



# ETHICS AND ABUSE IN CHILD-ROBOT INTERACTION

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CS5760 SPRING 2016



# CHILD-ROBOT INTERACTION

- Kids are encountering robots in all sorts of contexts
- This trend is expected to continue
- Often goes well, but not always



# EXAMPLES IN EDUCATION

- Tutoring applications have shown mixed results [5; 8; 10].
- It is possible that a social robot both increases engagement, but also distractions.
- For classroom noise level management [11], a novel humanoid robot was more effective than either the teacher or a non-social device.

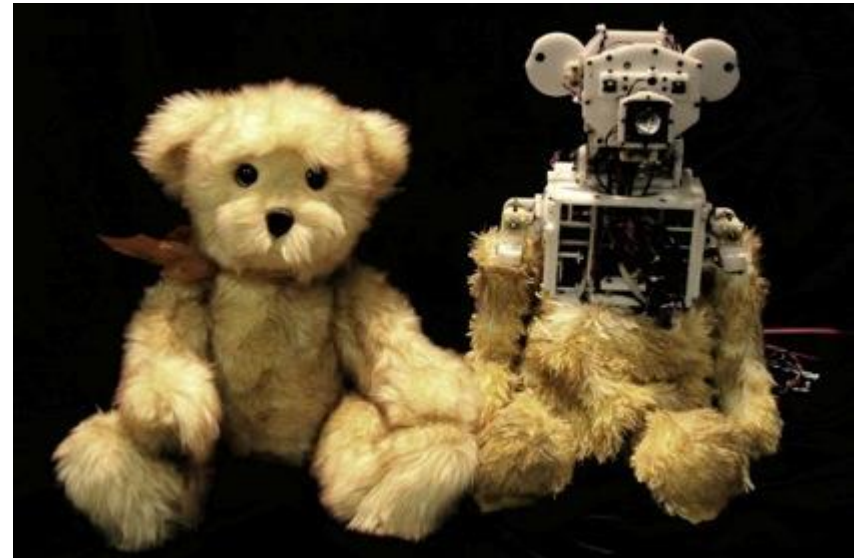


## EXAMPLES IN HEALTHCARE

- Numerous studies are investigating the use of robots in treatments for children with Autism Spectrum Disorders [2; 3; 9].
- Initial results with pediatric oncology patients and the Huggable teddy bear robot indicate that it successfully engages children and elicits more emotional attachment than a virtual character with the same social capabilities [6].

# ROBOETHICS

- Ethically, how do you classify social robots?
- How do kids?
- During the Huggable study [6], one of the children was upset the robot could not be left in her room and requested when the robot was taken away to “go to bed” that someone else be sent to play with him since she could not.



# ROBOVIE'S RIGHTS

- The experiment [7]: 9-15 year old kids interacted with the humanoid robot Robovie over multiple sessions. Each session ended with Robovie acting scared and arguing (to no avail) against being put in a closet.
- The results:
  - The children developed emotional bonds to the robot and considered them friends.
  - The majority of children believed the robot had emotions and intelligence.
  - They also believed the robot had some rights, such as a right not to be harmed but not a right to wages for labor.

# ROBOT ABUSE

- Not the abuse of children by robots, the abuse of robots by children
- The definition used in [1] is “Persistent offensive action, either verbal or nonverbal, or physical violence that violates the robot’s role or its human-like (or animal-like) nature”.
- The studies [1; 12] that prompted this involved Robovie patrolling in a Japanese shopping mall.

# WHO ABUSES ROBOTS?

- In one of the shopping mall studies [12], it was:
  - Kids under 10
  - Mostly boys
  - Without immediate parental supervision
  - More likely in low traffic areas





# WHY DO KIDS ABUSE ROBOTS?

- In a shopping mall robot abuse study [12], the kids were interviewed after their parents had interrupted the behavior. They listed a variety of reasons for what they had done.
  - Curiosity
  - Enjoyment
  - Joining other kids
- Only 1 kid interviewed said they were trying to harm the robot.
- About half believed the robot suffered from their actions.

# THE SCARY (AND NOT SO SCARY) PARALLELS

- Animal abuse
- Bullying other kids
- Rough treatment of toys



# REALLY, ROBOT *ABUSE*?

- Is that term accurate?
- Is it fair to consider little kids robot abusers?
- I'm going to use the term anyway...



# HOW CAN WE FRAME ETHICAL TREATMENT OF ROBOTS?

## Rights of owner/operator

Interfering with a robot affects the owner or operator of the device.

## Concern for actor

The way someone treats a robot affects the person themselves.

## Intrinsic rights of robots

Robots (or maybe just social robots) have certain rights simply because they are robots.



## THE DIFFERENCE BETWEEN CAN AND SHOULD

In a study utilizing the humanoid robot Nao to regulate noise in a classroom [11], the most effective technique to get students to quiet down was to have Nao ask them to settle because he was getting a headache.

# SERIOUS IMPLICATIONS

## Robots can be put in danger

- Robots are used to clear bombs and defuse hostage situations
- A robot is less valuable than a person
- What might be the psychological impact of teaching kids that robots have rights?

## Robots can put people in danger

- Not all robots are friendly
- Robots are or could be used offensively in law enforcement, security, and war
- Should we teach kids to treat robots with kindness and respect if they might not get it back?

## SO WHAT HAS BEEN TRIED?

- In a shopping mall [1], the robot tried to avoid and escape from abusive situations.
- Words didn't work.
- Physically pushing past the children was partially successful...
- Except the children quickly escalated their behavior and the robot couldn't safely keep pushing back.



# POTENTIAL FUTURE WORK

- Repeat in the US
- Repeat in other environments
- Examine motivation of parents stopping children
- Look for parallels to treatment of peers
- Explore other methods of mitigating abuse



# FINAL THOUGHTS

- Is this a permanent or temporary problem?
- Will we socialize kids to robots effectively enough in future generations that we don't need to socialize robots to kids?
- How with this dynamic change as robots become ubiquitous?

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