

APPENDIX. QUESTIONNAIRES

People's perceptions of a robot's reward power, coercive power, expert power, legitimate power, and referent power were assessed using a 7-point Likert scale questionnaire. All items are listed in Table 1. Trust was assessed using a 3-item, 7-point Likert scale questionnaire. All items are listed in Table 2. Acceptance was assessed using a 4-item, 7-point Likert scale questionnaire. All items are listed in Table 3. Perceptions of the interactions between humans and robots were assessed using an 8-item, 7-point scale. All items are listed in Table 4.

Table 1. Power bases Questionnaire

Item Text	Power	Source(s)
I will do what this security robot asks because it can provide special help or benefits.	Reward	Ferdik and Smith [2]
This security robot gives tangible rewards to people who cooperate.	Reward	Stichman [5]
I will follow the instructions of this security robot because it offers rewards for compliance.	Reward	Self-created
I will consider this security robot to be a friend.	Referent	Stichman [5]
I will do what this security robot asks because I respect it.	Referent	Ferdik and Smith [2]
I will cooperate with this security robot because it is fair.	Referent	Stichman [5]
I will do what this security robot asks because I believe this security robot has the authority to tell people what to do.	Legitimate	Ferdik and Smith [2]
I will follow the orders of this security robot because the robot has the right to be obeyed.	Legitimate	Hepburn [3]
I will follow orders simply because I am told to do so by this security robot.	Legitimate	Stichman [5]
I will do what this security robot asks because I fear sanctions.	Coercive	Ferdik and Smith [2]
This security robot can apply pressure or penalize me if I do not cooperate.	Coercive	Ferdik and Smith [3]
Fear of legal punishment will make me cooperate with this security robot.	Coercive	Stichman [5]
I will do what this security robot asks because I think this security robot knows what is best for people.	Expert	Ferdik and Smith [2]
This security robot has the competence and good judgment about things to know what is best.	Expert	Hepburn [3]
I will listen to this security robot because of its skills and knowledge.	Expert	Stichman [5]

Table 2. Trust Questionnaire

Item Text	Source(s)
I would be comfortable giving this robot complete responsibility for the completion of its security task.	Robert et al. [4]
I would have no problem allowing this robot to take action when threats occur.	Robert et al. [4]
I trust this robot enough to rely on its protection for the safety of both myself and my belongings.	Robert et al. [4]

Table 3. Acceptance Questionnaire

Item Text	Source(s)
I will interact with security robots in the future if possible.	Ye et al. [6]
I am not reluctant to interact with security robots if possible.	Ye et al. [6]
I will acquire a security robot if the opportunity presents itself.	Ye et al. [6]
I am open to utilizing security robots as part of my security measures if possible.	Ye et al. [6]

Table 4. Perceptions of Human-Robot Interactions Questionnaire

Item Text	Source(s)
How enjoyable did the interaction between the security robot and the person appear?	Berry et al. [1]
How upsetting or unsettling did the interaction between the security robot and the person seem?	Berry et al. [1]
To what extent did the interaction seem smooth, natural, and relaxed?	Berry et al. [1]
How likely would you be to interact with a security robot based on what you saw?	Berry et al. [1]
To what extent did the interaction feel forced, strained, or awkward?	Berry et al. [1]
How intimate did the interaction between the robot and the person feel?	Berry et al. [1]
To what extent did the interaction between the robot and the person seem satisfying?	Berry et al. [1]
How pleasant did the interaction between the security robot and the person appear?	Berry et al. [1]

REFERENCES

- [1] Diane S Berry and Jane Sherman Hansen. 1996. Positive affect, negative affect, and social interaction. *Journal of personality and social psychology* 71, 4 (1996), 796.
- [2] Frank Valentino Ferdik and Hayden P. Smith. 2016. Maximum security correctional officers: An exploratory investigation into their social bases of power. *American Journal of Criminal Justice* 41 (2016), 498–521.
- [3] John R Hepburn. 1985. The exercise of power in coercive organizations: A study of prison guards. *Criminology* 23, 1 (1985), 145–164.
- [4] Lionel P Robert, Alan R Denis, and Yu-Ting Caisy Hung. 2009. Individual swift trust and knowledge-based trust in face-to-face and virtual team members. *Journal of management information systems* 26, 2 (2009), 241–279.
- [5] Amy Joan Stichman. 2003. *The sources and impact of inmate perceptions of correctional officers' bases of power*. University of Cincinnati.
- [6] Xin Ye, Wonse Jo, Arsha Ali, Samia Cornelius Bhatti, Connor Esterwood, Hana Andargie Kassie, and Lionel Peter Robert. 2024. Autonomy Acceptance Model (AAM): The Role of Autonomy and Risk in Security Robot Acceptance. In *Proceedings of the 2024 ACM/IEEE International Conference on Human-Robot Interaction*. 840–849.