

I preferred constructing family pedigrees using geneticist's symbols of squares for males and circles for females and the members could be identified by their location on the pedigree. I thought this would make it easier to trace any hereditary traits in the family. It also gave me a chance to work out age distributions over time, mean life expectancies, family size per generation, and my most distant Y chromosome ancestor and maternal mitochondrial ancestor. The ethnic contributions of my extended family includes English, Scottish, French, Dutch, Ukraine, Swedish, Hispanic,

African-American, Jewish, Japanese, German, Finnish, Native American, and no doubt many other ethnic components.

I used to have students in some of my genetics and biology classes prepare a three or four generation family pedigree using the geneticist's symbolism and charting. I asked them to include age at death for the non-living, ethnic origins, causes of death, religion, and occupation. Consistently I found that my students whether at Utah, Tougaloo, Semester at Sea, or Stony Brook were melting pot Americans. There were few solid three or four generation Italian American, Irish American, or German American pedigrees. At Tougaloo I found a cause of death that was rarely mentioned among white students—death from gunshot wounds or from childbirth.

In my own family pedigree I traced prognathism (a milder form of a Hapsburg jaw where the lower teeth extend over the front incisors) that I inherited from my mother and she from her mother Sarah Nussbaum. Tuberculosis affected several of my Vogel and Nussbaum family descendants, but after WWII tuberculosis has been contained by better nutrition, antibiotics, and protection of food contamination, especially dairy products. Arthritis seems prevalent from my father's side both his mother and my father having a severe rheumatoid arthritis with skeletal deformities in later life. How many of our diseases of aging and chronic diseases are associated with genes will be sorted out in the coming years as the human genome yields its complex relations of gene and environment expressions.

There are lots of things I have learned from genealogy and demography. I made use of that knowledge in my Bio 101-102 courses for non-science majors. In the 1960s I was curious how our lives were experienced before and after the germ theory. This led me to study the efforts to record the causes of death each year in the industrializing countries such as Great Britain, France, or the United States. Until the early 1900s the leading causes of death in the US were tuberculosis, pneumonia, and gastritis in children and young adults. Record keeping began in the 1650s in England and in 1665 the bubonic plague became the leading cause of death for a year and then disappeared, reappearing in Europe again in 1728 and never

to be a problem in Europe again after that. What changed? Personal hygiene changed as people washed their clothes and their bodies more often. Garbage disposal was more effective. Nutrition was improving as a consequence of the industrial revolution and dependable wages that covered the necessities of life. The mean life expectancy before the 1870s was below 60 for most of Europe and the United States. After the germ theory of the 1870s and 1880s public health and immunization against infectious diseases took place. Smallpox, diphtheria, typhoid fever, typhus, gangrene, child bed fever, and anthrax plummeted. People washed their hands. Doctors used antiseptics for surgery. Water supplies were chlorinated. Foods were inspected, pasteurized, and regulated. This in turn led to more infants surviving and larger family sizes persisting to reproductive age with a consequent explosion in population growth as the twentieth century began. This in turn led to the birth control movement and deliberate human intervention in the reproductive process to plan an affordable family size. Accompanying this was a shift from the farm to the city and the rise of public education. This in turn made Americans and Europeans more mobile and their partners could be very different from the ethnic identity of their birthplaces.

I saw myself and my students as part of a huge mixing process of humanity with many advantages our ancestors did not have. The process will continue. My descendants a century from now will have more Hispanic, Asian, and African components with their white majority slowly disappearing and the use of racial identification no longer valid because almost all Americans in the 22nd century will be melting pot Americans. Not only is my biology a melting pot mixture, so is my American culture. Our language assimilates words from our immigrants. Our popular music brings Latino and African American contributions. Our foods are a melting pot fare of Chinese (stir fries), Mexican (tacos), Italian (pizza), Greek (gyros), French (croissants), Japanese (sushi), Indian (curry), Jewish (bagels), and American (barbecues) traditions.

CHAPTER 85

LEARNING FROM MY FAILURES

Overall I have had a successful career and a successful life. I have also had several failures. These fall into three categories—a failure of moral judgment for which I am responsible, a failure of principle that didn't work out as I hoped, and a failure of projects that for one reason or another just didn't work out. Fortunately my successes have been numerous and my personality, for the most part, has been seen by me and by others as favorable. I consider myself more optimistic than pessimistic. Dealing with failure or disappointment was relatively easy for me. I had the good fortune in my youth of reading aloud to my high school mentor, Morris Cohen, a book he recommended. It was Freud's *Civilization and its Discontents*. Freud wrote it as the Great Depression swept the world and as the rise of fascism in Italy and Nazism in Germany was threatening a new world war. Freud's thesis was very appealing to me. He argued that civilization was the positive outcome of sublimation of our discontents. If we do not make that positive effort the outcome of our discontents is war, aggression, suicide, and mental collapse into neuroses and psychotic behavior. I learned early a most valuable lesson about failure. Don't sulk. Create. I did so by turning to art, reading, and writing as I passed from my teens into my twenties. In my career I used sublimation to learn new fields, plunge into my research, and later in life to write many books.

In my childhood I described the few times when I stole items— my earliest recollection being a coral necklace in a thrift shop that I palmed and later pretended to find on the curb and give to my mother. I also smart when I think of the Schaeffer fountain pen I stole from the pocket of a shoeshine man in City Hall Park. The only other item I can think of was a small brass

object shaped like a shoe that I swiped at a party in Manhattan when I was going to NYU. I don't think I would have done this had it not been for the host, a doctor, who enjoyed embarrassing people. He called me over and mumbled something and I said "I'm sorry, I couldn't hear you." He replied in a loud voice, "I said, 'Did you know that nine out of ten homosexuals are hard of hearing?'" I turned beet red and turned away to the guffaws of those in his sofa. While I still feel guilty over the first two incidents, I offset my guilt and rationalized my theft of the brass object as a punishment although I would be surprised if the host would notice it in a home filled with such objects.

My failures of principle I also described. The first was my loyalty to the "unsung hero" status of my high school chum, Herman Cohen, who later became Undersecretary of State for African Affairs in the first Bush administration and who helped settle a war between Ethiopia and Somalia. My blind mentor, Morris Cohen, admired my principles but gave me a political view of how the world works and told me that good intentions are insufficient and some people have sensitivity to their power or authority especially when they think it is being rejected. I followed his advice and did a humble act of contrition to appease Mrs. Touvim who headed the Service Council that rejected Herman Cohen's candidacy. The second incident was when I was serving as Associate Dean of the Graduate Division at UCLA and tried to figure out a fair way to distribute the dozen or so fellowships under my control that Governor Reagan could not place under Sacramento control. When one of Chancellor Murphy's staff asked me to give one of the fellowships to a student he thought worthy, I refused. He then let me know that a failure to be cooperative had its consequences. The down side of that encounter was the beginning of an ulcer. The plus side of that encounter was it taught me that administration is for those that President Wells at IU said "had the stomach of a goat." The third failure of principle was my defense, as Master of the Honors College, of "Jonathan", whose dealings with a chain of command of bureaucracy was even worse than mine. He kept asking me to defend him as I moved upward that chain and the two of us were considered an irritant. Fortunately I won that case and kept "Jonathan" from having the embarrassment of expulsion from the Honors

College. The downside of that encounter was it got me out of the Honors College. I had to resign with such lack of support. The positive side is that it gave me the freedom to write books and at least five or six books would not have been written had I continued in that role as Master of the Honors College.

I described myself as having a Faustian personality. I mean that in Goethe's sense. His Faust was searching for meaning in life. His Faust imbued what the Italian Renaissance called *l'uomo universale* -- the universal man. In shifting from the academic world to the diverse ways of society he made mistakes in judgment, especially the rash way he dealt with his romance with Marguerite and the wake of misery it caused to her and her relatives. He continued to make such errors throughout Book I and Book II of the Faust story. It is only as he approached his 100th year that he realized where happiness and fulfillment come from -- it is applying one's skills and lessons from experience in the service of humanity. He becomes a city planner and proposes to drain the swamps to eliminate malaria, to excavate the harbor to open it to world trade, to build cities and open up farm land to make society prosper. My ambitions were not that grandiose, but I resonated to Faust's willingness to dump what he was doing and try new things. It has led me from Queen's University to UCLA, from UCLA to Stony Brook University, and from Setauket, New York to Bloomington, Indiana. Each shift was like an insect undergoing molting. What I shared with Faust was his optimism that the universe is worth knowing and exploring. It led to some failures, too, like Faust.

I knew how academic life worked so my shift to teaching non-science majors was not possible until I had tenure. It began at UCLA where I had a stunning enrollment of 2000 students in a required biology for non-majors. I had to use television (in 1966 it was still primitive, black and white, and not capable of being edited). Talking to the green light of a camera was not the same as facing several hundred students in an auditorium. The course was not a disaster, but it did not meet my desires or expectations. When I asked Bentley Glass for a lifeline to escape from the climate of confrontation that Governor Reagan tried to quell by draconian measures, I offered to him the vision of a non-major's biology course that would be

designed to give the citizens the biology they needed to know to make informed decisions about science in their lives – including reproductive decisions, environmental discussions, the racism behind public views of race, and a host of medical and health related issues. Unlike Biology 2A and 2B at UCLA, Biology 101-102 at Stony Brook University was much acclaimed and lived up to my Faustian hopes. But not all my later teaching efforts met with success. On Semester at Sea I found it difficult to teach a course without an adequate library. One of the three courses I designed for the trip was on voyages of discovery. I wanted to relate the countries we visited with the scientific findings found by those who visited them when they were still undeveloped. Darwin was a natural for Brazil. I had read some books on Vasco da Gama's voyages to Africa and the Southeast Asian islands and mainland of India. But I found virtually nothing in the ship's library to use and trying to get books sent from the US to a ship that was going around the world was an enormous difficulty. I also found it impossible in the short time at each port to find bookshops with books I needed in English. I had overreached, like Faust, and tasted failure as a consequence.

I failed in my first marriage. I entered marriage without having dated Helen sufficiently long to know her as a person. I learned that marriage by correspondence is not the same thing as going out on dates. I knew of her troubled personality—her attempted suicide over a failed romance with a woman she loved. Had I spoken to a psychiatrist I might have talked myself out of that marriage because I was only vaguely aware that it was a compensation for my mother's troubled personality that I was using to justify that if I could survive that, I could handle a much less troubled soul with whom I was both falling in love and hoping to rescue. But that failed marriage taught me how to have a happy marriage and 60 years of a loving relation with Nedra. It also gave rise to my first child, Claudia, and the joys of being a parent and having a child who could experience the love of her two divorced parents.

I have also failed to get as many books published as those that made it to production. I wish I had better success with my book on Agent Orange, my two novels (one on Faust and one on the eugenics movements in the US),

and several books on the philosophy of science. I learned early on that if a book doesn't succeed with an editor or agent, to write a different book. Who knows? Perhaps all of my failed books will find their way to eBook existence if I am fortunate enough to live a few more years.

CHAPTER 86

ON BEING A GENERALIST

I like to think of myself as a generalist. If this were 1500, I would be known as a “Renaissance man” because in those days there was an enthusiasm for learning as much as possible in as many fields as possible. I would certainly attribute that zeal to my exposure to knowledge from my father through his passion to read and to my high school mentor, Mr. Cohen, for his opening up the world of Western Civilization and the great works exemplifying that intellectual tradition. My ideals of generalists include Montaigne in the late Renaissance, Joseph Priestley in the eighteenth century who exemplified the spirit of the Enlightenment, Alexander Humboldt in the early nineteenth century, and Julian Huxley in the twentieth century. What they helped bring about is a unity of knowledge and a shaping of world views.

Specialists sometimes look on generalists as dilettantes. The difference, I believe, involves commitment. Dilettantes tend to be superficial, and their knowledge is often intended for display. Generalists tend to be committed to learning as much as they can, and finding the connections among different disciplines. The major problem with being a generalist is that with rare exceptions it prevents exploring one field with such intensity that it leads to new discoveries or theories. The exceptions to that are polymaths like Aristotle who could contribute substantially to many fields and da Vinci who could make major contributions in his time to engineering, theatre, art, anatomy, geology, and other fields.

I had to drop many fields that appealed to me in my youth. I loved drawing and had seriously considered being a portraitist as an artist because the human face can reveal personality in the hands of a skilled artist. But

that requires an intense immersion in art to develop a unique style and a mastery of media and technique to bring that into being. I also resisted writing popular books because I was more interested in reflecting about what new knowledge meant than in trying to describe it to a wider audience. Being a generalist means making choices among numerous connections to explore. There are limits to what we can do in only one lifetime.

Even when I had not designed a course for non-science majors, I always sought connections from what I taught as a geneticist to the lives of my students and to the implications new knowledge had for society. In my discussions with the graduate students working in my laboratory, I stressed the importance of using a comparative approach. How did viruses, bacteria and different types of higher cellular organisms agree and differ in the problems our laboratory explored, especially mutagenesis and gene structure?

I consider my personal life a success because I have experienced a happy marriage of over 60 years with Nedra. I am pleased that our children have chosen diverse fields to enter and that they are launched in their careers. I am grateful that I had an opportunity to teach thousands of students and stimulate their interests in the life sciences and to reflect on the social consequences of science. I am proud I kept up a diary for more than half of my life and that it may provide future scholars some insights into twentieth century life. I was fortunate to have a dozen books published, most of them serving as a source for future scholars studying the history of life sciences. I am aware of the disappointments and constraints on my life. It was not easy growing up in poverty. It was difficult to accommodate the moods of my psychotic mother. I was socially inept in my youth. I made a mistake in marrying my first wife Helen by not exploring that relation before committing myself to marriage (but if I had been more experienced or mature, our daughter Claudia would not have been born). Sometimes there are very positive outcomes from mistakes. The longer I live, the more I am accepting of the complex mixture of errors, good choices, good luck, and uncertainty that govern our lives. When the time comes and I am no longer among the living, I like to think that I had an enjoyable life, largely

crafted from my experiences most of them good, and that in my relatively long life I have enjoyed the journey and sampled a generous portion of what life and the universe provide.

Muller wrote an essay called *Life* that appeared in *Science* while I was his graduate student. He raised a rhetorical question, asking if life “was just a particularly fancy kind of rust found on the surface of the earth?” Muller, of course, was a moralist and considered human life worth protecting and our social policies changeable. I do too, but I lack a crusader’s temperament to make that my major concern. We need diversity and it is sad to see how many people with power like to impose a rigid vision of what they consider the ideal or necessary at the expense of those who see or happen to be otherwise. My oxygenated carbon atoms that form my cellular molecules, organelles, cells, tissues, and organs are a reality that I respect and love to understand. It is what thrills biologists and biochemists. But we are more than the machinery of our bodies. We live as if we had free will. We live as if we had ideals. We enjoy the emotional feelings of friendship, love, admiration, and striving even if we are agnostics or atheists who reject the supernatural as explanations for these qualities of life.

CHAPTER 87

DISCOVERING MY UNKNOWN OR LITTLE KNOWN ANCESTORS

My brother Roland and I grew up in a very nuclear family. Except for our visits to our brother Ben Weiss about four or five times a year and our rare visits (never by invitation) to see my Uncle Peter or my Uncle Charles during the Depression years, we saw little of my mother's family. Since my father was an only child and never spoke of any of his relatives having moved to America, we saw none of his family. About two or three times a year he corresponded with his mother in Stockholm and translated her letters for us. We also drew Christmas cards with Swedish Jul-tomte or elfin gnomes that he would send on to her. My mother's paranoia was a guarantee there would be no social visits of neighbors or my father's work colleagues. Despite that, as a curious child, I gradually learned about my mother's siblings and how they had dispersed from New Jersey. I thrilled when my mother made an occasional trip to Bound Brook, often to get a document she needed, like renewing her citizenship or her right to vote. She had lost her US citizenship when she married Max Weiss who was from Chernobyl in Ukraine because the US law at the start of the twentieth century made women the subjects of the nation of their husband at the time of marriage. The 1907 law was repealed in 1922 but it did not renaturalize those women like my mother. She had to be renaturalized by petition. I remember the excitement of going with her in Manhattan to be sworn in as a citizen in 1940 but as a nine-year-old child I did not understand why she had to do this. In theory I could be considered having three citizenships. I was American because I was born in Brooklyn, NY in 1931. I might have been Russian because my mother became a subject of Russia and had lost

her US citizenship by marrying a Russian immigrant Max Weiss, or I could be Swedish because she married my father who was from Stockholm and thus, I became a subject of Sweden. Since my father retained his Swedish citizenship for the rest of his life, I might even have dual US and Swedish citizenship and do not know it. It is even more complicated because parts of Ukraine kept shifting in governance through wars and treaties. At the time of Morris and Sarah Vogel's immigration in 1893 they were part of the Austro-Hungarian Empire. Between WWI and WWII they were part of Poland. From 1945 to the fall of the USSR they were considered Russian. When Ukraine declared its own independence as the USSR split into pieces, their status would be Ukrainian. Fortunately I have never had a desire to run for President of the United States, so I do not have to experience being harassed by "birther" critics.

I became curious about my ancestors when I studied genetics and wanted to see who my ancestors were. I ignored genealogy then as an activity that appealed to the DAR and other snobbish organizations. It was a common attitude among my fellow melting pot friends, and we just considered ourselves American. I later modified my thinking about the DAR genealogy when I learned Nedra's mother was an active member in Fulton County, Indiana. Her family and husband were New Deal Democrats and liberals. My mother-in-law enjoyed local history and volunteered in the Fulton County Historical Society to celebrate her ancestors who were early settlers in Indiana. My interests in human genetics made it very easy for me to construct human genetic pedigrees to trace disorders in a family. I did that frequently for students in my classes when they came up to me after class or during office hours. I also tried to construct my own family as a pedigree but did not know how to extend it to most of my relatives. Either I did not know where they lived, if they were alive, or whether it was appropriate to push myself into their lives when they had never made an effort to contact me.

Academic life provides lots of opportunity for travel and as I attended meetings, first as a graduate student, and then as a visiting professor or switching jobs, or writing and doing interviews or research for books I was writing, I began to fill in the gaps of my family history. This was

enormously stimulated by my mother-in-law, Florence Miller, who, as I described earlier, was passionate in her interest in genealogy. She clipped out obituaries of all her relatives. She went to historical societies to get information on her ancestors, and after she became widowed, went on trips with a friend to visit their ancestors' graves and take notes on their descendants. I decided to start what I call *The Red Book*. It is a record book of about 300 lined pages. I would enter each new pedigree for one of Nedra's ancestors or for one of my own. Over the years it has become almost full. Most of those ancestors are just names, dates of birth and death, and places where they were born or died. Whatever stories I learned about them I wrote down. I learned that few people know much past their grandparents or great grandparents. In Nedra's family there is a tradition of family reunions (Dawalds or Zartmans) and some of those involve 100 or more people at a gathering and sheets of paper on tables soon become filled with updates of births and deaths and new ancestors found to plug into collateral relatives. There is a published Zartman family history that has most of Nedra's ancestors in it. It had disappeared from my mother-in-law's possession but eventually was reprinted.

My daughter Christina has taken an interest in family history, and she has been very helpful in tracking down the relatives of my parents, especially my maternal grandfather Morris Vogel and his family. Morris came to America, I learned, as an elopement with his wife Sarah Nussbaum. The Nussbaums disapproved of their daughter's interest in Morris. They arrived in New York on June 16, 1893. My mother, Ida Vogel, was born August 23 of that year in Bound Brook, New Jersey. From an interview with her children, in the 1950s, my aunt Kate described how her parents lived in the equivalent of a favella on the banks of the Raritan River in Bound Brook where Morris used his carpentry skills (he listed himself as a joiner in the ship's manifest) to make a shack from discarded lumber in a dump. He then became a peddler and sold sewing notions and tobacco to local farmers until he saved enough to open a store. His younger brother, Bernhard Vogel came to America with his Czechoslovakian wife in 1900 but in 1906 they missed European culture and returned to Prague with their two American born children, Hedwig and Martha Vogel. In 1938 when

Bernhard's family tried to escape Hitler's annexation of Czechoslovakia, Hedwig managed to get out with her husband, Stanley Neufeld, and their daughter Doris. Doris married George Auerbach and she became a professor of German literature and the founder of the first women's study program at Farleigh Dickinson University in Englewood, New Jersey. Not so fortunate were Bernhard Vogel and the rest of his family. Margret Vogel Heller died of natural causes in 1938. As a result her son, Herbert Heller, and husband Emil Heller, wrote desperate letters to get them to the US, but they failed to get the necessary paperwork and approvals in time and Herbert was arrested by the Nazis, sent to a ghetto, and finally in 1944 sent to Birkenau at Auschwitz where he was killed. There is an irony in this family story because if Herbert Heller's mother had lived another year, her American birth might have provided an enhanced return to the United States for her, her husband, and her child. Herbert Heller is thus my first cousin and a victim of the Holocaust. Until I learned this, the Holocaust was history to me. It suddenly entered my family's fortunes in 2016 when I calculated my cousin Herbert Heller and I each shared one-eighth of our great grandfather Vogel's genes. Similarly I did not know until 2016 that I had an additional first cousin, Doris Neufeld Auerbach who was also a college professor and with a somewhat different sampling of one eighth of those great grandfather Vogel's genes.

Also in 2016 I learned about my Uncle Arthur Vogel. He was the child of my grandfather Morris Vogel's second marriage after the death of his wife Sarah (who was also my maternal grandmother) in 1906. Morris married Rosa Fischer in 1907 in New York City and they had a son, Arthur in 1909. He took an interest in writing and became active during the Depression with the WPA theatre program. He wrote nine plays, directed plays for Clifford Odets, and acted in them. He also wrote reviews of plays for New Jersey newspapers.

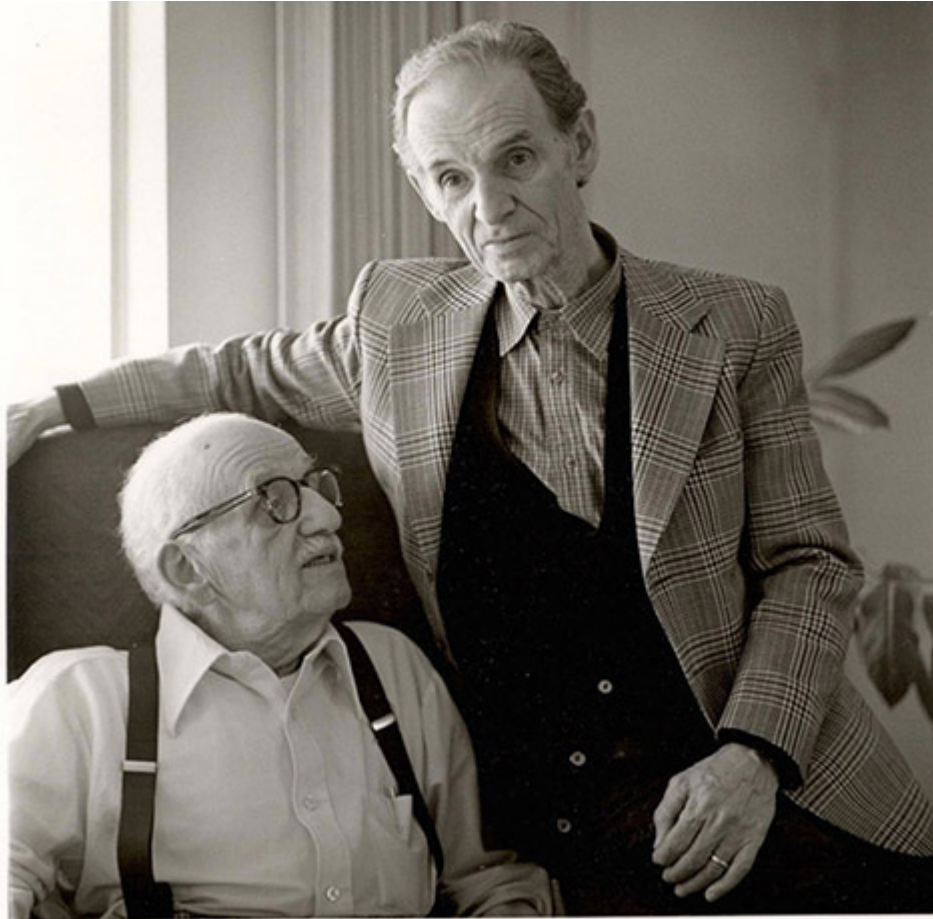


Figure 87-1

My Uncle Dr. Peter Vogel (sitting) and his brother, Arthur Vogel in 1983.

The story of my family makes me wonder what it was like for parents of children who grew up and went to sea and never came back or who left Europe for opportunities in the New World. Without a postal system until the 1830s and with difficult means of travelling by sea (or by land before railroads), many parents must have resigned themselves to never hearing from their children again. My situation pales by comparison to many adopted children who have no way of finding who their biological parents were. Orphan asylums met the need of raising children when a child lost a mother or father, and no other relatives were available to care for them.

Because my father was an only child and came to the United States in 1924 and none of his paternal Carlson or maternal Olauson relatives came to the United States, I know far less about them than about my Vogel connection. Ironically, it made no difference growing up because my

mother's family rejected her for marrying a non-Jewish man and this closed off contact with most of my Vogel relatives.

Genealogy has taught me how genes slosh back and forth around the world and how complex our identity can be. Depending on whose criteria for citizenship, religion or ethnicity is used, I could be considered American, Russian, Polish, Austrian, Swedish, Lutheran, Jewish, atheist, Unitarian-Universalist, or Humanist. I rather prefer my own criteria and claim them all. Toss in being a Brooklynite, a Hoosier (for 12 years), a Canadian (for at least two years), a Californian (for eight years), a Long Island New Yorker (for 41 years) and add to the mixture some time spent in Mississippi, Utah, and Minnesota as a visiting Professor, and two semesters of sailing around the world, and I fit a melting pot American tradition that I admire.

CHAPTER 88

MEMOIR WRITING AT EMERITI HOUSE AT INDIANA UNIVERSITY

I started a memoir when I was in my mid 50s at Stony Brook University. Before that I had written about a fifty-page autobiography, inspired, like Darwin, to write down something that might survive me if I experienced sudden death. My father's death at age 61 and my mother's at age 68 did not give me comfort that I would live into my 70s let alone my 90s. The difference between an autobiography and a memoir became clear to me when I wrote Hermann Muller's biography. First it took seven summers and sabbatical year to research, write, and meticulously attribute every item about Muller's life. I used an abundant correspondence at the Lilly Library that I helped organize and a few autobiographical articles requested of him by the National Academy of Sciences and by the USSR academy of sciences. I supplemented that with lots of interviews in the US and abroad. A memoir, as I learned by reading a few, is a selection of life episodes that helped shaped the writer's personality and career. For that reason, I called my memoir *Bits and Pieces*. I tried out some chapters by having a few of my students read them. One student told me his father came across a chapter and told him he shouldn't be reading stuff like that.

I had other things going on in my career and set aside the memoir until my retirement and arrival back to Indiana in 2009. I learned that there was a memoir writing group run by John Woodcock (who died in 2022), whom I had met through the Lilly Endowment programs in the Liberal Arts. I asked him if I could participate and was welcomed to join the group. Other than Julian Huxley's two volume memoirs, I had not encountered any recent scientific memoirs. Memoirs struck me as more confessional and meditative

than autobiographies. They were not as lacerating as the filleted Russian souls in *Anna Karenina* or *The Brothers Karamazov*. Nor were they as empty of emotions as autobiographies where the author looks on the self as if peering through a lens. I learned very quickly that I was not alone in that quest to find a writing voice for a memoir and an audience. Was I speaking to my future descendants? Would some relative two centuries from now be interested in my memoir? They would only share about one tenth of a percent of my genes. Was I only writing for my relatives or did I want others to read about the turmoil and triumphs of my life?

I listened to the chapters of my fellow memoirists in the seminar room around whose table we gathered. We lapsed into student mode, a habit not exercised over some fifty or sixty years. I wondered if my B+ effort could be shaped into an A presentation and editing. What struck me, as I listened to my fellow writers, was the diversity of their lives. Most were academics, but they came from different countries and cultures. I followed Katie on her bicycle in my mind as she encountered friends and strangers. I followed her around Indiana looking for the perfect fruit pie. I listened to Beverly's stories of arriving in the Himalayas and learning to eat with her fingers. I sailed in my mind with Tom on his sailboat, a floating Walden cabin as he entered his diary/log entries. I enjoyed Roy's adventures visiting the islands in the fjords of Norway by sailboat and resonating to his fears during the Nazi occupation. Milton described his evacuation from London and living in Glasgow during WWII. I learned about Latvians living first under Nazis and then under soviet occupation. I learned my colleagues' lives during the great Depression of the 1930s.

As each of us would finish a reading, the rest would respond with their insights of what worked well and what needing editing. Woodcock also gave insights into strengthening our narratives. I learned to my surprise from Woodcock that I had a "muscular prose." For a timid child whose father teased him with the name "sechling" (weakling) It was nice to know I had grown up. My *Bits and Pieces* is now two volumes, the first covering my first 30 years including my first academic appointment in Kingston, Ontario, at Queen's University. The second involves my career from leaving Canada to take a job at UCLA and later at Stony Brook University

in New York and how my professional career as a geneticist underwent transmutations from research in mutagenesis to human genetics and to the history of science and finally to full time writing. The chapters in these memoirs show how unpredictable my path as a generalist was. I also was buffeted by the circumstances of my youth with a psychotic mother and the difficulties of buying anything during the Depression. I realized how much I owed to the mentoring of my teachers throughout my life. I also experienced a first marriage that failed and a second marriage that is celebrating 63 years of a loving relation. I am lucky that I have loved teaching and research, learning from a wide reading and seeing the many positive influences on my student's lives.

I do not know when these memoirs will be published. If the prospect of finding an agent or getting an opportunity to deal directly with an editor does not happen, I have additional options, including self-publishing (eBook or Publishing on Demand) through [Amazon.com](https://www.amazon.com). I have no illusions that my memoir will differ from the fate of thousands of memoirs published each year—mostly self-published and selling about 50 copies to relatives, another 100 to acquaintances, and perhaps 100 who are interested in the blurb they read. In my life money was never my passion and I am happy with the scholarly books I have written that made original contributions to knowledge. I also am confident that each of us will work out for whom the memoir is written. In my case, I am writing it for myself.

CHAPTER 89

AFTERWARDS: MY SCATTERED FAMILY

This is a brief account of the persons mentioned in my memoirs:

- My father **Axel Elof Carlson** and mother **Ida charlotte Vogel Carlson** died about 1962 in California when I was about 31 years old. They both died of cardiovascular conditions
- My brother **Ben Weiss** died of lung cancer in New York City in 1972. My sister **Sadie Weiss Hobbs Spring** died in Long Beach California in 1990 of complications from diabetes.
- My brother **Roland Carlson** died of his hereditary heart condition in 1975 in New York City. He was working for Nielson Ratings Company at the time
- My first wife **Helen Zuckerman Carlson** died of lung cancer in 1975 in Brooklyn, New York. She was last employed as an instructor at Brooklyn College.
- My first in-laws, **George Zuckerman** and **Rose Bernstein Zuckerman** died in Brooklyn and Manhattan, respectively, of complications of old age in the 1980s.
- My wife, **Nedra Miller Carlson** is retired from her work as a cytogenetic technician and as an IVF embryologist. She now does quilting as an avocation.

- My second in-laws were **Harold Miller** and **Florence Dawald Miller**. My father-in-law was a journeyman and died at work in South Bend in 1969. My mother-in-law lived to be 95 and died of old age in her assisted living facility, Wesley Manor, in Frankfort Indiana.

- My daughter **Claudia Carlson** was divorced from **David Allen** and married **James Racheff**, a playwright and lyricist. They lived in Manhattan. Claudia did web design, book design, and she had four works of poetry published, one a collection of poems for adults based on themes from Grimm fairy tales [*The Poets Grimm*, with co-editor Vivian Beaumont], the second a work of her own poems [*The Elephant House*], and the third, another book of her poems [*Pocket Park*] which includes photographs she took of the place where she sits during her lunch break. Her last book, *My Chocolate Sarcophagus*, was published as she was dying of ovarian cancer. She died in January 2016. She also wrote a children's book, *Avi the Ambulance Goes to School*, for American Friends of Mogen David Arom (the Jewish Red Cross). David married **Dianne Morancie** and they live in New Jersey. David did computer programming and Dianne did massage therapy. They now own and operate a lavender farm and bed and breakfast in upstate New York. Dianne has two children from a prior marriage, Stephen and Allan Morancie.

- My daughter **Christina Carlson** was married to **Stephen Hoyt** but the marriage failed. She keeps up with her step-son, **Carsten Hoyt**, who served many years in the military and FBI. Carsten is married and has three children. Stephen remarried and has a daughter with that marriage. He is Headmaster at a school in Nassau County, NY. Christina is married to **Ken Weiner**, a sculptor. They live in Bellingham, Washington. Christina has been a teacher and she is now a departmental secretary at the University of Western Washington.

- My daughter **Erica Carlson** divorced **Michael Woodward**. She is a toy designer and has experienced the collapse of several companies. She was in Boca Raton with a toy company there but got laid off. In 2014 she married **Dwayne Morrell** in Florida. They moved in 2015 to Northern Indiana where Erica took a job with a small toy company. Erica is a born-again Christian. The marriage to Dwayne failed and Erica briefly lived with us before heading back to Florida. None of our other children have strong interests in religion. All of them were raised Unitarian which is not a religion that dwells on the supernatural. Erica married **John Tate** in 2018 and they live in Florida. Erica now designs and makes ball room dancing outfits for clients and works from her home with John Tate.

- My son **John Carlson** married Dawn **Allen** (David Allen's sister). They lived in Chicago and Georgia before moving in Swampscott, Massachusetts where John worked as a systems analyst and computer software program designer for corporate health insurance and retirement accounts. He worked near Cambridge. In May 2016 John died unexpectedly of an apparent heart attack at home.

- My daughter, **Amanda Carlson** lived four days and died in 1964 in Los Angeles from a chromosomal aneuploidy (trisomy-18 or Edwards Syndrome).

- My son **Anders Carlson** was married to **Lyn Yasumura**, an Obstetrician. Anders is an instructor at the University of Southern California in Los Angeles. They and their three children lived in S. Pasadena. Anders got his PhD in engineering at Caltech. He taught engineering for architect students in the Department of Architecture and worked as a consultant for an engineering firm in Los Angeles. Anders and Lyn divorced in 2016 and in 2019 Anders married **Alexis Newman**. They moved to Manhattan and Anders took a job with an engineering firm and Alexis took a job as a publicity and marketing manager at Columbia University.

- Christina's step son, **Carsten Hoyt**, our grandson when she was married to Stephen Hoyt, is in the navy reserves and for four years served in the NCIS with his family In Singapore. He is now in law school at Ohio State University.
- My grand-daughter **Natalie Allen** got her degree in theater arts at Stony Brook University. She is acting and taking acting courses in New York City but is also considering writing for her career. She teaches English as a second language in New York. She married **Jackson Hardaker**, a New Zealander and trombonist. Their son, **Boden Hardaker** was born in 2020
- My grand-daughter **Caitlin Allen** was graduated from Skidmore College. She enjoys singing, art, and literature. Her jazz and swing band is called "Cait and the Critters." She married **Andrew Jones** who is from Australia.
- My grand-son **Jack Wiener** graduated in 2017 from high school in Bellingham, Washington. He was adopted by Christina and Ken from his birthplace in Colombia. He has a natural gift for music and art and enjoys playing the guitar and composing music. He uses the stage name **Jack Delgado**. He hopes to attend community college and then switch to a music program
- Grand-daughter **Vanessa Woodward** presently lives in Dayton, Ohio. She married **Daniel Begley** and they are raising their daughter, **Annabel Begley** and son, **Zeppelin Begley**. Daniel is at the Wright Patterson Air Force Base and reentered civilian life in 2017. Vanessa majored in psychology at the University of Cincinnati.
- Grand-daughter **Natasha Woodward** lives in Cincinnati and enjoys baking and works as a manager of a baking unit in a supermarket in Cincinnati. She was married to **Ethan Amber** and their son, **Osric**

Wolfgang Amber was born in 2013. Natasha has filed for divorce and still lives in Ohio.

- Grand-daughter **Miranda Woodward** attended the University of Cincinnati, and she was in their ROTC program and studied mandarin Chinese. She is thinking about a health-related field for later study or some area of Chinese studies. She married **Andrew Arnold** and they live in Idaho.
- Grand-daughter **Selena Woodward** lived with her mother Erica in Florida. She got a degree in massage therapy and works in spas and nursing homes. The marriage of Erica and Michael failed after Erica removed them from Cincinnati and brought them to our home in Setauket when two of the girls reported sexual abuse (fondling) to a school nurse by a relative in Cincinnati. Selena has her own apartment in Florida. Selena married **Bryan Hurd**, but they have now divorced.
- Grand-daughter **Justine Carlson** is a graduate student at St Louis University studying public health. She married **Kyle MacArthur** who sells and repairs computers.
- Grand-son **Derrick Carlson** was in the army and was stationed in South Korea at a missile base and was injured during an assignment in Texas. He is now out of the Army and left Massachusetts to be with friends and seek work in Atlanta, Georgia. He is now married to his wife, **Melinda**.
- Grand-child **Maxwell Carlson** completed high school and attended Pratt Institute in Brooklyn in 2017 to study art. He is now in California. Twins **Owen Carlson** and **Hayden Carlson** are in college after graduating from high school in S. Pasadena.
- Great-grand-daughter **Annabel Begley** is in Dayton, Ohio with her parents **Vanessa Woodward Begley** and **Daniel Begley**.

- Great grandson **Zeppelin Begley** was born in Dayton and lives with his parents and sister **Annabel** in Dayton.
- Great grandson **Osric Wolfgang Amber** was born in Hamilton, Ohio and lives with his mother in Hamilton, Ohio.

Besides my immediate family connected by birth and marriage, I have an uncertain number of relatives from the offspring of my brother, Ben Weiss, the offspring of my sister Sadie, and the siblings of my mother Ida Vogel Weiss Carlson. Christina has traced several of these relatives and I am trying to make contact with them by email and hope someday to go to a reunion of my mother's family. My father was an only child born in Sweden, so I have no known relatives of his here in the United States. By contrast, I have several cousins, most of whom I have never met, through my mother's large family. Christina located Linda Vogel and through her we have learned of the descendants of my mother Ida's siblings and the careers of my Vogel uncles and aunts and their children.

I think of my graduate students as an extended family

John Southin retired from McGill University and lived in Brockville, Ontario until his death in December 2014 from a neuromuscular degenerative disease. .

Ron Sederoff is still active as emeritus at North Carolina State University in Raleigh.

Harry Corwin lived in Colorado after retiring from the University of Pittsburgh. He and his wife were in Seattle where Harry died of complications of diabetes. .

Robert Hendrickson is probably deceased. He last lived in Denver.

Dale Grace is deceased. He last lived in Eugene, Oregon.

John Jenkins is still active as emeritus at Swarthmore College in Pennsylvania.

I have many students from my undergraduate courses whose lives I have followed and whose work and personalities I have cherished. Among them

are **David Weiner** who is a professor at the University of Pennsylvania and who does research on vaccines. He is now vice President at Wistar Institute. **Shari Cohn**, lives in Edinburgh and is a counselor and scholar in Scottish Studies (second sight). **Scott Stein** is an immunologist with a large practice in Victoria, Texas. **Michael Kramer** has been an art director and web designer for Viacom. He also restored aircraft for the *US Enterprise* museum in Manhattan. He now lives and works for IBM in Austin, Texas. **Owen Debowy** pursued a MD/PhD career and is now in pediatrics in Massachusetts. **Arthur Bozza** is applying his mathematical skills to an international ratings company. **Alfred Handler** studies dipteran developmental genetics in Florida. **Jonathan Hanke** used his mathematics in an academic career and now applies it to industry (he is a Vice President at Goldman Sachs). **Michael Phillips** lives in Maryland. **Bruce Wang** lives in Chicago. **Lenny Moss** is a cardiologist in New Jersey. **Howard Diamond** on Long Island has enjoyed his many years as a rabbi. I also keep in contact with my high school friends, **Sam Fillenbaum** (an emeritus professor of psychology at the University of North Carolina) and **Arnold Koslow** (an emeritus professor of philosophy at the City University who now lives in New Jersey). From the Palimpsest group that I enjoyed as an undergraduate, I occasionally hear from **Sigurd Larsen**, a retired physicist. Some keep in contact through New Year cards, email, or Facebook. My closest friend, **Peter Gary**, died at age 93 in 2016.

I am particularly happy I learned to love writing books. They will persist in libraries for generations to come and eventually their readers will encounter this memoir, whether in a published book printed on paper, preserved as a manuscript in an archive, as an eBook printed document, on discs, or in some web-based site. My 100 plus volume diaries are at the archives of Cold Spring Harbor Laboratory.