THE THREE DIMENSIONAL CANVAS: PROFILE OF A PERSON

 A slight, pail man peers over a half-finished oil painting through squinted eyes and black-rimmed glasses. Quick, precise hands wield the long brush as it glides along the canvas, giving life to the seated woman in the portrait. The air is stuffy and filled with the odor of turpentine. Suddenly, the silence of the room is shattered by the sharp ring of a bell.

 Chao-Min Liu stands back to survey the canvas. The bell signifying a five-minute break. He is one of a dozen or so painters in the room this Saturday morning, in the member’s studio at the Art Students League of New York. Yet Liu, by profession, is a biochemist working for Hoffmann- La Roche Inc., a pharmaceutical company. This is man and his hobby, but this is a man who is serious about his bobby. The seemingly apparent contradiction between the creative, expressive world of art and the precise, analytical world of science is not so “apparent” to Liu; in him, both converge and make up a way of life.

 Born in 1936 in a country town called Minshung in Taiwan, Liu was the forth of nine children. His father was an oil painter, and watching him painting would leave an indelible mark on Liu’s young mind. When he was just six years old, his mother took him and his brother to his father, then working in Hang-chou, China. But world War II broke out, and they weren’t able to return to Taiwan for the next 4 years. Historically at this time, Japan was at their height of its imperial power, occupying much of the Asian Pacific including Taiwan and eastern part of China. What characterized these years during WWII for Liu living in Han-Chou, China were the air raids, air shelters, and the Japanese school he attended. He felt “quite isolated because except my father, we do not speak their language, the local people hated the Japanese. ----at that time the city was under the Japanese military control. We totally do not mingling with the local people.” As a child, though, there was “no feeling of real big impact of the war … not much effect on life. “There was not real fighting where we lived, just a few air raids.” He attended “Hon-chou Japanese Elemental School” for 3 years until the end of war.

 When Japan started losing the war in early 1945, Liu’s family, with their Japanese citizenship and considered military dependents of the Japanese occupying force in China, were asked to move (evacuate) out of the city of Han-Chou on a voluntary basis. However, travel by sea between China and Taiwan for civilians were almost impossible because of American air bombardments and submarine attack on Japanese shipping lines. Therefore, the only option was a land route trip by train thru Peking to Manchuria, Korean peninsula, and finally to the islands of Japan. His family chose to remain (stay) in the city, which Liu thinks in retrospect was the “right decision, because “if we travel through Manchuria, we would suffer more or even loose our life on the trip due to imminent Russian attack of Japanese controlled Manchuria and Korea .” Fortunately, war ended few months later and the Liu’s were able to return by sea to Taiwan in the spring of 1946.

 When Liu was twelve years old, he attended a Christian missionary school in Tainan (although he did not and does not adhere to any particular religion). Consequently, he was away from home for 3 years. He then attended high school in Chiayi commute from hometown Min-Shung, and again left home for college and graduate school in Taipei. With encouraging, unrestricting parents, Liu grew to be independent and cherish his freedom.

 Liu’s interests as a child were broad and undefined. He liked sports, drawing, and the harmonica. “I was exploring whatever possible so I tried many things,” he said. In the area of art, “certainly, painting as art is an interest I had for a long time.”

 Academically he found his niche in the sciences. His favorite subjects in high school were biology and chemistry. Amidst cut-throat competition for admission to the National Taiwan University in Taipei, the best university in Taiwan, Liu worked hard in preparation for the entrance examination and was accepted. He majored in biology and earned a Bachelor’s degree in Science.

After four years of undergraduate and two more years of graduate school in Taiwan University, Liu served in the military for one year (required of all Taiwanese men), did research in the university and taught at a medical college. He then came to America in 1963 to earn a Master’s and Ph.D. degree in biochemistry at the University of Wisconsin, Madison, WS.

 The University of Wisconsin was , “the only school with a biochemistry department that offered me a scholarship, “ Liu explained of his choice of graduate study in the United States. Ostensibly, Liu came to America to study---“that was my major motive” But he said “ I wanted to have more freedom,” Taiwan, a small island, is “a place with limitations. For Liu, leaving Taiwan to other countries was economically not permissible at that time unless he has financial support from other sources. The only way to get out of Taiwan was by having a scholarship for graduate study in a foreign country.”

 Liu’s immigrant experience was not exactly full of hardships and disadvantages, but he did fell the same insecurity and powerlessness that many foreigners faced. He equated the shift in surroundings with his familiarity with the faces of the people around him. “When the plane stop in Tokyo, Japan , I felt like I am a tourist --- I spoke their language, they have the same faces.” At the stop in Honolulu, Liu began to notice people there are a mixture of races: oriental, black, and white. Finally, California was “the other end of the spectrum.” He stepped off the plane in san Francisco feeling “uncertain …. You see all faces are different.”

 Liu was fortunate to have a friend at the University of California to meet him at the airport. Still, on the four-day Greyhound bus ride to Wisconsin, Liu felt lonely and helpless. “I hardly spoke English,” Liu recalls. The problem was not reading and writing, but oral comprehension. “dialects and accents totally confuse you and you cannot respond or speak out,” he added, with his increasingly characteristic “you” – as if distancing the experience from himself.

One summer that Liu remembers vividly from graduate school in America was a three-week camping trip to the national parks in the west. “the grandiose of the West is amazing.” He said. “you can really appreciate nature there , it’s so beautiful “ He thinks Americans are very fortunate to have places as beautiful and accessible as the Grand Canyon or Yellowstone National Park. .

 At the University of Wisconsin, Liu met Sharon Shih, who also came from Taiwan and studied statistics there. They were married in 1969, the year they finished their graduate study. Liu and his wife lived in New Brunswick, N.J. for two years when Chao-Min Liu was a post-doctoral fellow at the Waksman Institute of Microbiology, Rutgers University. When Liu got a job at Hoffmann-La Roche Inc., in Nutley, N.J., they moved to their present home in Cedar Grove, NJ. and having two children, Franklin and Daniel, in 1971 and 1974, respectively.

 Thirteen years after he left Taiwan, Liu went back there for a family visit . He was pleased to see that people in Taiwan had made economic progress; it was more urban and industrialized than agricultural. But he found that his family and friends hadn’t changed much. He was ambivalent on the “big question” of which he considers his home, America or Taiwan. “Perhaps it is still in the very old place where you come from” he sentimentalized. But that feeling is still not clear “if you move too often, leave home early, like me since junior high school.” He has lived in Cedar Grove with is family for the past eighteen years, but “its still not home.’ The house is mortgaged , it is not mine yet,” he says with a laugh. On a more serious note, he mused, most Americans also have a problem in the identity of their homes; they change jobs and move” frequently because of the upwardly mobile society. “In Taiwan, people usually live in the same place for generations. Of course, it was an agricultural society -- you don’t have to move. The Liu’s now live in a bi-level house in Cedar Grove with no plans of moving. Mrs. Liu works as a software programmer for Empire Blue Cross/Blue Shield in New York. Frank is a freshman at Colgate University, and Danny is a sophomore at Montclair Kimberly academy, a private high school.

 Dr. C-M Liu has been a biochemist for Hoffmann- La Roche Inc. in Nutley, NJ , for the past eighteen years. In his line of work, he is in charge of a research group, designs and coordinates experiments with the help of specialists in the search for a new drug . Effective new drug candidates must be tested and retested for efficacy , side effect, and safety in human before being approved by the U.S. food and Drug Administration. Presently, Liu is working on a project to find new antibiotics. First he must devise a logical and meaningful assay methods of testing compounds for their biological ( anti-microbial activities) in vitro. Hypothetically, he would tests , say over 10,000 different compounds or more in the first screening in test tube. Compounds show to kill bacteria are then test again in the infected mice and rats. Step by step, animals closer and closer to humans such as dogs and monkeys are used, in order to eliminate those ineffective or toxic drugs in the living animals. Use of these animals in the laboratory is ‘a necessity.’ Liu emphasizes. “For those who object to it, they don’t realized that without these steps, it is almost impossible to find and develop a new drug that can be safely used in human.

 Liu finds the nature of his job interesting and exciting, “because you’re trying to find.” new things all the time.” He feels he is fortunate because the job fits in with his interests and his background. Unlike some, he uses what he learned in school every day at work. He also enjoys the interdisciplinary nature of the job, which not only involves biology, chemistry, microbiology, and pharmacology, but also the interpersonal skills involved in the collaboration with colleagues specialized in other field of work.

 As for the artistic side of his life, Liu started painting as hobby when he was 12 years old. He tried keeping up with his interest in art as much as he could ever since, but during his busy college and graduate school years, he could no pursue his hobby in earnest. “I realized that if I don’t start sometime, somewhere, there is no way to get into “ the field of art, Liu said. Therefore, Immediate after he got a stable job in 1972, He began attending art classes at local adult school and workshops in painting. He was disappointed to find attending these classes did not help much to advance his study in art. What he was looking for is a place where he can be train as a professional painter. In 1980 , he was very happy to enroll in classes at the Art Students League of New York where he can seriously learn the art of painting with masters teaching in the school. For his painting, he prefers oil paint to any other medium for its versatility and flexibility in expressing color and form.

 “The metropolitan New York is a nice environment for artists” , it is wonderful place to study art. observes Liu. “you can instantly look around and compare others’ work at art museums or in galleries around the city . You get a good feeling of how other people work. As a life member of ASL, Liu paint every Saturday in the member studio of the Art Students League. The member studio is like a workshop where he horns his painting skill by his own and meet other professional artists. They discuss art, exchange information on art exhibits, art supplies and technique to “broaden you view and your activities in art”, . Often, Liu goes with the others for outdoor painting or to art galleries. “they are very serious artists--- very enthusiastic .” he remarked with approbation. “some sell their works but often got frustrated because it’s really hard to sell paintings to make your living.”

 Liu is lucky in that he doesn’t have to support himself and family with his art work. He is please to paint for himself --- paint for the sake of art. He also uses it to escape from busy laboratory work. “In art, I am the master of myself.” He declares. In painting for himself, he find his freedom to express his feeling toward the subject he want to paint. He does not wish to confine himself to others’ tastes. “If you paint for someone else, you have to be conditioned by what they like … …. If you put (your work) on the market , you are subject to outside control … there’s not enough freedom. I do not want to be imposed upon.” He has sympathy for those artist friends who have to struggle to make a living of their art.

 Liu has been painting on his own for several years, Self study , like research in science, is important for developing and discovering your own style and way of expression in painting, He explained. He is always trying to improve on what he has accomplished. Just like doing research at Hoffmann La Roche, there are always something to be discovered and develop. Liu believes strongly in the interrelatedness of art and science. He reconciles the two worlds; to him they are complementary. “Art and science merge,“ he says a matter- of- fact.

In his own life, his intense efforts in art do not diminish his effort in science. “I always try utilizing my time better,” he said. In his spare time, he is either painting, reading about art, or visiting art museum/galleries .

 Liu views art and science as alike in their essential demand for keen observation and creativity. Science tries to discover what exists in nature by inventing device (technology) that helps observation and data collection. “Many scientists need creative minds to find innovative approach or tools to scientific discovery. Without the invention of telescope by Galileo, it would not has been possible for him to discover that Jupiter also has its own moons like our planet. “I don’t see any contradictions”

 Another component of their interrelatedness is the fact that art and science are mutually beneficial to each other, i.e. they both can be used to improve the other. Science, as Liu stated above, requires innovation. On the other hand, the art of painting has been improved greatly, by our understanding of geometry , the theory of linear perspectives and the science of light and color . Leonardo da Vinci, who used his studies of the human anatomy to better represent the human body on canvas is another example of scientific approach to the art of painting.

 What separates art from science, according to Liu, is the freedom of expression of feeling. Science stress the logic , objectivity ; art would set you free to imaging unthinkable. In this way only, Liu said, “art leads science.”

 As the master of the canvas of his being, Liu has taken two dimensions, superficially irreconcilable, and created a third – unity.

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