S M A R T G U Y S

at play
in the reality distortion fields

Some people behind the recent
information technology cycle

by

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CHAPTER I

Role Models

"The imagination needs to be cultivated to assure success in life."
Leland Stanford

Bob McKim was standing in the dining room of his house in Santa Clara, California, fondling one of his bronze sculptures of realistic, elegantly-proportioned female figures. He was explaining, as he ran his fingers lightly over the glassy-smooth curve where hip meets thigh, that the model for this particular piece had come to him wanting a present for her husband, crafted while she was still looking good. The result, a two-foot long reclining nude, must have pleased both her and her husband. She was posed resting on one hip, legs bent slightly, with her torso turned downward and supported by one elbow. Her hands were clasped lightly in front of her face, her firm breasts suspended. "I added a bit of meat here," McKim said with a little smile, as his fingers caressed the outside of her thigh just below the hip.

Tom Bentley and I laughed out loud. McKim joined in. His sculptures are a delight, full of whimsey, an heartfelt tribute to women. One figure stands on what is recognizable as an open can of tuna fish: "Venus on a Half Can of Tuna Lite." Another seems to float in mid-air brandishing a computer in one hand: "Mary Had a Little Laptop." Another hovers over a globe, face down, wearing helmet and goggles: "Whatever Happened to Emilia Earhart?" Another, stretching on her back and arching her neck, contemplates an ice cream cone: "Sprinkles." And when asked about the female figure astride a globe holding a small parasol over her head, McKim said with a smile, "That one is from the Global Warming Series."

McKim's guided tour of his work was momentarily interrupted by the entrance of his partner, Debbie, a woman in her 30s with close-cropped dark hair, whose abundant energy preceded her like a gust of wind. She seemed simultaneously agog with the presence of visitors, the fine day, Bob, the air she breathed, and a green parrot that she extracted from its cage on one side of the dining room with a burst of lively, high-pitched conversational cooing. Debby is also a sculptor. Several of her small, abstract anatomical studies were perched on bookshelves. These were coil-built of dark brown clay, a technique that resulted in muscular, kinetic figures. She announced that she was off to shower with the bird, apparently a frequent ritual, and away she went talking a blue streak to the parrot that was leaning forward on her wrist like a hood ornament, cheering her on. McKim beamed.

Anyone with a sense of art and humor would relish a few hours with Bob McKim. For Tom Bentley, this meeting in 2007 had special significance. He hadn't seen McKim since the 1970s, when Tom was a bored graduate student in mechanical engineering at Stanford University in Palo Alto, California. Bentley says he would spend hours walking Stanford's expansive campus contemplating his wretched state. Like so many students, his educational choices had been father-driven. His late father, also named Tom, was a Master Sargent in the US Army Rangers. In World War II he was a behind-the-lines artillery spotter, one of few who survived that perilous duty. Tom Sr. was six-foot five, a raw-boned, towering man who ran lumber mills back in Oregon after the war. He was used to having his directives followed. His son, a lanky kid who quickly grew to six foot five himself, worked in the mills summers and rebuilt cars in his spare time. He dreamed of designing engines for Porsche. Tom says he barely got into MIT, but having done so, and having graduated in 1973, he found himself a lot more valuable commodity.

It was a confusing time. The Vietnam war was finally winding down. Every university city in America had been particularly and painfully divided by that war. "MIT was like an alien planet within the Boston culture," Tom says. "Two different worlds." His low draft number guaranteed a trip to Southeast Asia, so Tom enrolled in the Air Force ROTC program at MIT. Graduates went into weapons research, not rice paddies. The colonel running the program called his job "baby sitting nerds." When he asked about what kind of research he might be doing after graduation, there

was talk about statistical evaluations of the effects of cluster bombing on the Viet Cong. "Luckily," Tom says, "the draft ended before I had to sign the papers."

He applied to Berkeley and Stanford for graduate work. "Berkeley offered me a full scholarship. Stanford said come if you want. Berkeley, like MIT, was fueled by government investment, weapons research, big business. Both were universities of the military industrial complex. "Stanford was more isolated from all that. On the Stanford campus you got a friendly feeling. People smiled. It was a different culture. MIT and Berkeley were classrooms. Stanford had lofts where people built things. I was attracted to the energy."

The energy, as Tom says, was diametrically opposed to that with which he had grown up. "My dad was a depression kid. His core belief was that you succeeded at the expense of someone else – winner, loser. You make the team and someone else doesn't. Life is tough. Step on the lesser beings. All that kind of stuff was reinforced by my high school experience, and the competition of getting into MIT. During orientation at MIT they did that thing of saying look at the person on your left, look at the person on your right....one of you won't be here in four years. It was a fear-driven place."

In 1970, when Bentley entered MIT near the bottom of his class, it was all about test scores. One in every five students accepted had a perfect math SAT score. One in eleven had perfect math *and* English scores. Tom recalls the first student he

met in his dorm shook his hand and said, by way of introduction, that he knew Pi to the hundredth place, and proceeded to recite all hundred numbers. Tom was appalled.

The icy-cold, cut-throat competitive atmosphere put Tom in the infirmary with ulcers and migraines. Despite the fact he was rowing crew and downing several booster shakes a day, he lost 20 pounds the first couple months he was in Boston. Weight was not all Tom lost. One experience he had at MIT freshman year would have soured most kids permanently. In his first engineering class, arbitrary groups of four students were formed to tackle this problem: find a way to replace all of Boston's gas mains without digging up the streets. It was Tom's kind of assignment, and he produced a clever idea. His plan was to blow a ping-pong ball with a high-tensile thread attached through a section of gas main with compressed air. He would then pull a thick-walled polypropylene tube through the main. Surging a blast of steam through the main would cause the polypropylene to melt and coat the inside of the cast iron pipe. He brought the idea to his group of three other students. They loved it. They patted Tom on the back, saying they were going to get an A for sure. They told him he'd done so much work he should take the weekend off. So he did.

When he returned on Monday morning, his advisor called him in. It seems Tom's three fellow students had filed a formal complaint against him, saying he hadn't been doing his share of the work or attending group meetings. Flabbergasted, Tom produced his design notebooks where he had worked out dozens of details like the temperature of the steam, and while the professor believed him, he said it was the

word of three students against one. With Tom's idea for the gas mains in hand, the three went on to win the annual De Flores design award at MIT. The team was awarded a $2500 cash prize. (The City of Boston funded a pilot project based on the gas mains idea).

Tom was subsequently given his own project, and he got his grade. He was a self-described rangy redneck from Oregon, an athlete, and while he contemplated beating the crap out of the less athletically-inclined students who had conspired to frame him, he resisted the temptation. "The worst of it was," Tom says, "that incident reinforced all the stuff my father had been telling me for years."

Things improved significantly for Bentley when he discovered a course called Introduction to Engineering Design (course 2.70 in Tom's era; 2.007 in today's MIT catalog). The assistant instructor for 2.70 was a man named Woodie Flowers who was not the standard black-suit-and-tie MIT professor of the day. Early pictures show Flowers with a head of hair as wide as his shoulders, and a handlebar mustache – a Cheech and Chong look-alike. A veritable hippie intellectual, Flowers was fond of wearing paisley shirts with contrasting paisley neckties. When Bentley saw a notice that Flowers was defending his thesis before a board of professors, he made it a point to attend the session.

"There were eight professors and me," Tom recalls. "I'm in the back. Woodie comes in and says he has a view on research: that it doesn't mean shit unless it helps people. The professors look at each other. Woodie tells them he decided to focus his

research on something with a catalytic effect, a simulator for prosthetic limbs. An amputee would attach a prosthetic limb he was trying out and walk through the simulator. This simulator would evaluate body dynamics to determine if it was the best device for him. It was awesome. Woodie was in his twenties at the time. This was a guy I wanted to get next to."

The highlight of Introduction to Engineering Design was the final project. It took the better part of three weeks, and was an annoyance to other faculty members because it was all-consuming to the students. The first year of the course (1970), the students were given a kit of materials they had to use to design a machine to travel down a 45-degree ramp in exactly three minutes. Over the years, the projects became more dynamic. One vehicle had to be designed around an armed mouse trap "engine." Another had to climb as far as possible up a string hung inside the Great Dome using only an AA battery. Later they competed to see who's vehicle could gather the most ping pong balls in an allotted time.

Nearly four decades later, Tom Bentley and I found ourselves peering over Woodie Flowers' shoulders in his office at MIT as he scrolled through documents on his computer. He stopped and sat back with a smile, having found a black and white photograph of six young men posing with their winning vehicles. The gangly guy far left was Tom Bentley.

Flowers got up from the computer and selected a small construction of wire and cardboard from among hundreds of intriguing items that crowd the museum-like

shelves of his office. He brought it to the little round table where we had been sitting, a table strewn with objects to handle and contemplate: magnets; a silicon chunk; a small, mirrored guidance device from a sidewinder missile; origami figures; a nut, bolt and lock-washer puzzle; a soldered copper geodesic shape; and a dozen other playthings. Woodie interviews graduate student applicants at this table. If they don't pick up at least two of the objects on the table and fool with them, they fail the interview. Tom recognized the device Woodie was holding as part of the ramp vehicle Flowers had built for that project. Woodie never let his students have all the fun.

"I wanted to win that one at all costs," Tom said to Woodie. "My car crossed the finish line one second off three minutes. But I placed second. I remember going to the guy who won and shaking his hand, telling him he had a better design than me."

"The six of you were the first who ever took that course," Flowers said. "And we thank you for laying the foundation for 'gracious professionalism.' I coined that term after watching you guys compete like crazy, but treat each other nicely in the process."