SERENDIPITY AND RELATIONSHIPS

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Formative Years

I will begin the story with my great grandfather, for whom I was named. He was a colonel in the Indian Army who received an O.B.E. (Order of the British Empire medal) for actions during the Second Afghan War. My grandfather was brought up in India and returned to England to finish his education at Radley College. After immigrating to the United States, he became involved in installing x-ray equipment during the First World War, later selling the business to Picker Institute. As a result, medicine was part of the environment. With a military colonial background, he was a strict disciplinarian, which in the "Flapper Era" caused my mother to rebel, with a marriage to a Harvard law student, followed by an early divorce, orchestrated by my grandfather. After his death, my mother, widowed grandmother and I lived under difficult financial circumstances during the tough years of the Great Depression.

My pediatrician must have been another strong influence in my subsequent choice of a medical career. He would draw rabbits on tongue depressors for me. Later in life, when my sculpture class at CAW made a "tapestry" for a wall in the Children's Hospital near "Babar", I constructed a tongue depressor with a rabbit, a long forgotten memory.

My mother re-married and we moved to Providence, Rhode Island, serendipitously next to the Brown University athletic field. I became the water boy for the football team and traveled with the team to the different Ivy League games. Brown became the obvious choice for college. Living at home in addition to an infinite number of part time jobs and scholarships made it financially possible to attend Brown. With the friendships made through my football relationships, I slept at home but actually lived on campus. As a pre-medical student, involved in several part-time jobs with an active extra-curricular life, I became highly proficient in managing time and setting priorities, useful skills for future administrative responsibilities. I majored in Experimental Psychology, which the department chairman Carl Pfaffman described as "electro sensory psycho-physiology" and came away with both an appreciation for statistics and for shades of gray rather than absolutes. Decisions in clinical medicine are much more likely to occupy the gray scale rather than the black and white scale.

Perfect Fit

In a far cry from today's medical school admission process, I was admitted to Yale the same day I was interviewed. Tom Forbes, who was the Dean of Admissions, Arthur Ebbert, and a psychiatrist all chatted with me, and after a phone conference, offered me a place in the class of 1958, which I accepted immediately.

Yale Medical School was the perfect fit for me. At Brown, with the exception of a course on Alexander the Great with Charles Alexander Robinson and one on Philo-

sophical Analysis of Modern Literature with CJ DuCasse, I would finish the course, take the exam and go on to the next one. At Yale, with no assigned reading or examinations or even recommended books, and after passing through an initial feeling of being totally lost, I came away with a sense that there was always more to learn. If the Yale system is successful, the student is left with a compulsion for life-long learning. However, if the individual requires constant feedback, the Yale system can be very disconcerting.

My living quarters were a garret at the corner of Park and George, which I shared with a classmate, and was probably not large enough, according to the city housing inspector, for a single person. As a consequence, I slept in the garret but really resided in the Medical Library. When I could study no more, I would roam the stacks. One night, I pulled out a copy of "Arrowsmith" to read the inscription: "To Harvey Cushing, if he isn't the best Doctor in the world, I don't know who is. Sinclair Lewis, D. Litt (Fairly Hon.)". I came to believe that the Cushing-Whitney Medical Library represented the heart and soul of the institution. It is the center of the academic medical complex bringing together Medicine, Nursing, Public Health, and Physicians Associates.

The only absolute requirement at Yale Medical School was the necessity to pass the National Board examinations at the end of the second and the fourth years. Never having the feeling you have mastered the material while not having taken a required examination for two years resulted in a period of high anxiety. This angst was compounded in my case, since I was getting married the day after the examination. Ann and I had met at Brown and became engaged during my second year at Yale. I had paid for the engagement ring by working as a subject at the Institute for Alcohol Studies.

The medical school dormitory, which had opened the previous year, despite much skepticism on the part of the administration, had included a few apartments for married students. Times had changed, and these apartments were actually oversubscribed from the beginning. Ann worked as a research assistant for Tom Forbes. During the first two summers, I was employed as a drug representative (or a "detail man") for a major pharmaceutical company. I was able to meet virtually every physician in New Haven, Bridgeport, and Waterbury, which was a wonderful window into real life medical practice.

In addition to the National Board Examination, a research thesis was also a medical school requirement. I had enjoyed Pathology and worked with Levin Waters, a protégé of Dr. Winternitz, who had carried on his research on atherosclerosis using dogs as subjects. The animal technicians, Eddie Ianucci and Peter Integlia would regal me with stories about Winternitz. If he were displeased with a particular individual in the department, Eddie and Pete were instructed to move his furniture into the men's room during the weekend. As far as my research project was concerned, I started having unpleasant dreams about the dogs, instead of dreaming about experimental design, and decided that this would not be my life's work.

The third and fourth years in medical school are the clinical years, when the decision about what to do when you grow up must be made. I liked the intellectual chal-

lenge of internal medicine and the satisfaction found in obstetrics. I ultimately chose internal medicine but, consonant with intertwining trajectories, later melded obstetrics with medicine to develop a major interest in medical complications in pregnant women.

The internship is the medical rite of passage. The hours were theoretically 36 hours on and 12 off, but you stayed until the work was done. In 1958 we were paid the magnificent sum of $25 per month plus free laundry for the uniforms. One of the results of this arrangement of being overworked and underpaid was the development of a strong Esprit de Corps among the house officers, based on paranoia.

The doctor's draft was still in effect and unless you were in a safe haven like the NIH, you were drafted at the end of the internship. I received an offer from NIH, which would have provided an excellent background for a future academic research career. But in the meantime Paul Beeson and the Department of Medicine had assumed responsibility for the medical aspects of the Atomic Bomb Casualty Commission. I had harbored a longstanding desire to go overseas. I leapt at the chance to go to the Orient and along with six other Yale physicians and I went to Japan for a two year stint with ABCC as a Public Health Service officer.

Less Is More

Our son, Peter, finally decided to arrive just before I had to embark for Japan; he and Ann followed several months later. We were stationed in Nagasaki, and I was responsible for a group of children who had been in-utero at the time of the bombing and were now 13-15 years old. We conducted a growth and development study in conjunction with endocrinologists from Kyoto University, which sparked my interest in endocrinology as a specialty. Working in a semi-governmental, bureaucratic organization, I had to write innumerable technical reports, which made subsequent writing ventures easier.

Japan was truly a life-changing experience. The longer we lived in Nagasaki and delved into the Japanese culture, the less we understood. "Less is more" was a real concept by which the Japanese seemed to live. We embraced the cultural aspects – Japanese doll making, flower arranging. I received a black belt in Judo, and when told to yell more during a match, not knowing what to yell, I came up with "Boola Boola!" I even made a heroic but failed effort to grow the largest Daikon radish in Japan. As a result of our stay we returned to the US with a better understanding of American culture – the good, the bad and the ugly. The culture shock came on my return to the U.S. as a first year medical resident .The salary decreased about 200%; the hours increased by the same amount. Nobody bowed any longer. The motor pool, the secretary, and most of all, Keiko San, son Peter's Amah, disappeared.

Camelot

The Yale department of medicine was in an exciting period of development. Paul Beeson had gathered a young, talented faculty around him. I wanted to be part of that, but Beeson had not been enamored by my previous research experience. I made an appointment to see him during my second year residency and asked whether it was

possible to remain in the department and teach without mounting a full scale research program. He replied pleasantly but definitively that it was not possible, and I resigned myself to a pleasant life as a primary care physician in Litchfield. I thought that an extra year of training would improve my clinical skills in the real world. At that time, endocrinology and renal were combined into the Metabolism Section, which covered a large swath on internal medicine. The Metabolism Division had been John Peters' fiefdom. If Osler had brought physicians to the bedside, Peters had brought them to the lab chart. Frank Epstein was a disciple of John Peters and head of the renal section. Phil Bondy, an endocrinologist and chief of the Division had originally come from Harvard and was a disciple of Soma Weiss. As a result, the Friday Metabolism luncheon was an exciting intellectual free-for-all into which everyone entered.

As part of the endocrine fellowship, there was a requirement to spend 3 months in the lab. I caught the excitement of lab research, working with Phil Bondy who had just returned from a sabbatical and deferred going to Litchfield. Phil was interested in the adrenal and I worked in that research area; Pat Mulrow also had the same broad area of interest. I quickly realized that I would always be number three. While in Japan, I had collaborated with Evelyn Man to study thyroid function in the children of the ABCC study. Evelyn was a clinical chemist with a PhD and was also a committed disciple of John Peters who had been interested in thyroid function in pregnant women. There appeared to be an opportunity to combine my interest in internal medicine and pregnancy. At that time, there was little interest in this area elsewhere in the country, and the field was wide open.

Near the end of the fellowship, Paul Beeson asked me to be his chief resident, which was considered the holy grail of house staff training. By this time I was a board certified internist, seven years out of medical school. Explaining to the family why it was an honor for me to regress back into wearing white pants, even if for less money and longer hours, was awkward.

Paul Beeson left for Oxford, and Phil Bondy was appointed chairman. I became Paul's last resident and Phil's first. The chief residency was the most exciting year of my training. I saw the most interesting and difficult patients. Importantly, people listened to my opinion. I was also doing some research with Evelyn Man and presented material at an international thyroid conference. The chief resident had significant administrative duties, where my football managerial background was helpful in priority-setting and time management. Like Japan, culture shock set in after I stepped down as chief resident and was appointed assistant professor. The phone never rang and nobody sought my opinion.

I generated my salary by doing everything. In addition to a heavy teaching and patient load, I became the first director of the Clinical Research Center as well as the first director of Dana Diagnostic Clinic. I was also establishing my creditability in the thyroid and pregnancy field, writing reviews and original papers and even a short book on the thyroid in pregnancy. I started a Medical Complications of Pregnancy

Clinic with John Hobbins from Obstetrics and Joe Warshaw from Pediatrics. The three of us attended the clinic weekly and made decisions jointly. The current textbooks in this area were not helpful. A colleague decided that we could write a better textbook *Medical Complications during Pregnancy* became the definitive work for obstetricians, known as the "Blue Bible," and went through six editions.

In addition to the other commitments, I became chairman of the Medical School admissions committee—by far, the most time-consuming and rewarding of any of the academic committees on which I had served. It seemed a shame to put so much effort into the admissions process and not generate knowledge. I was able to obtain a research grant and did a study on the medical school admission process at Yale with Bob Milstein, a MD/PhD graduate student in psychology. We published three papers, which could be summarized as demonstrating that, after an initial screening for grades and MCAT scores, the admission procedure might be described as a time-consuming, random selection process. Interestingly, nobody disagreed, but nobody wanted to change the time-honored admission process.

I spent a sabbatical year in a laboratory in Marseille, which concentrated on thyroid research. Serge Lissitzky was the "le Professeur" with 10 tenured faculty members, all with their own labs, doing thyroid research. The science, the food and the Cote d'Azure made for a stimulating year in France.

As I progressed through residency and fellowship training, followed by becoming a junior faculty member, I wondered each year whether it was time to move on. Yale had still much to give. However, as I reached my forties, I was becoming increasingly restless. In 1976, the University of Toronto offered me the position as the chief of the university endocrine division, which encompassed 10 hospitals and approximately 90 faculty, of whom one third were concluding peer-reviewed research. Ann and I both liked European culture but decided we were too American to live there permanently. Canada offered a wonderful compromise.

True North

The quality of clinical medicine in Canada was outstanding. Anyone who had achieved Fellowship in the Royal College was an excellent clinician. The medical care system delivered excellent care at a fraction of its cost in the US. Waiting times were longer, but I never saw a patient who needed care urgently who did not receive it. I located my laboratory in the Banting and Best Institute in order to foster inter-departmental cooperation; the Institute occupied the laboratory of Charles Best, who stopped by one day to say hello. The combination of marvelous colleagues in the lab and interaction with the scientists at the Best Institute resulted in a very productive period in my research.

Toronto is a very cosmopolitan city with excellent ballet, music, and theater, all easily accessible. While in New Haven, I had been on the Board of the New Haven Ballet along with Bart Giamatti. The company was small but excellent with big aspirations and a small budget. Wanting to do something in Toronto beyond medicine, I

sent a letter to the National Ballet of Canada, stating my New Haven ballet experience and the importance of the University playing a role in the community. Much to my surprise, I was elected to the Board of Directors. Erik Brun, one of the great dancers of the 20th century was the artistic director. I became very involved in the Company, was vice president for development and ran the search for music director. When sadly Erik developed cancer and died suddenly, the associate artistic directors, with whom I had been very close, were now in charge, and I became even more closely involved in the administration of the company.

In 1981, I was appointed Sir John and Lady Eaton Professor and Chair of the department of medicine and physician in chief of the Toronto General Hospital. The faculty of the university department of medicine consisted of 450 members plus interns and residents located in 10 hospitals. The Eaton professorship was the oldest full time clinical chair in the British Empire. I increasingly came to believe that the position should not be held by a non- Canadian, but I was unwilling to renounce my US citizenship. I applied to the US State Department for permission to take Canadian Citizenship and still retain my US citizenship, which was granted. For the week before taking the Canadian oath of citizenship, I dreamed about Edward Everett Hale's *The Man without a Country*, a book I had not thought about since the 5th grade. In the dream I saw the portholes being shut each time the ship came into port. Managing relations among the ten hospitals was complicated. Fortunately, Canadians are nicer people and much more comfortable working in a matrix than in the United States. There were hospital departments of medicine and university divisions of sub specialty medicine. The administrative situation was further complicated by the fact that many hospitals had well-funded research foundations to which some of the Department's most outstanding investigators were recruited. More recently, a number of the hospitals have merged, making the task easier,

Westward HO!

The Eaton Professorship was a 10 year term appointment although one could remain as a tenured professor. Bill Hollingsworth, whom I had known at Yale and who was my chief in Japan, asked me to look at the job at the University of California at San Diego, as Vice-Chancellor of Health Sciences and Dean of the School of Medicine. Spectacular weather apart, UCSD was a truly exciting center of research. Richard Atkinson, who was Chancellor and later President of the University of California, was totally committed to excellence. State funding was at a crest and with his support we were able to build a 120 bed hospital on campus, as well as an eye center, a research building to house the Howard Hughes Institute, and one for the Center for Aging.

The best decision I made there was to recruit George Palade as Dean of Research. He felt that he was not being sufficiently appreciated at Yale. His wife, Marilyn Farquhar, a major scientist in her own right, had roots in California. UCSD had a loose departmental structure in the basic sciences, which made it possible to recruit talented faculty who did not have to fit into a particular departmental niche. The presence of

new space in the Howard Hughes Building added to the luster. We recruited Roger Tsien, who was awarded the Nobel Prize last year. Rod McKinnon, another Nobelist-to-be, was interested, but didn't mesh well with George. We were able to convince the Ludwig Foundation to place an investigator in the U.S. for the first time. Relations with the Biology Department and neighboring institutes like Scripps and Salk greatly improved. There were actually conversations with Renato Dulbecco about the possibility of Salk merging with the university.

I continued to pursue interests outside of medicine. As a result of a brunch conversation with the Director, the La Jolla Museum of Modern Art and UCSD sponsored an exhibit of Frank Netter's original illustrations, which was a huge success. Following up my ballet interest, I joined the board of a modern dance company, as well as becoming involved with a non-profit group that brought ballet companies to San Diego. However, the larger the ballet company we presented, the more money we lost. Ironically, the appearance of the National Ballet of Canada was the company that drove us into bankruptcy.

I had always been interested in animals and became an associate of the San Diego Zoo. Kurt Benirsche, who was a pathologist at UCSD was very active and had founded the Wildlife Center to preserve endangered animals.

Home

Meanwhile at Yale, Lee Rosenberg had stepped down as dean to join a pharmaceutical company, and I was invited to visit New Haven. Things could not have been better in San Diego. But I wanted to make a statement about the importance of the "Yale System" of medical education and, because Ann had not wanted to leave Toronto and had never really become a Southern Californian, we moved to New Haven. Yale's resources at the time were such that Benno Schmidt had nothing to offer for a dean's package except for a letter pledging support for a new research building within a year. Before our negotiations had concluded however, Benno had stepped down. I had specifically asked him whether he was committed to stay around for awhile. However, Howard Lamar was wonderfully supportive. But, by the time I was ready to hand in my promissory note for the research building, Rick Levin, who had started the year with me as Dean of the Graduate school was appointed President, and the pledge of financial support for a research building was a thing of the past. Subsequently, I raised $60 million towards a $120 million building with reasonable confidence about raising the rest, when the Corporation shut it down over concern about running costs. Where UCSD had been in a period of expansion, Yale, in 1993, was in a period of retrenchment. Furthermore, at a young medical school like UCSD, virtually every venture that I instituted started a tradition while at Yale every attempt at change seemed to violate a tradition.

Positioning the medical school between the university and the hospital was complicated, and I became intrigued with the inter-relations among the medical school, the University and the hospital. I had been interested in medical history since my student days in the Nathan Smith Club and decided to write a history of the medi-

cal school after stepping down as dean. I came to truly appreciate the excellence and depth of Manuscripts and Archives in Sterling Library and after going through the proper initiation about pencils and paper use, spent countless hours going over original material. I came to the conclusion that the Yale Corporation had inherited Cotton Mather's concept about "the need to heal the body as well as the soul", but the soul was primary. The corporation considered it had a responsibility to the medical school, but that was secondary to the major thrust of the university. As a consequence the medical school had been malnourished over the years, but never allowed to die.

Belugas

After returning to Yale, I had continued to engage in extra-curricular activities. In the absence of a dance company, I joined the Board of the Mystic Aquarium, which then was undergoing a $22 million renovation with Cesar Pelli as architect. In 2001 I became Chairman of the Board. Soon afterwards the CEO left. I was on sabbatical writing the book and became interim President and CEO. After several months the search firm asked me whether I would be interested in assuming the permanent position. I had finished my book; I seriously doubted that I could be helpful to my successor, and it seemed like a good time to try something new.

The aquarium staff is completely dedicated to the care of the animals. They were as concerned with a sick spider crab as they were with a beluga whale. I was the president and CEO of the Sea Research Foundation, which was comprised of the Mystic Aquarium and the Institute for Exploration, headed by Bob Ballard, the deep ocean explorer. Accompanying him to the Mediterranean, I dove with the Naval Research sub NR-1. Looking through a porthole at 2500 feet below and seeing several ships that had last been seen 2500 years ago was a real thrill. The animals and the expeditions at the Sea Research Foundation were wonderful. The financial situation was less so. Based on a consultant's estimate that we would have 1.4 million visitors a year, SRF had borrowed $22 million. Yet, the largest tourist attraction in Connecticut by a factor of two, 800,000 was, and still is, the maximum attendance, causing $1 million a year short fall. We always made payroll but depended heavily on stretching the accounts payable. After 6 years of driving 100 miles a day, I stepped down as President and CEO but have remained on the Board. All in all, it was a very different and a very wonderful experience.

Throughout this period, I had remained active in medical affairs. Iodine deficiency is the world's most common thyroid disorder, affecting one third of the global population. Iodine is a necessary component of thyroid hormone, which is required for normal fetal brain development. An iodine deficient mother may give birth to an infant who will not attain its optimal intellectual development. Supplying iodine to this deficient population may increase the average IQ by as much as 10-15 points. I chair an NGO (international non- governmental organization), which in conjunction with UNICEF and WHO among others is attempting to eliminate iodine deficiency

through the world –wide distribution of iodized salt. Coverage has now reached 78%, up from 20% in 1990. In response to entreaties of an old friend, I have become chairman of the Board of Directors of the Medical Center and a trustee of the University of Connecticut. The attraction of being at an institution where the hospital, medical school, and dental school are administered as a single unit was irresistible. Both the medical school and the dental school are excellent. The hospital is 30 years old and requires renovation. The political situation with the other hospitals in Hartford is such that any attempt to improve the university hospital is met with great resistance. After countless hours of negotiation, we are close to a merger with Hartford Hospital. Whether this will occur, we will have to wait and see.

As I look back, my intellectual trajectory veered in a number of directions, country to country, coast to coast, and vocation to vocation. These paths were influenced by serendipity and relationships, as much as by the result of prolonged planning and deliberation. Where will the paths end and the ultimate trajectory defined? We will have to wait and see.