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Week 4

Kahn: Robotic Pets in the Lives of Preschool Children

Much of the results based on the questions answered by the children seem the same for the stuffed dog and the robotic dog. The results from the questions seem a but difficult to interpret, however. For example, about half of the children attributed biological properties to each dog. The relevant question they mentioned was about whether the children thought the dog would eat a biscuit they had. It seems unlikely that the children seriously believed that the stuffed dog would eat the biscuit, but they were asked while pretend playing with the dog, so they answered in that context. It seems likely to me that under some circumstances you could encourage a child to pretend play with an object that is shaped nothing like an animal and during that time the child would attribute animal characteristics to it. It would be interesting to see a control study with an object that iconically is meant to be alive, but clearly isn't (a smiley face on a ball, perhaps) and an object that isn't even meant to look like an animal (a fuzzy die, say). However, the fact that a significant number of children react to the objects in this way with little encouragement does show how readily the children will engage in these behaviors with objects as similar to actual animals as these.

The area where AIBO won out over the stuffed animal was in the observed behaviors, rather than the answers to the questions. The most significant to me were the attempts at reciprocity, which implicitly attribute a fair amount of complexity to the AIBO. They also mentioned in increase in exploratory behavior and apprehensive behavior, but that seems pretty natural when encountering a robot for the first time, independent of any feelings of the animacy of the object. Again here it is a bit hard to tell what is being measured - perhaps even though the child is engaging in pretend play, it still can notice that one of the creatures has the ability to move independently, while the other doesn't. Thus it is natural to only attempt reciprocity with the one that can move, even if you are attributing the same animacy to both objects. It is difficult to get at the underlying intuition of the child, instead it is the behaviors it uses to engage the object that can be measured. This data is still valuable, however. When considering the effect of robots as pets on children, determining what behaviors the children display (and therefore get a chance to practice) with the robots is important to know.

Turkle: Technology and Human Vulnerability

I think that Sherry Turkle opens with a powerful example of how a simple "tool" is changing the way people teach and learn and possibly think. Powerpoint is so simple to use that it has become widely used in schools, even though it was designed for the business world. However, it forces users to present and learn information in a specific style that encourages certain types of information and interaction while discouraging others. It also acts as a crutch, in a way, because it allows people to make "professional"

presentations while, depending on the nature of the information, ignoring the difficult parts (such as pupil participation).

She also does a good job of taking a number of questions the interviewer asks about whether robots can feel emotions and transforming them into (in my opinion) more productive questions. People really like to ask whether robots truly "feel" emotions such as love; however, it is hard to know what this question really means since we don't even know very much about what it means for another human to feel these emotions. If we define it in a way so as to exclude computers (a certain quantity of some chemical present in the brain, say) then it doesn't really capture our intuition for what love means. If we define it more cognitively, it is possible to imagine it being built into a computer system and people get angry. She takes the questions and instead addresses them from the human side - why would we love a robot, and what does that mean about us? She also addresses the authenticity issue - is it a productive thing for a robot to say that it loves us because it calculates that that is what would make us most happy? The morality issues she address in the same way, ignoring a universal morality about what's right to do to intelligent robots, but instead focussing on what we would feel justified in doing to them.

She puts robots for children in an interesting light - perhaps they are less useful for taking the place of a human social bond, and more for becoming an augmented version of a raggedy ann doll. These inanimate objects seem useful for the children because they can freely enact their own fantasies on the doll - perhaps a robot that allows this role-playing without bogging the interaction down could add some useful features on top of the doll. She gives as an example that children prefer the tamagotchis to more sophisticated robots because the tamagotchis need them more - maybe that need is useful for developing a healthy and confident personality.

It was interesting to me that her arguments against regulating the internet as a drug are very similar to some of the arguments against prohibiting drugs themselves. She writes that it is used as a kind of mirror, where people can express themselves and look at what they have done in the virtual world and try to better understand themselves in the real world. This is exactly how certain drugs (ex, LSD) were used by the psychiatric profession before becoming illegal.

She also touches on the issue that technology and medical research is definitely changing how we think of the self. For example, every time we diagnose a new treatable mental condition (ie, ADD) it is transformed from inside the self to the outside - it changes from a personal trait that if we just tried we could overcome to a condition outside ourselves that can (and should) be fixed externally. Many more obviously physical problems have been this way for a long time (ex, bad vision), but it seems that only recently have mental conditions started to have this happen to them. I have heard advertised a drug for treating shyness - will shyness become an external condition instead of a personality trait? This trend is quite worrying to me, mostly because of the quiet acceptance that these drugs remedy external problems, rather than modifying the self, causing the realm of the "self" to shrink smaller and smaller. Not that people shouldn't modify themselves, but I feel that we should acknowledge what is happening. I can imagine a slow progression to a state

where if a drug comes out that cures "chronic dissatisfaction with having a lonely life and working in a boring job", people will accept it and even be expected to take it, if they are so afflicted.

Forlizzi: Assistive Robotics and an Ecology of Elders Living Independently in Their Homes

The authors here try to identify some of the key problems surrounding aging and product use. They write that it is usually better for elderly to be able to stay in their own homes rather than move in with a family member or assisted living facilities, but that few actions are taken to allow this to happen. The people they talked with rarely talk of modifying their existing home to allow for more convenient living, but instead talk about adding something else like an extra porch. They also seem to resist help from others in making the house simpler to maintain if it means giving up on space or products that they have come to identify with (although they seem to welcome changes that do not mean giving up on such things, such as lowering of cabinets).

The authors also identify how much more important a product can be in this context, and how its malfunction or breakdown can cause a significant interruption in the life of the elderly person and need for assistance. This seems like a good point - while a product breakdown is always inconvenient, an elderly person may be much less equipped to deal with it than someone younger who is more active in society and has more tools at their disposal.

While the authors mention that elderly are less likely to buy a product because of its stylistic value, they do seem to be saying that they are very likely to refuse one based on aesthetics. They may refuse it because it does not fit with their personal aesthetic, or because it seems to be designed for the elderly and thus has a stigma attached to its presence or use. They do also seem to keep products for purely stylistic reasons or to show off some aspect of their life, such as the woman who keeps a grand piano in her small apartment though she can no longer play it.

The authors are describing the critical need to make helpful products that also do not seem to be targeted at elderly or reduce the dignity of the owner. While a large part of this may be in the design of the product itself, such as the aesthetics, it seems like an even larger part is in the societal acceptance of the product. For example, electric scooters are pretty cool and lots of children would be really excited about driving one around, indicating perhaps that there is nothing inherently demeaning in the product design. However, if there is a societal stigma about riding one and being old and weak, it doesn't matter how good the product design is people will not want to have one. Perhaps an argument against this is Deka's balancing wheelchair, which seems to escape this stigma. I wonder, however, if it is just because it is new and uncommon - if everyone had one, it might creep back. Perhaps there needs to be a fundamental change in the the way elderly and assistive products are viewed that comes from both angles: product design and social consciousness.