Reflections and Memoirs:

Engineering adventures and lessons learned along the way

By Lynn Conway [V 9-21-12]

We’re living through ‘interesting times’, times when an assemblage of innovations by electrical engineers and computer scientists is suddenly and forever changing our world – right in front of our eyes.

Much of that change is empowered by remarkable computing machinery ‘printed’ on small silicon chips embedded in virtually every ‘smart’ product we use to advantage in our everyday lives.

But what are these ‘silicon chips’ anyways? How can a bunch of tiny ‘wires’ printed on a little piece of silicon become a powerful ‘machine’? Who designs these things, and how did they learn to do it? And how do the folks that program them, that get them to do things, learn to do that?

Without answers to such questions, without stories about how such things came about, the younger generation can’t visualize how their world was shaped by those who went before. Nor can they visualize methods used to do the shaping, methods that might be well-applied in later times.

As years passed by, I often wished folks could visualize what it was like to be an engineer, a pathfinder, out on the frontier of digital computing and silicon chips. There are so many untold stories of incredibly creative people, stories full of adventure and excitement, of highs and lows, of failures and triumphs – stories that need to be told to capture it all.

I even imagined writing reflections on my own career someday, illuminating interesting events and lessons learned over the years, so as to add to that record in some small way. However, the time never seemed right. Too many questions remained open about various events, too many mysteries were unsolved, too many threads needed disentangling – before I could confidently unfold my memoirs.

In my case there were also practical issues: My work in VLSI chip design methodology for which I’m perhaps best known, was built upon foundations laid in my earlier work at IBM. But how could work in one arcane area (the design of VLSI chip design methods) be revealed as having foundations in an earlier arcane area (superscalar computer architecture), if few people even among modern-day experts grasped the history of either technology?

Furthermore, my research at IBM, and later at Xerox PARC, was framed in important ways by emergent insights and methods from sociology and anthropology. Few engineering researchers even today grasp the tangible realities revealed by such insights – much less deliberatively exploit them at a meta-level in their creative work. How could I ever explain all that, either to engineers or to anthropologists?

Further complicating things was the reality of my gender transition early in my career, followed by my life in ‘stealth-mode’ in a new identity for over three decades – which had very complex effects on my creativity, career and credibility over time. How could I unfold all that, without it becoming “The Story”?

Suddenly a breakthrough, as questions are answered, mysteries solved:2010 . . .

The power of stories: Remembering Steinmetz and Armstrong . . . early heroes . . . then role models . . . how we learn more and more from their stories over time . . . how stories communicate deep-messages that we tune-into, remember and act on . . . how the overall arc of each story provides the starting points for interpreting and understanding its details over time. . .and how a set of stories enable the reader to ‘go-meta’, and tune into the larger picture.

Thus it’s time to begin telling the stories, as best I can . . .The initial memoirs: beginning with ACS reminiscences, followed by VLSI reminiscences . . .

ACS Reminiscences

VLSI Reminiscences

Questions and Answers:

A Decade of Trans-Advocacy:

Adventures along the way: