Robots encounter barriers they are not programmed to handle → must ask humans for help

Different age groups have various levels of comfort with robots → inconsistent and unreliable reactions to a robot’s plea for assistance

How can these robots best ask for assistance in a way that does not incite disgust, fear, or discomfort from any person of any age group?

Robots can more effectively ask for aid without inciting negative emotions → appeals to a wider user base and leads to more efficient troubleshooting

People of all age groups are more comfortable with robots → bridges the technological divide between generations

### Impact

People of all age groups are more comfortable with robots → bridges the technological divide between generations

### Generational Differences in Empathy Towards Semi-Autonomous Robots

#### Problem Definition

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#### Protocol

**GenX Participant**

Evaluate Participants’ Baseline Empathy

Help Robot Navigate

Robot Asks for Help in 4 Ways

**GenZ Participant**

Evaluate Participants’ Attitudes Toward the Robot

Determine Methods Resulting in Improved Emotional State and Assistance

### Methodology

1. **Pre-Experiment Empathy Baseline Questionnaire:**
   Evaluate baseline disgust, fear, and sadness on a 7-likert scale [2]

2. **Maze Navigation:**
   Robot asks for help in different ways and participants aid in circumventing obstacles

3. **Post-Experiment HRI (Human-Robot Interaction) Questionnaire:**
   Anthropomorphism, animacy, likeability, perceived intelligence, and perceived safety on a 5-likert scale [1]

### References

2. Olderbak et al., “An Emotion-Differentiated Perspective on Empathy with the Emotion Specific Empathy Questionnaire.”