

# The nuts and bolts of race and sex cues: Human stereotypes applied to social robots

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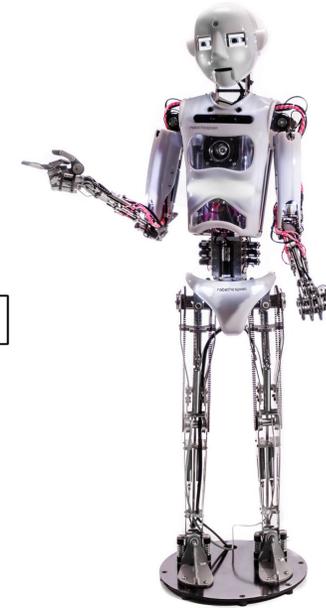
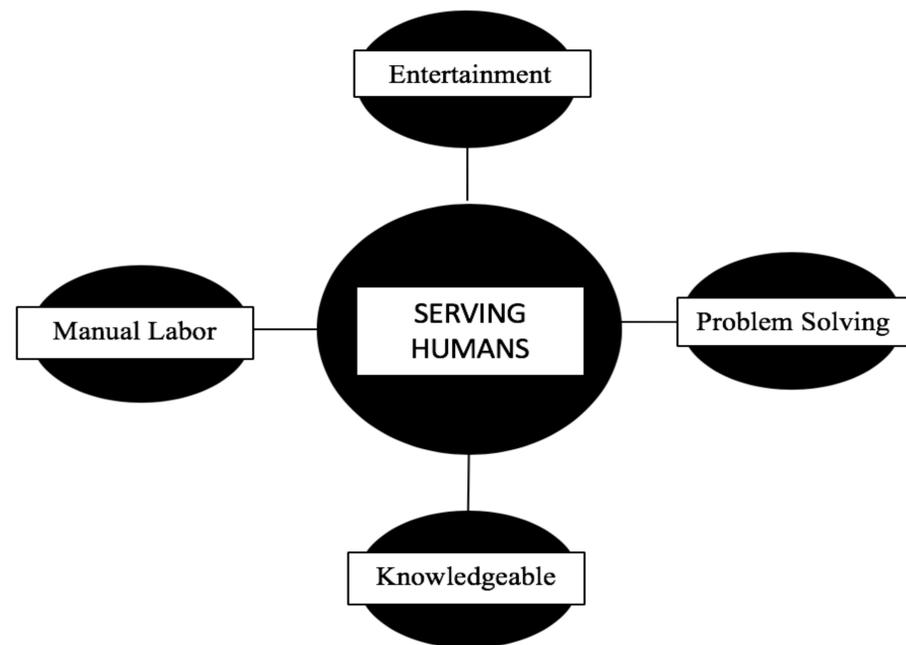


## ABSTRACT

Stereotypes are oversimplified, often-problematic illustrations of particular group of people. As contemporary robots are often designed with white and female features, scholarship has increasingly critiqued the potential for invoking racist and sexist stereotypes that may then be reinforced and reintroduced into human-human interactions. There is some empirical evidence of robots' sex and race separately invoking stereotypes. However, the intersection of these variables has not been deeply examined yet. These two variables are important to observe together because exhibited and interpreted social identities are intersectional, so people are often disadvantaged by multiple sources of stereotypes.

## RESEARCH QUESTION

When people apply stereotypes to social robots with differing race and sex cues, what is their rationale for applying that stereotype?



## FINDINGS & CONCLUSIONS

Data was analyzed through inductive thematic analysis and compared across the race/sex-cue conditions and across positive/negative stereotype categories. Our findings show that race and sex cues were not mentioned in the free response question. Participants' reasonings for applying various social stereotypes were based on the robot's functionality and identity as artificial intelligence. Most responses were centered around the theme of serving human beings through various outlets; such as solving societies complex problems, answering questions, providing free or cheap labor, entertaining humans, providing companionship etc. These reasonings applied along with social stereotypes like "thinker, servant, or skilled worker" illustrate how overall human's view robots as a means to an end; presenting a possible moral dilemma when looking at how robots are viewed and treated by humans and how humans view and treat each other.

## Methodology

This experiment utilizes a 2 (African American/Caucasian) × 2 (male/female) between-subjects experimental design.

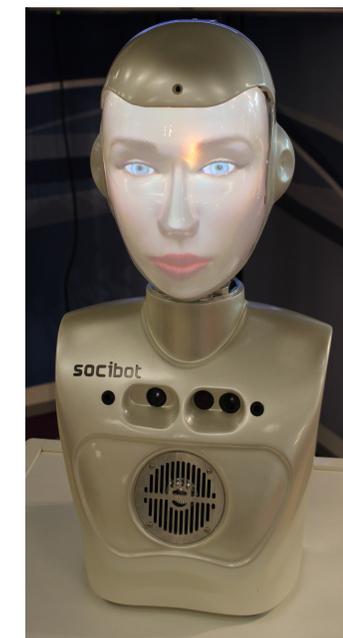
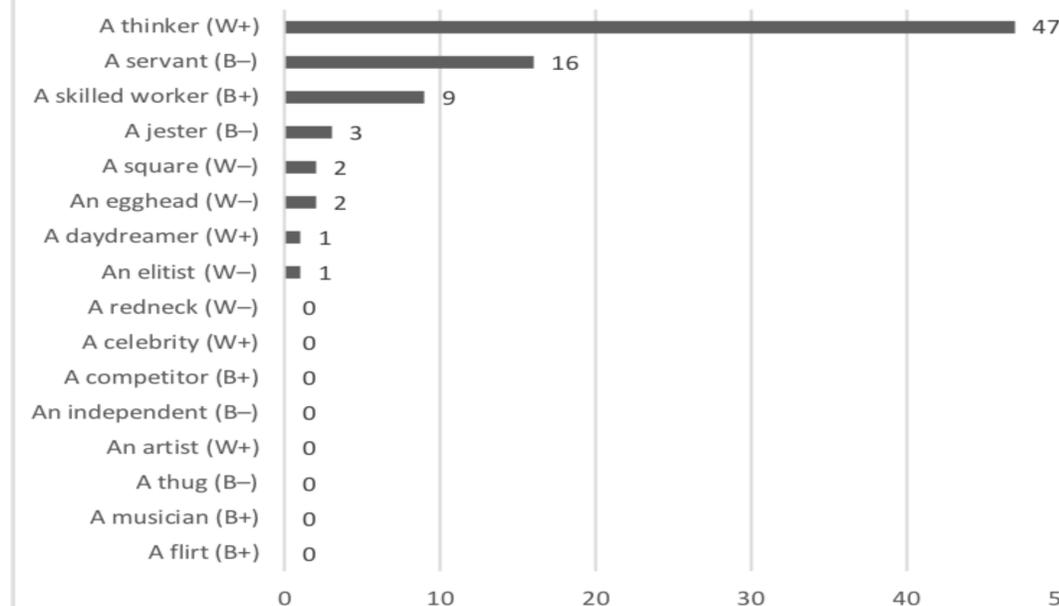
Race and sex cues are cued through vocal timbre and digital skin color.

N = 120 participants are asked to listen to a robot introduce itself. Then they are asked to fill out a survey including (in addition to data not analyzed here) a section in which they

(a) choose from 16 stereotypes that reflect how the robot might behave in society

(b) explain why they chose that particular stereotype.

## STEREOTYPE SURVEY RESULTS



## KEY

- (B+) Positive Black Stereotype
- (B-) Negative Black Stereotype
- (W+) Positive White Stereotype
- (W-) Negative White Stereotype

References: (Green, 1998), (Cothran, 1950), (Peffley, Hurwitz & Sniderman, 1997)