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Far Left: Jessica Rosenkrantz and Jesse Louis-Rosenberg for Nervous System





**By Hartmut Esslinger**

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Hartmut Esslinger is the founder of frog, an entrepreneur and a teacher.

# HANDS & MINDS

**S**ince I can remember, I always wanted to create and make something. I could recognize any car, motorcycle or truck. (Yes, there weren't that many models on German roads in 1948.) I drew them well, and I also tried to make models from bark and wood. After I spent vacations with my relatives at the Rhine River and the North Sea, I added boats and ships.

My great luck was to grow up in a tiny village where my parents had rented an apartment in a farmhouse. Georg Gauss, the farmer, was also the village carpenter, which meant that there was a building next to the farmhouse with a wonderful workshop. It was my paradise, and I became Mr. Gauss' nightmare, until he gave up and assigned me a small table with some tools.

On the other side of the house was the school: one class for all eight grades. I went to the class at the age four because it was the coolest place. Mr. Hahn—a highly qualified teacher, who had escaped the Nazis into our pietistic enclave—in hindsight, was way overqualified; he later became the principal of a high school in Stuttgart. But then again, he was our lucky break: Of the students entering his class during my four "official" years, six of the nine students qualified for high school and two went on to college: Klaus Henning, a great painter and sculptor, and myself. Now, why did Klaus and I make it as creative children when all German educational models were—and still are—rational and rewarded logical traits rather than visceral ones? Well, Mr. Hahn offered a deal: When your grades were great, you had the freedom to do what you liked. So we learned like mad—and we got the rewards. Mine was to build a scaled-down fire truck and to decorate the classroom for Easter, Thanksgiving and Christmas. Klaus sculpted animals—and for Christmas, the Holy Family. All we had was wood, bark, paper, clay and colors. And thanks to Mr. Gauss' shop next door, we were progressing well. And because my parents had started a fashion business, I believed that my world was perfect—but life had some surprises for me.

When I was 10 years old, my parents bought a live-in business house in the next little town called Altensteig. I also passed the entry test for high school, which again was just across the street from our house. I also found two carpenter shops nearby. But they resented me being there, so I start-

ed my own shop under our roof. However, life became more complex: My teachers didn't care for creativity, and even though I was still an honor roll student, they scolded me for all the "senseless stuff" I did, such as filling notebooks with

“Ideas are the notes, but model making is the orchestra.”

—frog mantra

sketches of cars, bikes, ships and airplanes, for which I was frequently ejected from the classroom. When I then started to build model airplanes—around the corner there was a true fanatic who also gave credit—and began to play American music, my parents became concerned. For them, I was clearly on the path down into the gutter. It didn't help that as part of their business my parents met fashion designers, most of whom actually affirmed my parents' fears as they tried to make me into an "orderly German."

My mom began to burn my sketchbooks; my dad at least funneled my energy toward toy trains. I had a large table in my room, and aside from the trains and rails I built an entire landscape with a village using paper, plaster, matches and small things that I found in the junk buckets at a hardware store nearby. At 14 when I decided to start a rock 'n' roll band, I got an electric guitar, which my parents regretted greatly—due to lack of money I also had to build some instruments, like drums and a skiffle guitar, from wooden barrels and cigar boxes. This led me to another culture clash, both with my parents and my teachers. It also didn't help that I built the power amps from Fender kits I found in second-hand shops. But despite all the suppressive circumstances, including in the arts, I was happy outside of school.

In music, of all things, I had one great teacher: Arthur Kusterer. He was a retired composer and had been a great pianist, including playing concerts at the Berlin Philharmonic with Herbert von Karajan. He could explain—in musical terms—that creativity is rooted in believing and doing, without leaving another choice. He let me play the blues, but also requested that I learn at least the basics of Mozart and Beethoven. He didn't respect fixed times for periods and

always insisted that our weekly class would make us “Mensch,” better students and better people (although there is no direct translation from German). He also instilled self-confidence in us—the class was voluntary—by saying that if we do what we love and feel right about it, we will do well. Years later, after detours serving in the army and studying engineering, I told him that I finally had found my ideal profession. He didn’t know what design meant but liked what he saw in my eyes and said, “You know, I live in sounds, and now you live in shapes—be a hero ‘Siegfried,’ but be aware of the Hagens,” referring to the Nibelungen Saga where the hero gets murdered by being stabbed from behind. He saw creative life as a heroic journey—and when he died in 1967, the fulfillment of his life was greater than the sadness.

Now, as a design student, all that had been wrong in my life was right. It was a bit like being in the political opposition for 23 years and suddenly being asked to take the responsibility to govern. I realized that 90 percent of my education at school had been a waste—yes, I loved history—and that the good things were the relationships and the ability to learn. And it helped a little bit that I had learned to interact with noncreative people, which is one of the major challenges most designers don’t pass (e.g., my client doesn’t understand). When I came to the Design College in Schwaebisch Gmuend, my first trip was to the model shop; it became my living room. It also helped that Professor Karl Dittert *loved* models. “Renderings are nice, but models are magical,” he’d say. And I also learned that I had a *lot* to learn. Design is not like model airplanes; conceptual thinking and practical shaping really go tool-in-hand. Like Kusterer had said, “Notes written on paper only become music by an orchestra playing them.”

This became the mantra of frog: *Ideas are the notes, but model making is the orchestra.* So my first investment in my design garage was in cool machinery, replicating the shop at my college—and also taking hints from the master model makers I worked with on the outside, like Paul Hildinger of the former HfG Ulm. It may sound nostalgic to go back to Apple’s Snow White project with its hundreds of models (Jonathan Ive still does it with great success and fun and so does Apple Software). But it may help to look at frog’s first breakthrough success: the WEGA SYSTEM 3000 launched at IFA Berlin in 1970. Due to a lack of time, Wega took my last design model for the advertising campaign and brochure—there were even traces of my sanding still visible. This was my fifth model of this TV, made from 20-year-old special wood (I went to a woodshop for cutting, but the spherical shapes were all made by hand), plaster (for the buttons) and lots of Bondo to smooth the



transitions. From the first idea to IFA was eight months—and the success changed everything: Wega grew by 500 percent until its acquisition by Sony in 1974, and I had established myself by “form follows emotion.”

Then I hired Andreas Haug and Georg Spreng as my designer peers—they would become partners from 1977 to 1982—and Walter Funk as one of the best master model makers I ever had the privilege to work with. That was a good ratio: We designers designed and made quick models, and Walter created the magical touch. Together we all designed by shaping in the shop for Wega, Vuitton, Sony and Apple, just to name a few. And because I always believed in great tools, in 1984 I pushed

frog into CAD and paid \$1.4 million for four stations (VAX and Intergraph). But I saw CAD as a creative tool, not as a seducer. In the meantime—with prices coming down and processing power going up—young designers have turned into digital software junkies and really believe what they see on their screens. But it’s only the notes and not the music!

How did this happen? My conclusion is that it wasn’t a change in people or clients, but in process! The problem started when we designers were allowed to claim budgets and then hand down only small amounts to model making. This resulted in seeing model making as an up cost that should be avoided. And the same goes to digital, where there isn’t enough playing and testing. I just want to mention frog’s Colin Cole, who established his great digital models for our first SAP project. For this reason, I re-established a small model shop during my six years teaching at the University of Applied Art, Vienna, and for the same reason, my new studio in Shanghai will have a perfectly equipped model shop—and I am extremely satisfied that my Chinese partners understand the true value of balanced convergence between digital and analog tools and processes.

After relative early successes, the curse of digital tools is complacency, which leads to mediocrity. Because excessive TV kills creativity, creative excellence is vanishing. Just like the new material polystyrene slates (which could be easily glued with vinegar acid but made shaping radii really hard work) were the real cause for HfG Ulm’s boxy design language in the 1950s, our modern-day digital design software is the cause for zillions of repetitive and bland products. Charlie Chaplin’s *Modern Times* is a *déjà vu*. My conclusion and recommendation: **The way of design is only achievable with creative model making and experimental prototyping by the designer(s).** Tools—both real and virtual—connect our mind with the real world. However, tools also define shape in such ways that their physical and usage limitations must enhance our deep involvement, forcing us to hone our required skills into simple and true mastership. ■



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