Unit 10 CYNTHIA BREAZEAL

The Rise of Personal Robots

Part 1

Ever since I was a little girl seeing ***Star Wars***[1] for the first time, I've been fascinated by this idea of personal robots. And as a little girl, I loved the idea of a robot that interacted with us much more like a helpful, **trusted sidekick**[2]—something that would delight us, enrich our lives, and help us save **a galaxy or two**[3]. I knew robots like that didn't really exist, but I knew I wanted to build them. . . .

So over the past several years I've been continuing to explore this interpersonal dimension of robots, now at the Media Lab with my own team of incredibly talented students. And one of my favorite robots is Leonardo. We developed Leonardo in collaboration with Stan Winston Studio. And so I want to show you a special moment for me of Leo. This is Matt Berlin interacting with Leo, introducing Leo to a new object. And because it's new, Leo **doesn't really know what to make of it**[4]. But sort of like us, he can actually learn about it from watching Matt's reaction.

[Video] Matt Berlin: Hello, Leo. Leo, this is **Cookie Monster**[5]. Can you find Cookie Monster? Leo, Cookie Monster is very bad. He's very bad, Leo. Cookie Monster is very, very bad. He's a scary monster. He wants to get your cookies. . . .

So what I've learned through building these systems is that robots are actually a really intriguing social technology, where it's actually their ability to **push our social buttons**[6] and to interact with us like a partner that is a **core part**[7] of their functionality. And with that shift in thinking, we can now start to imagine new questions, new possibilities for robots that we might not have thought about otherwise. But what do I mean when I say "push our social buttons"? Well, one of the things that we've learned is that if we design these robots to communicate with us using the same body language, the same sort of **nonverbal cues**[8] that people use—like Nexi, our humanoid robot, is doing here—what we find is that people respond to robots a lot like they respond to people. People use these cues to determine things like how persuasive someone is, how likable, how engaging, how trustworthy. It turns out it's the same for robots. . . .

Part 2

Now let's try to **put this into a little bit of context**[9]. Today we know that families are living further and further apart, and that definitely takes a toll on family relationships and family bonds over distance. For me, I have three young boys, and I want them to have a really good relationship with their

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[1] The 1977 movie *Star Wars*, a space drama, is now considered a science-fiction classic.

[2] In a story, the "trusted sidekick" is the good friend of the story's hero, who often supports the hero in achieving the story's goal.

[3] Breazeal is referencing back to *Star Wars* here, making a joke about the possibilities of a robot's role in our lives.

[4] "to know what to make of" something means to see clearly its meaning and purpose.

[5] "Cookie Monster" is a character on *Sesame Street*, a popular TV show for kids in the United States.

[6] When you "push someone's buttons," you do something that creates an emotional response. Often the idiom is used to describe a situation where a negative emotional response is received. However, Breazeal is not using it to talk about a negative response.

[7] A "core part" is a piece that is essential to make something work.

[8] A synonym for "nonverbal cues" is "body language"—examples of which include hand gestures, eye contact, smiling, etc.

[9] To "put something into context" means to explain it in terms that are relatable. One way to do this is to give a specific example as Breazeal does.

grandparents. But my parents live thousands of miles away, so they just don't get to see each other that often. We try **Skype**[10], we try phone calls, but my boys are little—they don't really want to talk; they want to play. So I love the idea of thinking about robots as a new kind of **distance-play technology**[11]. I imagine a time not too far from now—my mom can go to her computer, open up a browser, and **jack into**[12] a little robot. And as Grandma-bot, she can now play, really play, with my sons, with her grandsons, in the real world with his real toys. I could imagine grandmothers being able to do **social-plays**[13] with their granddaughters, with their friends, and to be able to share all kinds of other activities around the house, like sharing a bedtime story. And through this technology, being able to be an active participant in their grandchildren's lives in a way that's not possible today. . . .

Robots **touch something deeply human**[14] within us. And so whether they're helping us to become creative and innovative, or whether they're helping us to feel more deeply connected despite distance, or whether they are our trusted sidekick who's helping us attain our personal goals in becoming our highest and best selves, for me, robots are all about people.

Thank you.

This is an edited version of Breazeal's 2010 TED Talk. To watch the full talk, visit TED.com.

[10] Skype is a service online that allows people to make voice and video calls to others, usually for free.

[11] The term "distance-play technology" was likely created by Breazeal to describe one aspect of what robots are capable of.

[12] A "jack" is a socket for a plug. To "jack into" something means to put a plug into a socket.

[13] "social-play" refers to children making up pretend scenarios to role-play, such as having a tea party, or playing house, or cooking a meal, etc.

[14] To "touch something deeply" means to make an emotional impact.