Growing up in Stans, Switzerland, Gustave Lussi, in his teenage years, ski jumped in the Swiss Alps, feeling firsthand the soaring, straight-forward flight up and out of a big jump take-off. At that time, in 1915, skiers learned to jump with the skis together. One day, before a competition, he went off the jump a little wrong and broke his skull in two, necessitating a metal plate to be installed to keep the two halves together. He lay in hospital for almost a year during which time he had several roommates in the bed next to his, one of whom was also a ski jumper. While trapped there together for a month or so, he and the other ski jumper came up with the idea to jump with the legs apart to get more distance and flight. The fellow jumper healed, left the hospital, and introduced this new method of jumping with the legs apart; some Swiss skiers started jumping with the feet apart, then went back and forth from legs together to apart for decades. Mr. Lussi told this story to his students when he was attempting to get them to soar into a delayed Axel with the legs stretched and apart, and, eventually, other delayed jumps. In the 1970's he always ended the story with: "It took them sixty years to figure out to jump with the feet apart which they do in ski jumping today."*1

After his skull repaired Gus Lussi turned to figure skating with teacher, C. DeBergen, in Bern, Switzerland. Then, in the spring of 1919, young Lussi sailed for the United States, landing in New York City, and started training seriously about four months later with his newly emigrated Swiss teacher, DeBergen, whom he supported by washing dishes at the St. Regis Hotel in New York City. After a couple of years he decided that "if I cannot be a champion, I shall make them."

By then DeBergen had left for a new position as senior instructor at the Philadelphia Skating Club, and offered young Lussi a job as junior instructor; within the first year of Gus Lussi's arrival there he entirely revised the method he had been taught by DeBergen. Mr. Lussi didn't like the way all figure skaters were skating at the time: "the men put their index finger on their head and the other hand on their hip to do a spin, one turn high up on the spikes.... Figure skaters were 'booed' by spectators who were on the ice with speed skaters.... I decided to revolutionize the sport, to make it into something respectable for men to do."

He quickly employed his athletic background from skiing, ski jumping, and fortuitous studies in anatomy with renowned University of Pennsylvania professor and physician, R. Tait McKenzie, while serving as a model for his famous sculptures — one of which is the relief entitled, Brothers of the Wind, reproduced for the entrance of the 1988 Calgary Olympic Stadium. A member of the Philadelphia Skating Club, Dr. McKenzie taught young Lussi how the body must move on a pair of skates "because the hips run side to side [twist against skates and shoulders unless controlled] and the skates run forward to back."

Through these youthful experiences, his own skating experiments, and those with students, plus his own discoveries "fooling around" with physics, Mr. Lussi realized that making jump take-offs much straighter, shorter and snappier, combined with the

¹ Quotes within this biographical sketch are from recorded interviews collected by me (Cecily Morrow) or Lois Waring McGean, or from lessons with Gustave Lussi when I was a student.

free leg and arms passing straight through at take-off, gave any skater greater distance and height in jumps, a delaying of rotation action and, therefore, increased airtime in which to then complete rotation. "I used to come to Lake Placid and teach in the winter also, 1922, '23. I used to bust my face off from jumping Axels, experimenting on myself, skating on the tennis courts at the Lake Placid Club."

By 1924, he had his first U.S. Junior Champion, Egbert S. Carey. And, after moving to the Toronto Skating Club in 1926, brother and sister, Montgomery and Constance Wilson won their first Canadian Nationals (1927) and the next five consecutive North American Championships (held every two years) in singles and pairs. Early on Mr. Lussi came up with inventions in collaboration with students, the stories of which he employed to inspire later generations of pupils: "Montgomery Wilson and I were having competitions with each other to see who could do the longest loop jump. One of us came around, stuck the toe in, and I knew then we had a different jump.... I called it the flip, and Evelyn Chandler [Mapes] came up to Toronto and saw us do it and she took it back to the States and they called it the Mapes jump."

In 1928, Mr. Lussi's student Montgomery "Bud" Wilson landed the first double Salchow in the Canadian Men's Senior competition. That same year, Mr. Lussi took both Constance and Bud Wilson on to the Olympics where the officials "criticized Connie for closing her figures to round them out. Up to that time they left the figures open — you never came back to your start — even in 1947 they were doing this. But in 1928 Connie was marked down for closing her figures.... I was the first to make a straight rocker or counter parallel with the short axis or straight across the long axis of the figure." To encourage his students to be inventive and stand up for themselves, Mr. Lussi elaborated: "I took Dick Button to the Worlds in Stockholm in 1947. Every day the officials came to me and said: 'You are wrong. You must leave the figures open." Finally, Mr. Lussi replied: "This boy's champion of the United States and that's the way we're going to do them.... That same year they had a meeting in Stockholm and they said the figures shall be closed, in 1947."

Mr. Lussi was always encouraging a student to jump straighter, farther, and higher before rotating; he'd say, "Sonja Henie's was a rotation jump. She jumped around the circle, took off and landed on the same spot.... Constance Wilson was the first female to perform the first real Axel...but she still turned a three afterwards. And, after teaching it to her awhile, I was called down to the Committee room. They told me that I couldn't teach a jump like that to a lady. It was unladylike, likely to hurt her."

Constance and Montgomery Wilson were both doing Axels but "Bud Wilson was the first to do a double Salchow in St. Moritz in 1928 and everyone was astounded that someone could turn so much in the air." "Bud never checked a jump and we had many arguments about it. That's why he lost the Worlds in 1932 against Karl Schaefer in Montreal; he just spun out.... Everybody turned a three on landings; we all did. Felix Casper...landed backwards but had to turn a three afterwards." "No one until 1936 could make a double jump without turning a three afterwards; they couldn't ride out the landing edge. Bill Grimditch was the first one. He came to me in Ottawa and he was the first one to flow out of an Axel because I taught him to check the landing."

Mr. Lussi even influenced a skater's attire. He designed all of Constance Wilson's dresses to be closely fitted and stop at her knees so she could jump unencumbered. "When I got to Toronto, I worked with Osborne Colson. I started him,

Mary Littlejohn, Stewart Rayburn, a whole bunch. And when I went to Ottawa with them, out of twelve titles, my students won eleven."

"In Toronto, I was charged with doing the shows. There were many things I did with them." Apparently, for these shows, Mr. Lussi came up with original steps and group formations, the basis of those used in many ice shows today."²

Before the summer of 1932, "the most one could skate was from October to April or May.... After they covered the [1932 Rink in Lake Placid] for the Olympics, I persuaded the town to keep the rink open to let me bring my skaters down from Canada to perform big operettas.... For inspiration I went to the history museum in New York City and studied the Egyptians for Cleopatra. I designed the sets and costumes and my father-in-law painted the ice. The shows ran every summer for several years. We were the first to paint the ice. This was the beginning of summer skating. And they were so popular that Eddie Shipstad called me from Ice Follies to direct their show."

Mr. Lussi's renown as a director and choreographer of shows was so widespread that in the early 1940's "I was called at three in the morning by Mr. Vincent Astor, the owner of the St. Regis Hotel in New York City, where I had started washing dishes twenty years prior. He asked me to produce their show. They had a little rink in the dance floor..."

In the meantime, for competition in the early days the music was not recorded. "It was always orchestras of about 10 members. The orchestra would start playing and the skater would just float out and start skating. They had stop watches and would blow a whistle." There were not exact movements set to the music. In 1935 a program choreographed to a set piece of recorded music was skated by Lussi's student: "Jane Vaughn's interpretive program to recorded music, not a band, was the first, and it took the judges a long time to mark it…first time a record was used."

"The whole time I was working with my students I felt we had to have something new every year. We tried all kinds of things like double Salchow into a toe spin. The first double loop was Bill Grimditch in 1941-42 in Boston. He did not throw the leg at that time. He had the first jump sit as well."

"Then came the flying sit. One night I was talking in my sleep and rolling all over in bed. My wife woke me up and I sat straight up in bed and said, 'I've just invented the flying sit spin." So I went in the next day and taught it to Buddy Vaughn [1942]. It wasn't as open then. With Hayes [Jenkins in the 1950's] we really started to open it up. He would really fly." "But the greatest flying sit I had was Misha Petkevich...he came down the rink full speed and let go like anything.... Everyone had to scatter to get out of his way."

Of the flying camel, Mr. Lussi tells the story: "I was working on the back spin [camel] position in Dick's camel-jump-camel and I had him repeat the forward camel every time before jumping onto the back position. One time he got tired of doing the forward camel, just stepped and jumped over to the back camel right away. We worked on it to really make it something but kept it secret so no one else would pick it up until after the competition [1945 U.S. Junior Championships]. We called it the Button camel at first."

"And Dick had a double flip in 1946 already, and the double Lutz." In order to complete these new double jumps, Mr. Lussi devised jumping up and out then rotating with the legs crossed. Prior to Mr. Lussi inventing this crossed-leg rotation position, skaters jumped and spun

² Information from a three page document by William H. Grimditch, Jr.

with their legs side-by-side. Mr. Lussi trained the spins for the rotation segment of the jumps. Soon almost everyone jumped this way and still does today.

"The delayed Axel came about when I had Barbara Jones, in 1946. She had a terrific split jump with both legs stretched right out in the air. One day I said to her, 'Why don't you kick your leg out like that in an Axel?' She tried it and made it. That was the birth of a delayed Axel."

"McLaughlin was a student from Syracuse and the father had a foundry. I asked the father to make a blade of my design and he did but the steel did not hold up well. And, finally, at St. Moritz people came up to me and asking about the blade with the top tooth. Later, Mrs. Ellen Burka gave it to a factory in England and that was how the Pattern 99 came to be. That top spike is mine.... In 1947, in Stockholm, Jacques and Arnold Gerschwiler could not believe Dick's jumps. They went onto the ice to examine Dick's toe jumps to determine what propelled this young American to such heights wearing a McLaughlin blade. You wouldn't even hear the toe going into the ice because you place the top toe. You do not break the ice. On Dick's double flip, you could hear nothing, absolutely nothing."

"The next year we started the double Axel and Dick kept setting on his seat. I couldn't figure out what was wrong. So I took a walk out on my property by the stream on a Sunday and it came to me all of a sudden...lift into a double loop forward. I went back on the Monday, taught it to Dick and by Wednesday we had a double Axel. And Dick did it in St. Moritz in 1948."

"At the time, in Stockholm and St.Moritz they had a great big gong and they went bang and that was the end of your program. I'll never forget, Dick had a flying sit at the end of his program. It was the main event. He started to take it and the gong banged and the judges had to drop their heads.... It ruined the whole effect of the program. And finally there was a meeting called in Copenhagen that spring.... I wanted two things, to close the centers, and to allow 10 seconds on either side of the prescribed program time...by which they changed the time of the program for ten seconds either way."

"I felt it was necessary with my champions to have something new to work towards.... With Dick Button we started the triple loop. We trained in Garmisch before the Olympic Games in 1952.... So,he finally accomplished the triple loop, but his left leg gave out, the foot which he wrapped in hurt him terribly, from pulling in on that leg. I did not know then to pass the foot first to roll in afterwards, which I did with Misha Petkevich in the double and triple loop.... It's so much easier that way. The flow is so much greater. Because all of us start the double loop...to make a fair curve to turn in on and the fast curve is no good. The line will be perfectly straight the other way. You throw distance, tremendous distance that way.... The flying double loop is then a *delayed* jump."

In Lussi jumps, there was always a delay, a delaying of rotation action, a lift...and then a rotation, but as the decades progressed, this delay became more pronounced so that, among later generations of Lussi students, the term 'delayed' more and more came to stand for the fully outstretched delayed-rotation position seen in his pupils' delayed Axels, the position which he eventually wanted employed in every jump, single through quadruple. "Donnie Jackson [in the 1960's] came to me and I taught him the delayed Axel, delayed double Salchow, and delayed double loop. In the double loop, I had him pass the free leg back parallel to the straight lift-off on the flat edge. He was the first one of my students to do it that way."

Mr. Lussi was profoundly interested in stimulating other people to think: "I met a man on the train to Philadelphia. He was an aviator from NASA and I asked, 'Why do the astronauts get so sick when they go up there?' I told him that it was a matter of training.... I have a boy [Ronnie Robertson] right now who can make 5 or 6 turns per second. Why don't you get a hold of him and see what he does and how he does it. So, Ronnie was called up by NASA and they tested him [6-1/2 revolutions per second]. They tossed and turned him all around and he never got dizzy."

"I named it the piston roll because when done well it runs down the ice with the legs in, out, 1, 2, 1, 2. Ronnie did the piston roll in 1956 and I put it in the middle of his program for the music. The audience went wild, standing ovation which cut the rest of the program down.... It was a mistake but the piston roll was a big success. And in 1956 Ronnie did a triple Axel, a double Lutz with a triple Axel right after, in the Worlds, in Garmisch, and landed it perfectly."

The 1970's saw Dorothy Hamill studying for years with Mr. Lussi when he was already in *his* late sixties. Yet, he was still working on new ideas. He asked Dorothy to try something in her flying camel. She tried what he described to her and it became her signature move, the Hamill Camel.

In the early 1980's Mr. Lussi began a collaboration with his former student, Cecily Morrow, which resulted in: first, the cover story for the February 1984 *GQ Magazine;* second, in 1984 and 1985, the Lake Placid Summer Freestyle Invitational's Compulsory Free Style Elements Competition; third, a new jump, the Lussi lift-off, a formal explanation of this jump which developed out of his work on the ordinary loop jump; fourth, in 1990, a PBS documentary profile on Mr. Lussi's life, *Gustave Lussi: The Man who Changed Skating*, and fifth, in 1992, a series of instructional video tapes, *SYSTEMATIC FIGURE SKATING: The Spin and Jump Techniques of Gustave Lussi*, documenting Mr. Lussi's teaching methodology.

Morrow remembers: "We shared students. I would work with some of his in the winter and he would work with some of mine in the summer in Lake Placid. After his lessons, Mr. Lussi would meet me those days in the cafeteria of the 1980 Olympic Arena and we would discuss technique and the future of figure skating. I would interview him and many a time he'd say: "How many judges have ever examined the print of any jumper? So many land their triples on the inner edge. I'd like the judges to go out on the ice and examine the take-offs and the landings." These discussions led me to design, in 1984, a Juvenile through Novice spin and jump event based on Mr. Lussi's teaching skaters spins and jumps in his small patch of ice. Mr. Lussi and I collaborated with Fred LeFevre, the Chief Referee, and the Director of Figure Skating at the Olympic arena to hold this event in the Lussi Rink so that skaters learned to take their jump or spin quickly and efficiently and judges could go onto the ice and look at their prints, and compare things like distance and height of one skater to another.

Over a lifetime of producing champion after champion, Mr. Lussi continued to make jump approaches, take-offs, and landings straighter, jump flight more spectacular. Eventually, by the late 1980's, he was talking about how to apply his delayed rotation to quads. Mr. Lussi's intention was for skaters to continue his direction in jumping for all triples and quads because the physics of the human body jumping on a pair of skates does not change.