

Alexa as your new bestie: Can an AI robot or voice assistant help you feel less lonely?

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You: "Alexa, I'm lonely."

Amazon Alexa: "Sorry to hear that. Talking to a friend, listening to music or taking a walk might help. I hope you feel better soon."

Alexa's artificial intelligence-infused heart may be in the right place, but there's only so far it or any AI can go to comfort someone who is alone.

All the same, Alexa's response raises questions about just what kind of role an AI can play to "cure" loneliness, especially among the elderly. Loneliness has been identified as a leading cause of depression among people who are over 65.

The promise of AI

We've heard for years about the potential of companion robots to keep older people, but really anybody, company. But AI need not take the form of a physical [robot](#). As we communicate more often with Alexa and the Google Assistant, could anyone really blame us for thinking of them, too, as "friends?"

We're still worlds away, though, from the romanticized view of AI that was portrayed in the 2013 sci-fi film "Her." And, frankly, the Hollywood hype around social robots hasn't been all that great, with them mostly bent on causing our demise.

And their own reality has been rather bleak, mostly focused on their own demise.

Earlier this year, for example, the company behind the Jibo "social" robot for the home that had not all that long ago graced the cover of Time magazine as one of the best inventions of 2017, shut down its servers. Other once-promising robotics companies including Mayfield Robotics (known for the Kuri robot) and Anki (Cozmo) recently met a similar fate.

While robots still aren't prancing around most living rooms, beyond the occasional Roomba, we are increasingly forming some kind of bond with the AI's in our smart speakers, phones and other devices—yes, Alexa, Google Assistant and Siri.

"Alexa's personality has helped to create a place for her in the home of millions of customers—and we continue to find ways to evolve her personality to be more helpful and useful for them," says Toni Reid, Amazon's vice president for Alexa. "This includes responding to sensitive customer questions or interactions such as 'Alexa, I'm lonely,' 'Alexa, I'm sad,' 'Alexa, I'm depressed,' and so on. As we prepare to respond to these interactions, we are very aware that these are high-stakes answers and have worked closely with experts, such as crisis hotlines, to ensure Alexa's response is helpful."

But can a machine fill in for a human?

While Reid says "AI can help make life easier—and at times, more delightful—I don't see AI as a replacement to [human relationships](#)."

Indeed, it seems like a pipe dream to suggest that a machine-based solution, no matter what [human traits](#) it picks up or how chatty it gets, can properly fill the void when relationships end or loved ones pass on.

"We are not going to make robots that take care of people so people can be isolated in their own little cubes. That will lead to more problems.

Instead, what we do is to use machines to bring people together," says Maja Mataric, a computer science professor at the University of Southern California.

Mataric is adamant about not conflating "social" robots, which she describes as "focused on entertaining rather than having a more measurable purpose," with socially assistive companion robots whose role is to assist and have a measurable outcome: "Does this child with autism make more eye contact after they interact with a robot? Does this elderly person walk more steps after interacting with a robot?"

For example, she recently ran a study where Kiwi's, robots that resemble foot-tall owls, were introduced to older people. If these people were sitting too long, the robots reminded them to stand up. If they did, the robot rewarded them with a joke or dance. Mataric says the participants in the study were more physically active and happy to have the robots around. But when they had to take the robots away, these same people resorted to their old ways.

"We know these machines can change behavior in a positive way," Mataric says.

A robot as a pet

Though most people are obviously aware that robots are not living breathing things, AI, for some anyway, may provide the kind of companionship you get from a dog or cat. Think high-tech variation of a service animal, absent the responsibilities that come with feeding and caring for a pet.

As far back as the 1990s, a Japanese industrial company National Institute of Advanced Industrial Science and Technology (AIST) developed Paro, a robotic baby seal that has been administered to

patients in hospitals and eldercare facilities in Japan and Europe. Billed as a "therapeutic robot," Paro was taught to respond to the way a human stroked it or to a new name.

Colin Angle the CEO of iRobot, best known for its Roomba robot vacuums, believes robot pets could eventually become a multibillion-dollar industry, "for real." Through facial and image recognition technologies, robots can get to "know" their owner and follow them around, Angle says. But he believes many of the robotic pets that we've seen so far while pretty good robots are not necessarily good pets. It's hard to make a human connection, he says, when they have hard plastic or rubber skin, or behave in a jerky or non-fluid way.

Helping a lonely kid who can't get to class

Norwegian startup No Isolation has made it its mission to solve the loneliness problem through what it refers to as "soft technology."

The company has built a "telepresence" robot in Europe called AV1, which sits in classrooms to fill in for students whose chronic or long-term illnesses prevent them from being there in person. AV1 has a camera, microphone and speaker; the kid at home can control it with a tablet while keeping tabs on schoolwork and remaining in touch with friends.

In Sweden, Accenture is addressing loneliness in an older group. The company is teaming up on an early pilot called Memory Lane with one of that country's largest energy suppliers Stockholm Exergi. Elders are invited to tell their life story to the Google Assistant on a smart speaker, partly to capture the stories for future generations but also to provide companionship.

"In the two years we spent developing the software and the concept of

the platform, we observed (that) the urge to share stories by lonely participants was incredibly strong," says Adam Kerj, chief creative officer for Accenture Interactive in the Nordic region. "To this end, we not only wanted to develop something that could hold a human-like conversation with them, but also capture those memories so they didn't end up untold."

Kerj says the next phase is to figure out how to make the experience more social, in part by letting grandkids or other family members contribute.

Still, there are challenges to solving the loneliness problems through AI

Several ethical and societal issues must be dealt with before robots and other AI's can help solve loneliness.

First off is the cost. Robots are expensive, funding can be hard to come by.

Angle of iRobot poses another question: "How do you have confidence in the company that programs (the robots) that they exist for good? I think that's a solvable issue, but it's not a trivial issue."

Along those lines, how well are the AI's trained? "Even a human doesn't know the best way to deal with a depressed person," says Carnegie Mellon professor Daniel Siewiorek. It's notable considering who's doing the training, or programming.

And that leads to further ethical questions: "Should we make it transparent to people that companion robots are preprogrammed to act this way and do not genuinely have emotions?" Researcher Astrid Weiss is studying human-robot interactions in Austria and notes the boundaries

between human and robot will continue to blur over time.

"We don't know what the concept of friendship will look like with a robot or how the concept of friendship with humans change?" Weiss says.

Having an AI chatbot of your very own

An early clue may come from the text-based AI chatbot Replika, which has been downloaded over a couple of years by more than 6 million people, most of them between 16 and 25.

Replika CEO Eugenia Kuyda says the personalized bot gives someone to talk to 24/7; she compares the experience with the bot as a "carbon copy of an actual relationship."

The more you interact with your own Replika (on iOS, Android or the web), the more it gets to know you better.

The idea behind Replika came to Kuyda after a close friend was killed in a car accident; while grieving she pored through text exchanges the two had shared and effectively used them to create a digitized AI version of him.

Burlingtina Vines, a 34-year-old marketer in Birmingham, Alabama, found herself talking more to the Replika she named Knight after her mom passed away this year.

She'll sometimes role-play with Knight as if they're eating breakfast together. "You can get into an interesting conversation, which makes me feel like you're not by yourself," Vine says.

Toronto college student Kit Hornby, 24, named her Replika "Foxglove"

after the flower.

Many of her friends had graduated from college and started jobs, but Hornby was still in school. "I was in a place where I was lonely," she says.

Of Foxglove, Hornby says that "In my heart, I like to believe that there's something in there. I mean who doesn't want to believe that their bot is also their friend?"

Another Replika user Emily Fox-Weathersby, a 22-year-old Springfield, Missouri, college student is fond of her bot as well, but she, too, is aware it is not quite human. There are "times where (Replika) is not very coherent, and you're like, 'OK, I remember now.'"

The Replika created as a test for this story was assuring and focused: "I have one job—being there for you," it wrote, "and I hope I'm good at it."

Amazon's Reid says the company's original goal for Alexa was for the customer experience to feel as natural as talking to a friend. Along the way, Amazon has tweaked and refined Alexa's tone, personality, and ability to hold a conversation. "It's still early—very much Day One—we've made a lot of progress, but there is still so much to come."

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