

## A Psychologist in Cyberspace

Until the advent of modern technology, our closest bonds were with fellow humans. These days, millions of people develop close relationships with robot dogs, Tamagotchi toys, and virtual characters they encounter or create on the Internet. Sherry Turkle, a psychologist who directs the Initiative on Technology and Self at MIT, has spent decades studying the intimate bonds we form with our artifacts and how they shape who we are. She shared her insights into "cyber-analysis" with senior associate editor Josie Glausiusz.

### What triggered your interest in the ways humans bond with machines?

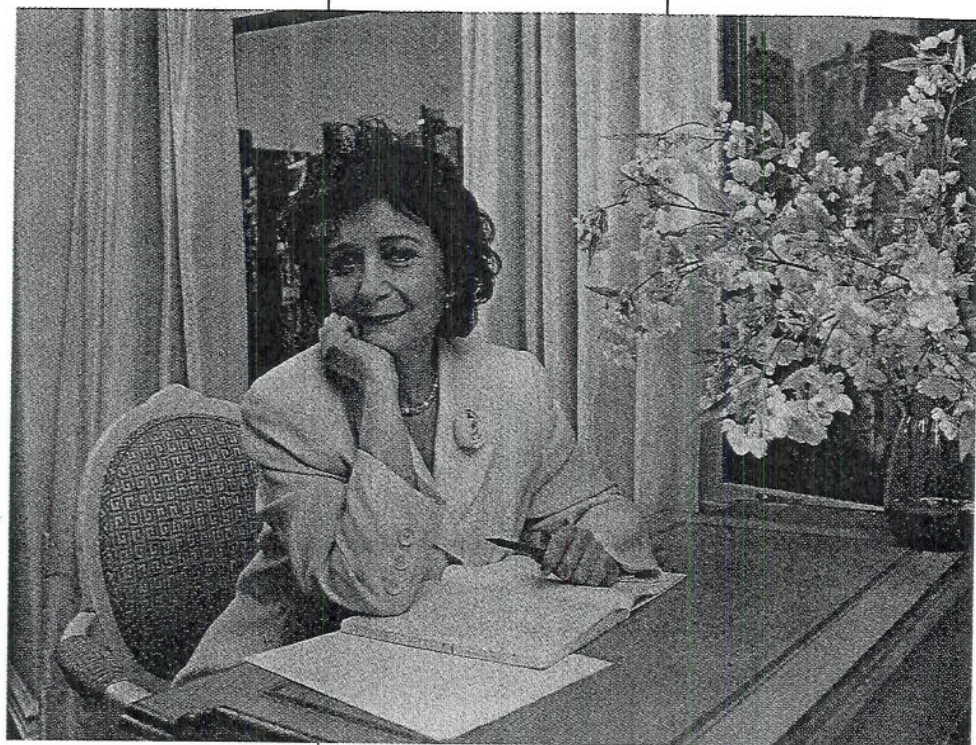
I came to MIT in 1976 to teach the sociology of science and saw the intensity and passion of my students' relationships with computers. They used computer metaphors to think about their minds, like "debugging a problem." I realized that the computer is a very evocative object, and the idea of studying the technological world opened up for me.

### Why are people so eager to imbue inanimate objects, such as robots and computers, with human emotions?

From the earliest stages of life, we have a profound need to connect. Infants experience themselves as if the objects in the world are part of them and they are part of the objects in the world. These objects, such as Linus's baby blanket or a teddy bear, are perceived as being imbued with the self. A computer, too, can evoke in its users a sense of connection and personality.

### Why would anyone experience deep feelings for a robot?

Toys like the Tamagotchi—those little egglike digital toys that need you to feed them and clean up after them—ask for nurturance. By doing so, they push a profound button in us. As a species, we're programmed to attach to the things that we take care of and that blossom under our care.



### Is it possible to reverse this psychology? For instance, could robots someday nurture us?

A lot of people are excited about the use of robots for the elderly. They see this as a humanitarian application of robotics, to help people who need companionship and to give them their medicine, take their blood pressure, and so on. To me, it's important to study not just what kind of relationship an elderly person has with the robot but what that relationship is doing to us as people. It used to be very meaningful for children to hang

going to have robots as our soldiers? It's a different world if war is not about killing people but rather machines in combat. At a certain point, one could imagine that machines would be fighting other machines. The moral and ethical dimensions of war would change.

### Has society been changed by our interactions with the Internet?

Definitely. The ability to join online communities has profoundly changed what is available to the human psyche. One of my students formed a friendship on the Internet with a per-

son who turned out to be profoundly physically impaired. Certain aspects of that person's self—the vivaciousness, the sense of exploration—would not have had an opportunity to express themselves without the sociability the Internet provides.

### Do you worry about the potential for dishonesty on the Internet?

It's a place where people experiment with identity. As long as we know that it's a space for that kind of play—that a "fabulous hot babe" might be an 80-year-old guy in a nursing home in Miami—it's good. Now, you don't want that on the site where your American Express card is processed. As long as we keep these spaces separate, I think the Internet as a place for identity play is good.

### Can people become too attached to their computers?

There are two issues: The computer, and what's on the computer. If you told me that you were writing a novel, and that you were spending nine hours a day working on it on the computer, I'd say, "I'm thrilled for you." If you told me you're spending that time engaged in violent, aggressive games, I'd say, "Why are you doing that?" The fact that you're doing it on a computer is the last thing on my mind.

## 'I've experimented with being a man and saw how people responded to me differently'

out with their grandmothers. The danger is that we may legitimize taking some of those interactions out of the human experience.

### Where else do you imagine that robots might replace people?

We already seem to have decided that we want robots to be our cash machines. Are we going to have robots as nurses and nannies? Are we

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