



TECHNOLOGY: IT'S A WOMAN THING

AUTHOR: NANCY STEFFEN-FLUHR is associate professor in the Department of Humanities and Social Sciences and codirector of the Murray Center for Women in Technology.



ALTHOUGH WOMEN ARE THE MAJORITY OF THE U.S. POPULATION and more than half of the U.S. workforce, only 8.5 percent of the country's engineers are female, a figure that has not changed in more than twenty years. Even more surprising, during a period of explosive growth in information technology, the percentage of women earning bachelor's degrees in computer science has actually declined – from 37 percent in 1984 to barely 20 percent today. This is not only bad news for women; it is bad news for technology.

Trying to solve important problems using half of the collective human brain is not smart. We know biodiversity makes for more resilient ecosystems; the same principle applies to human systems. This

is more than rhetoric. The absence of diversity costs lives. The first automotive airbag systems killed a number of women and children simply because the male engineering design team used the male body as the unproblematic human norm.

The lack of diversity in technology is dangerous in another way. IBM Senior Vice President Nicholas Donofrio has warned that the absence of women and minorities in the technological workforce is a demographic time bomb capable of destroying U.S. economic growth. To keep pace, the U.S. needs to produce over 1.3 million new scientists, engineers and computer experts by 2006. However, the supply of existing technology workers is already far short of the demand, and the demogra-

phic pool from which technology traditionally draws its experts, European-American males, is decreasing. At the same time, the number of women and minorities in the workforce is increasing dramatically.

If women and minorities continue to balk at careers in science and engineering, the U.S. technological workforce will shrink by at least 9 percent over the next fifty years.

High school girls today are taking upper level math and science courses in about the same numbers as boys and doing just as well in them. When the time comes to select a college program, however, these able young women rarely choose to major in engineering or computer science.

Who can blame them? They know what we know: the geek gene is on the Y chromosome.

Although it is essentialist nonsense, the belief that technology is inherently a guy thing is hard-wired into U.S. cultural infrastructure. For a woman to demonstrate technological competence is to risk being seen as unfeminine. As one female computer science major put it, "I found it difficult trying to be a girl and also be technical at the same time" (Jane Margolis and Allan Fisher, *Unlocking the Clubhouse: Women in Computing*, MIT Press, 2002).

The techno-fantasies fueling our information economy are also stories about maleness and femaleness. Technology does not float above the social landscape. It is an intimate part of that landscape.

For example, consider the Father's Day catalog I received last spring. The cover shows a man and his two sons laughing happily as he allows them to pretend-drive his sports car. The first five gifts listed inside are a digital tape measure, cordless air pump, professional leather tool carrier, Swiss army auto tool and star navigator. In direct contrast, the Mother's Day catalog featured such gifts as a lavender heart wreath, tranquility fountain, heart toggle bracelet and fuzzy pink slippers.

The story the objects and images in the Father's Day catalog tell is clear. Male identity is inseparable from the ability to use tools to make things happen. So, too, is male happiness. The cover photo illustrates the observation of sociologist Judy Wajcman that men bond with each other around machines in ways that position women as outsiders. Although there are many pictures in the catalog of dad interacting with his sons, there are no images of dad and his daughters. This lapse is not accidental. Studies show U.S. fathers play with their sons twice as much

as their daughters and much of that play centers around technological artifacts, such as computers.

The male bonding pictured in the catalog is built seamlessly into academic and corporate high-tech cultures. Young women know this, even when we try to tell them differently. For men, technology connects them magically to their dads, childhood pleasure and play. Lacking that experiential imagery, technology doesn't make much relational sense to many women. It carries no residue of family romance and has no human face.

Our society is so saturated with the belief technology is a "he thing" that it is amazing how many women have gone into technological careers over the years. That there are any women engineers or computer scientists is testimony to the sheer strength of female technological curiosity and drive against the strongest currents of cultural life.

Any organization aiming to alter the gender ratio in technology needs to keep this in mind. We need to make conscious efforts to tell different stories — to challenge, even mock, cultural messages that naturalize technological aptitude as a male

High school girls today are taking upper level math and science courses in about the same numbers as boys and doing just as well in them. When the time comes to select a college program, however, these able young women rarely choose to major in engineering or computer science.

birthright. Girls are interested in technology until we talk them out of it. Women are adept technological problem solvers, until we caricature their competence away. In their fuzzy pink slippers and heart-shaped jewelry, women across the country are busy installing refrigerator ice-makers, jury-rigging satellite dishes and partitioning their hard drives. Technology is woman's work, and indeed, always has been, secretly. We just need to get the word out. ■

To help NJIT's Murray Center promote opportunities for women in technology, please email the center's codirectors, Nancy Steffen-Fluhr (steffen@njit.edu) or Anne Wiley (wiley@njit.edu).