

what women want

Professor Justine Cassell on underdetermined technology, social norms, and the gender politics of mobility.

By Ruth Shalit

There's a lot of gender talk in IT these days. Tech companies are paying consultants millions to help them figure out how to entice female users. Digital marketing firms have sprung up like kudzu, all claiming access to the most elusive precincts of the female psyche. Meanwhile, a hot new virtual-hangout called There (<http://www.there.com>) promotes itself as "consciously designed for women." In There, you'll find splashy fashion shows and art exhibits, but no shooting, and no guns except for paint guns.

So, what's wrong with this picture? Professor Justine Cassell of MIT's Media Laboratory contends that all this gender-mongering often takes a narrow, unidimensional view of what it means to be a particular gender. Under the guise of gender enlightenment, she argues, many new, female-targeted computer games and mobile virtual worlds are actually leading to increased gender stereotypicality. Under the guise of helping women and girls, companies are "ghettoizing" them - treating them as inferior beings who require special help in relation to technology.

Dr. Cassell is an associate professor at MIT's Media Lab, where she directs the Gesture and Narrative Language Research Group. She is also a board member at the HP-sponsored Institute for Women in Technology, currently housed in HP Labs in Palo Alto.

After ten years studying verbal and non-verbal aspects of human communication through microanalysis of human data, Cassell began to bring her knowledge of human conversation to the design of computational systems, designing the first autonomous animated agent with speech, gesture, intonation and facial expression all the way back in 1994. Today, Cassell and her group at MIT study natural forms of communication and linguistic expression, and build the technological tools that enable and enhance these activities - in particular, face-to-face conversation and storytelling. Other projects include building technological toys for both boys and girls that encourage them to express aspects of themselves that transcend conventional gender categories.

Along with Henry Jenkins, Justine Cassell recently co-edited *From Barbie to Mortal Kombat: Gender and Computer Games* (MIT Press, 1998). She has also authored a volume on autonomous communicating virtual humans, entitled *Embodied Conversational Agents* (MIT Press, 2000). She has published extensively in journals, ranging from *Computer Graphics* to *Poetics Today*.

She holds a master's degree in Literature from the Université de Besançon (France), a master's degree in Linguistics from the University of Edinburgh (Scotland), and a double Ph.D. from the University of Chicago, in Psychology and in Linguistics.

A passionate and idealistic scholar, and unabashed technophile, Dr. Cassell recently spoke to M-Pulse about the "genderization" of IT, the male-female technology differential, and why it no longer possible to build womanless technology.

Some of your most fascinating and suggestive research has looked at the difference in how boys and girls view their involvement with computers - and how these differences turn out to be exactly mirrored by how software designers design for each gender. Can you talk a little bit about how young boys and girls tend to conceptualize computers differently?

This is part of the background that led to the whole girls' games movement - the statistics about differential use of the computer.

Studies have shown that, from the age of two on, boys spend more time than girls on the computer - and that the magnitude of the gap increases with age. What we see is that, as early as kindergarten, both girls and boys consider the computer to be a boy's toy.

The really interesting issue is: what are both boys and girls using the computer for? In general, what we see is that boys are more likely to play games, to program, and to see the computer as a playful recreational toy. Whereas girls tend to view the computer as a tool, as a means to accomplish a task, such as word processing or other clerical duties.

In an informal study of an inner city after school computer program, I asked boys and girls why they were there. The boys found the question ridiculous. One said: "I'm here because it's fun. I mean, there are all these computers for me to play with." The girls tended to be far more serious in their answers. One said, "I think I can get a better job if I know how to use a computer." And it's not just young girls. Adult women are also more likely than men to report that they see the computer as a practical tool, rather than a stimulating artifact in its own right.

So how is this difference reflected in how designers design for boys and girls?

It's interesting. Inevitably, when educators with software design experience are asked to design software specifically for boys or for girls, they design earnest learning tools for the girls - and fun games for the guys.

By way of comparison, you could consider the social history of cooking. Back in 1946, before James Beard began to host a television cooking show, home cooking in America was strictly a woman's domain, and it was thought to be unmanly to cook at home.

Then, along came James Beard, who explicitly addressed the notion that men could cook. Also, he told them it was fun. What was the result? Once men could cook and it was fun, domestic devices for the kitchen were no longer called "appliances." They were "gadgets." Think of the electric rotisserie, the bread machine, the coffee maker. When men took over kitchen technology, cooking began to resemble a game.

OK, so boys see computers as a realm of spontaneity and playful delight; whereas girls use them to pursue more worthy endeavors. Why, exactly, is that a problem? Do we really want girls to spend all their time in front of a screen playing computer games?

It's a problem for several reasons. One is that in today's job market, computer literacy is important. In fact, the National Science Foundation has predicted that, by 2010, one in four jobs will require computational literacy. Computer games bootstrap computer literacy. What that means is that if girls are playing fewer computer games, they may be getting less technical fluency than boys; boys are then getting higher paid jobs that require that fluency, and girls aren't getting access to those jobs.

Another reason to worry about these findings comes from girls' own perceptions of the correlation between gender and computer use. Many girls who are good at computers may believe that they're not good at being girls.

A few years ago, I placed an ad looking for research assistants to work on the topic of gender and computer games. I was struck by how many female candidates for the position explained, in so many words, that they were technically fluent, but that was because they weren't real girls. And that, to me, is the saddest thing of

all. That one should find one's gender to be incompatible with one's abilities, and that one should have to deny one's gender in order to accept one's abilities.

On the surface, it would seem that there are lots of technology companies who agree with you. It seems like every day I read another press release about some new, pro-social computer game that's going to equalize the playing field for girls. Why are you somewhat skeptical about many of these well-intentioned efforts?

While it's wonderful that these companies are taking gender into account in the design of computer games, I've argued that the ultimate effect is to ghettoize women and women's needs. What these games are saying is: Women are different. They aren't normal users of online communities. They need special online communities. And many of us interpret "special" as "needing special help."

I think we just have to be very careful when we talk about designing technologies for so-called special populations.

But what's so bad about constructing a girl-only space? And what's so great about "boy games," anyway? They can promote anti-social traits, such as violence and competition. Why not develop games that foster more humane and progressive values?

Because even if the stereotype is benign - even if you're associating the female gender with all sorts of wonderful, virtuous, noble qualities - you're still setting up girls as a "problem space," consigned to a realm outside the normal practice of technology. When only one population is special, one risks ghettoizing it. I remember asking a young boy once what he thought of a new videogame. He said, "It's so stupid, not even a girl would like it." Until we can get away from a kind of deficit model of girls and technology, we may need to watch our step in designing explicitly with one gender in mind.

The other problem, of course, is that these stereotyped gender categories don't always hold true. Yes, there are women who prefer games that are diffuse and unstructured and non-goal oriented. But there are other women who absolutely love shoot-'em-up games. In my book, there are all these great quotes from women gamers, saying that maybe if women had a little more fun in online worlds, or played games that involved killing folks, they would do better at their jobs. They reject what they see as a very traditional and old-fashioned view of femininity from the girls' games movement - all the while criticizing the characters that they find in boys games as being the product of male erotic fantasies. As one gamer pointed out in PCWorld, if you were to genetically engineer a Lara Croft-shaped woman, she would die within 15 seconds, as there's no way her abdomen could house all her vital organs!

How would you assess the quality of the consumer research that's being commissioned in the realm of gender and technology? It seems like companies are commissioning all sorts of focus groups, tracking studies, even "ethnographic research" purporting to study girls' play motivations and attitudes towards technology. In your writing, you point out that these efforts to probe the psyche of the female gamer often tend to reinforce assumptions about girls' stereotypical interests.

You can find whatever you want to find in patterns of behavior. I was once on a panel with the CEO of a company that was building games for girls. They'd done all kinds of focus groups with girls about technology, what did the girls want from technology, and so on. What they wanted, apparently, was technologically-enhanced nail polish. Which happened to be her company's new product.

At the same panel I happened to be talking about a project that I was directing for 3,062 children in 139 different countries that invited children to think through how to use technology to make the world a better place for children. Interestingly, although we hadn't planned it this way, roughly sixty percent of the participants were

girls.

I spent a lot of time with these children listening to them talk about what they wanted to use technology for. Amazingly, not a single one said nail polish. What I was finding was that they wanted to invent technology that eradicated racism, eradicated poverty, ended child labor.

There's a methodological point here. Our methodology was to fly around the world and hand out computers and Internet connections and hook up kids. We built an online website that allowed the kids to communicate with one another using five different languages.

The CEO of the gaming company also had a particular methodology. Her company hired women who looked like they could still be teenagers, and sent them around America to throw slumber parties and pop popcorn and talk to girls about what they'd like from technology. So, without being too flip about it - methods are important. And the context is important.

You've talked eloquently about how women are harmed, and their individuality denied, by crude assumptions about "what women want" in the realm of gaming and information technology. What about in the mobile space? Is gender ever taken into account in the design of mobile interfaces? It's not something I recall reading a lot about - aside from some gender-specific mobile data services, and this whole phenomenon of marketing cell phones as jewelry.

I've sat in on design meetings for PDAs for women since 1995 -- since before people were carrying PDAs. And the devices that were being discussed in those days were devices that would give you horoscopes, and shopping lists, and so on. The theory was that mobile devices would attract women [by supplying] the same popular culture that is used to attract women to magazines. For instance, dating tips.

I remember that, in one of the PDA meetings I sat in on, someone presented a prototype of a PDA that was full of horoscope information. There were all sorts of checklists and charts to tell you if you would be a good match with another person. That never made it to market.

In fact, none of these stereotypically female PDAs were ever really successful at all. [Designers of these devices] might have thought that this is what women were looking for. Whereas in reality, women have tended to see these mobile devices as gender-neutral. They use them to check stock quotes or to sync their schedules.

That's not to say that [mobile] phones can't be expressive of aspects of self-identity. I know a lot of different things have been tried out on the teenage-girl market in Japan. They're making mobile phones smaller and smaller - not just to make them more gadgety, but to make them more attractive to women. Young women are putting diamonds on their phones, wearing them around their necks as jewelry, and so on. In Japan, they're actually marketed as fashion statements.

I've noticed that, in much of your writing regarding the role of gender in human-computer interfaces, you strike a somewhat rueful note. As you point out, the endeavor of trying to figure out solutions to designing information technologies for girls and women is already hard enough. Then, you come along and make it look even harder by pointing out some of the unintended consequences of some of our well-meaning solutions. Can I try to end on a hopeful plane by asking you to talk a little bit about your own design philosophy, which you call "underdetermined design"?

In interface design, as elsewhere, when we've tried to do something to equalize opportunities for women, there have traditionally been two approaches: to value traditional femininity, or to deny differences between men and women. And we're seeing exactly the same thing in technology. Do we encourage girls to beat boys at their own

game, or do we construct a girl-only space?

In the work that we've done at the Gesture and Narrative Language Group at MIT Media Lab, we've tried to find a third position. We didn't see that it was our place to design a game for girls or a game for boys. We didn't see that it was our place to claim to know what "girl" was or what "boy" was because there's too much diversity. So, we decided to design computer games that in their very use would allow children to decide who they were in the richest way that we could. I call this design philosophy "underdetermined design." That is, design that allows users to create or perform themselves using technology.

Can you give an example?

One example I often cite is Rosebud - a digitally-augmented keepsake object linking children's stories to their stuffed animals.

In the Rosebud system, the computer recognizes children's stuffed animals (via an infrared transmitter in the toy, and receiver in the computer) and asks the child to talk about the stuffed animal. Later, [the computer] calls the stuffed animal by name and recalls what it has heard. The child is asked to tell a story about the stuffed animal - any story at all. The computer is an encouraging listener, as well as a teacher, pushing the child to write, write more, edit, and improve. The important thing is that the child is in charge of the interaction, deciding which stuffed animals to play with, what story to tell.

There's no explicit mention of gender. But what we found in our testing with children was that both boys and girls are equally likely to play with these toys.

What's interesting is that the computer doesn't correct or edit in a particular direction. The computer listens, and stores. And that very act of having your story heard is extremely important for all children, but perhaps, particularly for girls, who can often feel not heard.

In the past, you've written that women's interests will be best served when technology is designed not around men's needs, nor around special "women's needs," but around human needs. Yet, in a world where even simple devices seem designed in such a way as to cause maximum confusion and frustration, that hopeful future sometimes seems a long way off. Assuming the world isn't about to transform itself overnight into a paradise of underdetermined design, what can we do in the meantime to ensure basic fairness?

What can we do? We can ensure that there are an awful lot of applications, games, and web sites, because that ensures innovation. The proliferation of technologies ensures a proliferation of designers to design those technologies, both men and women, to be attractive to girls and women of all sorts.

What we want is to understand that girls and women are as diverse as men. And so if we concentrate on ensuring that there is a diversity of designers, and a diversity of products, then we are going to do good.

Finally, we should keep in mind that to be designed for can be dangerous. To be stuck in a room doing focus groups is okay. But implementing things yourself is power.

