Title: Anthropomorphism in Artificial intelligence: Psychological Implications for Developmental Robotics

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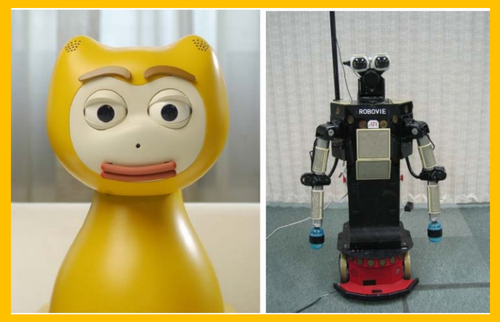
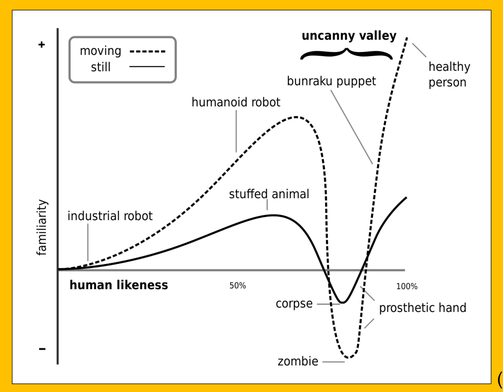
Introduction

- Since the turn of the century there has been an increased number of companies that use artificial intelligence to assist with simple tasks
- In order to increase customer satisfaction, research on interactions with artificial intelligence between psychology and engineering is vital to explore
- The research question guiding my research is: How can AI designers exploit what we know from Psychology to develop better interactions with AI technology?



(Bartneck et al., 2009)



(Mori et al., 2012)

Animacy

Animacy can be described of as the level of aliveness that can be attributed to another object.

Effects of Animacy on humans

- Kids go through stages of attribution of animacy where the reasoning that they give changes at each stage (Bartneck et al., 2009). Paired with other information people will enjoy looking at a robot more if they believe that it is a human and if the robot uses arm movements while it is telling stories.

Conversation Style and Intelligence

- By increasing the perceived intelligence of the artificial intelligence of the robot that is interacting with the human, the person will believe that that robot has a higher level of animacy (Bartneck et al., 2009).

Unreasonable Expectations of AI

- When interacting with customers, artificial intelligence that has some level of anthropomorphism get treated differently than robots that are easily distinguishable from humans

Technological Problems

Uncanny Valley

One of the most important aspects of the physical embodiments of artificial intelligence is the uncanny valley theory. The theory states that as human likeness of something increases so does our familiarity of that object until a certain point where we feel uncomfortable looking at said object (Mori et al., 2012).

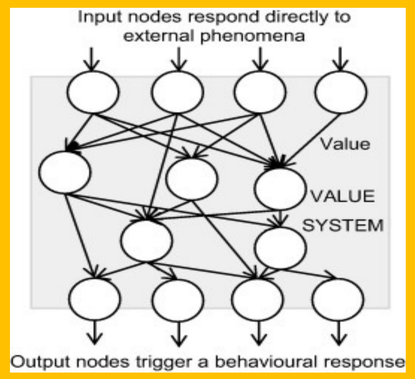
Facial Lag

Another limitation of the physical embodiments is the facial lag that can occur when trying to match the mouth movements with the voice. This can happen because of the limitations people have with resources and technology (Riek & Robinson, 2009).

Value Systems

Building the Value Systems

The value system that is implemented into artificial intelligence is a mirror image of the one that humans have. Engineers of the robots found ways to simulate the way that people use reasoning to make decisions. The more complex the system is the better it can mirror human functions like thirst and hunger. Even something like artificial empathy can be created with these systems (Asada, 2015).



(Merrick, 2017)

Conclusions

The conclusions that can be made about animacy, modality, and value systems are:

- The level of animacy can be changed based on things like perceived intelligence, arm movements, and conversation style.
- The level of animacy should not be consistent over all situations but should change depending on the audience.
- There are several limitations that can happen with the robotic technology that cause psychological distress like facial lag and uncanny valley.
- The value system can be mirrored after people, with more complex systems being made after things like empathy, hunger and thirst.

Resources

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