

# Robotic Dog Has Its Day

**iSchool researchers study kids and computerized pets to map the intersection of technology, information and nature.**

**By Mike Greenstein**

Published in University of Washington Information School's *iNews*, Summer 2002.

Pets can help children learn about life, love and death. Two University of Washington Information School faculty members are studying whether robotic pets can also do these things, or whether they fall short when it comes to stimulating a preschooler's moral and intellectual growth.

The researchers--Baty Friedman, chair of the Informatics degree program with a joint appointment in Computer Science and Engineering, and her husband Peter Kahn, a researcher associate professor in the Psychology Department with a joint appointment to the Information School--say their findings could affect how society views not just these sophisticated interactive toys but also the growing array of other "smart" devices that chatter at people in their homes and cars.

"Given its multi-disciplinary aspects, it is difficult to find a home for this kind of research," notes UW Information School Associate Dean Harry Bruce. "But Friedman and Kahn's project belongs at the iSchool, because their concerns match those of our faculty and staff--ensuring that information and technologies, whether they come from a book or a complex information technology system, truly meet the needs of the people who use them. Expanding our research like this actually broadens the influence of librarians, bringing their commitment to social justice and sensitivity to issues regarding information to new applications."

In the Friedman-Kahn study, 80 preschoolers spend 40 minutes apiece with Aibo, Sony's \$1,500 computerized canine, while researchers ask questions and observe. The youngsters (ages 3 through 5) cuddle and "train" Aibo much as they would a real dog. Missing, say the researchers, are the feedback and consequences that come with handling a live animal.

While only toys, Aibo and its brethren have gotten increasingly lifelike, thanks to voice recognition software and sensors that allow them to "learn" and interact. Even young children know Aibo is not alive, but its fluid movements, realistic responses and simulated emotions make it different from a doll. "With a stuffed animal, children tend to have a rich fantasy life," Friedman says. "Aibo can confuse the boundaries between what's real and imaginary, because the children get clues that prompt a real social rapport.

"In coming years," she continues, "robotic pets will become more technologically sophisticated and more animal-like. As they do, our research suggests, they will evoke more and more psychological responses from humans. But is that a good thing?"

"We have concerns about what happens when children fall prey to accepting robotic companionship without the developmental benefits that real companionship involves," adds Kahn.

Along with colleagues at Purdue University, the UW researchers are also observing Aibo with nursing home residents. "We are hopeful there will be real benefits for the elderly, who may value the companionship but no longer be capable of caring for real animals," Kahn says.

The Aibo studies, which have been covered by ABC-TV, *The New York Times* and other major media, are part of a wider National Science Foundation-sponsored research program at UW called the Value-Sensitive Design Projects. They examine the psychological effects of technology on the human experience. Value-Sensitive Design refers to an approach to technology that accounts for human values in a principled and comprehensive manner throughout the design process. According to the project Web site ([www.ischool.washington.edu/vsd/](http://www.ischool.washington.edu/vsd/)), "Value-Sensitive Design is primarily concerned with values that center on human well being, human dignity, justice, welfare and human rights. Value-Sensitive Design connects the people who design systems and interfaces with the people who think about and understand the values of the stakeholders who are affected by the systems."

Kahn and Friedman are the principal investigators for the Aibo study and the other Value-Sensitive Design projects. That means they are responsible for setting up and directing the research, analyzing the results, managing personnel and grant money, and being the lead authors on any papers published on the work. Aiding them are about a dozen undergraduate and graduate student research assistants, most from the iSchool.

"Our students are so great," said Kahn, watching Informatics senior Annie Foreman quiz a half-dozen preschoolers about Aibo. "They carry these projects for us. They work hard and constantly set new standards for each other."

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