

Meet Paro, the Robotic Baby Seal IS IT THERAPY OR JUST PLAIN CREEPY?

I robot. You robot. He robot. Robots are everywhere. For decades, they have been as prevalent on TV and in science fiction novels and movies as they are now on the world's factory floors—and operation rooms. Fiction is now fact.

But have you ever heard of a therapeutic robot? No, not merely a hand puppet like Mel Gibson channels in the recent film oddity, *The Beaver*.

This is a robot with five—not senses, as most of us lucky ones are born with—rather, *sensors*. He possesses tactile, light, hearing, temperature and posture sensors—all of which he employs interacting with people.

As the identified sensors suggest, Paro—inspired by a baby harp seal—the un-bludgeoned variety—can discern light from dark. Like your beloved cat or dog—well, sort of—he warms to being stroked via a tactile sensor. And perhaps unlike your cat or dog, he loves being held (posture sensor).

And Paro is no dummy. He identifies voice sources, understands his name when called, and acknowledges greetings and praise courtesy of his audio sensor. He even lets you know when he's hungry—which in fact means his battery needs recharging.

Yet, Paro is even more than that. He's an extremely advanced, interactive robot that was developed by Takanori Shibata, a researcher at Japan's National Institute of Advanced Industrial Science and Technology (AIST) in Tokyo.

"Birth records" vary, but they indicate Paro was "born" around 2002 and is now in his eighth generation—no—make that iteration. Shibata is said to have designed Paro to produce emotions relevant to pets and babies. And no wonder: It weighs in at 6 pounds, exudes "body" warmth and sucks on a pacifier that doubles for a charger.

OK—how does it work?

By virtue of two 32-bit processors, three microphones, 12 tactile sensors, touch-sensitive whiskers and a system of motors that silently move its parts—all of which allow the beloved bot to recognize voices, track motion and "remember" behaviors that press positive emotional buttons in hospital and nursing home patients.

And while it certainly is true that one can't put a price on a human life, Paro, the "World's Most Therapeutic Robot,"—so certified by Guinness World Records—was born with a \$15 million price tag—and can be "adopted" for \$6,000.

Paro's popularity and acceptance can vary with the culture of a given country. But he has certainly made a splash



Paro, the therapeutic robot that looks like a baby harp seal (photo courtesy of Takanori Shibata).

in Denmark, according to a 2010 *Wall Street Journal* story by Anne Tergesen and Miho Inada. Since late 2008, they report, "Danish nursing homes have purchased 110 Paros, mainly with public funds," says Troels Vilms Pedersen, a team leader at the nonprofit Danish Technological Institute (DTI), Paro's European distributor. Since a 2008 study found that Paro soothed dementia patients and helped them communicate, DTI has encouraged every Danish nursing

home to buy one, Pedersen says."

The story also cites Sherry Turkle, a professor in the Science, Technology and Society program at the Massachusetts Institute of Technology—and, sad to say, a bit of a downer on the subject—in that while she "acknowledges Paro's potential as a communication aid, (she) warns against regarding it as a companion. 'Why are we so willing to provide our parents, then ourselves, with faux relationships?' she asks."

Another scoffer can be found at Lakewood Manor, a continuing-care retirement community in Richmond, VA. The *Journal* piece relates how the facility borrowed a Paro last year from U.S. distributor Paro Robots U.S. Inc. of Itasca, IL.

They sent it back after three months.

The story quotes Holly Raidabaugh, Lakewood's director of marketing: "I think the staff took to him more than the residents did."

Nevertheless, Paro was "confirmed" in 2009 by U.S. regulators as a Class 2 medical device (a category that includes powered wheelchairs).

But who's to say whether Paro earns his keep or is just a motorized pacifier?

At the Vincentian Collaborative's nursing homes in the Pittsburgh, PA area, Lois Simmeth, 73, is a bit of a loner—not uncommon to people of advanced age—but she willingly leaves the solitude of her room when she hears Paro sounding off out in the hall.

"I love animals," Simmeth explains to the *Journal* reporters.

And then, holding and whispering to Paro: "I know you're not real, but somehow, I don't know—I love you."