

Meet Paro, a robot designed to help the elderly

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The elderly woman cooed softly and stroked the soft white fur of the creature in her lap, while it raised its head, batted its dark eyes and made a friendly meowing sound in return.

"He's very nice," said 85-year-old Theresa McDaniel. "I've always liked animals."

It wasn't really an animal. Residents and staff at the Sunny View Retirement Community, where McDaniel lives, have been trying out a robotic device called Paro that was developed by a Japanese inventor to serve as a mechanical pet for elderly nursing home residents.

Designed to resemble a cute baby harp seal, Paro is an early entry in a new wave of interactive or "socially assistive" robots that university researchers and tech companies are developing for people with special needs, such as seniors with dementia, children with autism and adults who have suffered strokes or other conditions.

Some critics are wary of such efforts, fearing they will lead to using machines as substitutes for human caregivers or companions. But researchers say robots like Paro can be a calming and socializing influence on people who have cognitive problems that cause them to feel anxious or isolated.

It's important to consider the ethics of using robots, said Maja Mataric, a University of Southern California professor of computer science who studies human-[robot](#) interaction. But she added that, for residents of some nursing homes, "the alternatives might be staring at the floor for hours, or at a television set. What's good about that?"

Isolation is a big concern with aging seniors, according to Sunny View activities director Katie Hofman. She said staffers at Sunny View's memory care center, where residents have varying degrees of dementia, have used a pair of Paro robots to draw people out of their rooms and into conversations - reminiscing, for example, about pets they owned at earlier stages of their lives.

Sunny View has a resident cat, and visitors sometimes bring dogs, but live animals can be messy or pose safety issues with some residents, Hofman said. Front Porch, the nonprofit organization that operates

Sunny View and several other California retirement centers, is evaluating wider use of the Paro robots, which are equipped with microprocessors and electronic sensors that respond to light, touch, movement and voices. They cost \$6,000 each.

During a five-month test at Sunny View, the robots helped some residents focus and stay engaged, when their dementia would otherwise make them anxious or wander aimlessly, Hofman said. "We've been able to use it in place of medication at times."

Eighty-nine-year-old Dorothy Hartley brightened when she spotted one of the Paro robots as she was rolling down a corridor in her wheelchair. She cradled it gently for several minutes as Hofman explained that Hartley, who tends to stay in her room, will come out and visit when the Paro is present.

Jerry Vroom, 92, was less enthralled. "What shall I say to you?" he asked one of the robots, before handing it off to McDaniel. "Here, you can have it," he said.

Some residents act as if the Paro is a live animal, while others clearly recognize it's not, Hofman said.

"They will say, 'You're not real, are you?' But they still think it's cute," she said. "The way I look at it is: If they respond as if it's real, we want to honor that. Or if someone else, like Jerry, isn't interested, we're not going to force it. But whatever will help them live their life in the fullest, we're going to meet them there."

Still, some critics worry about Paro. One of the most vocal, MIT social scientist Sherry Turkle, has warned that what she calls "faux relationships" with machines may detract from human connections.

"It's not just that older people are supposed to be talking. Younger people are supposed to be listening," Turkle said in a 2013 speech. "We are showing very little interest in what our elders have to say."

Robots like Paro may offer comfort to isolated seniors, Turkle has written, but it could "make us less likely to look for other solutions for their care."

Mataric argues that socially assistive robots can provide valuable reinforcement and motivation. At USC, she has developed small, humanoid robots that can engage with children who have autism disorders, or act as an exercise coach for someone recovering from a stroke.

Initial studies have shown that "when people interact with physically embodied machines, they engage more and they feel better," Mataric said. "It taps into how we are wired, emotionally and socially."

While robots aren't a complete substitute for human interaction, she stressed, they may play a vital role since "there just simply aren't enough people to take care of our very large and growing elderly population."

Mataric added: "We need to think about the humane and ethical use of technology, because these things are coming."

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