THE EFFECT OF PERFORMANCE FEATURES OF TELEPRESENCE ROBOTS ON THE PERSONALITY PERCEPTION OF THEIR USERS

IN *2023 IEEE INTERNATIONAL CONFERENCE ON METROLOGY FOR EXTENDED REALITY, ARTIFICIAL INTELLIGENCE AND NEURAL ENGINEERING (METROXRAINE)* (PP. 1182-1187). IEEE.

Ali Asadi & Kerstin Fischer

Erasmus+

InClass

The effect of performance features of telepresence robots on personality perception of their users

Ali Asadi, University of Southern Denmark, aa@sdu.dk

Kerstin Fischer, University of Southern Denmark, kerstin@sdu.dk

Abstract

The Media Equation Hypothesis suggests that people attribute features of the medium to the content. In line with this hypothesis, in this work we investigate the effects of speed and shakiness of movement of a telepresence robot on the perception of the robot pilot's personality. To this end, we designed a between-subject study with three conditions. In the first condition, participants watched a video in which a telepresence robot was being driven with a speed of 1.5 km/h. In condition two, the robot moved with the same speed, but this time in a shaky manner. In the third condition, the robot was driven with double speed. 100 participants judged the robot pilot's personality in a questionnaire. The analysis of our data shows that the telepresence robot pilot is considered significantly more depressed, tense, shy, moody, and less self-confident when the robot is driven with low speed and more tense and irritable when it shakes while being driven. Therefore, the personality of the telepresence robot pilot is perceived differently depending on the speed or the quirkiness of the robot's movement.

Key words: Telepresence robot, media equation hypothesis, mediated communication, perception of personality

Introduction

People tend to communicate with computers and other types of technologies in a similar fashion as they communicate with other humans (Reeves and Nass, 1996). For example, they might be polite toward an artificial agent or interact differently with computers that have a male and female voice (Hoffmann et al, 2009). Furthermore, as suggested by the Media Equation Hypothesis, the type of medium and its physical features can impact people's perception of the content of the medium (Reeves and Nass, 1996). In a study, Reeves and his colleagues (1992) showed that the size of a screen or its distance from people can affect the way people judge the character of the person displayed on the screen.

When it comes to mediated communication through telepresence robots, one of the major aims is to help robot pilots interact as naturally and intuitively as possible with people who are present in a remote location (Kristoffersson et al, 2013). For example, when a student cannot attend school due to a chronic illness or hospitalization, a telepresence robot is a form of technology that can help them attend school virtually and maintain their social presence in their educational settings and among their peers (see for example Newhart, Warschauer & Sender, 2016; Johannessen, Rasmussen, & Haldar, 2022). In such situations, it is important how other collocated students perceive the personality of the remote child. As according to Bremner et al. (2016), perceived personality of individuals is a major factor that affects interpersonal relationships between people.

In this work, we examine whether the speed of a telepresence robot and the quirkiness in its movement have any impacts on the way people judge the personality of the robot pilot. More specifically, we drive the telepresence robot in three different ways: (a) the robot moves slowly, (b) it moves slowly in a shaky way, and (c) it drives fast in a natural way, without extra effort to make it look smooth or shaky. Thus, we aim to address the following research question:

RQ: Does the telepresence robot's speed and/or shakiness while moving affect people's perception of the personality robot pilot?

Previous work

This section concerns findings of previous studies on the media equation hypothesis and perception of remote user’s personality as well as mediated communication via telepresence robots.

Media equation and perception of remote user’s personality

Media equation means “media equal real life” (Reeves and Nass, 1996, p.5). According to this hypothesis, people tend to employ the rules of human-human communication in human-technology interaction and treat technology in a similar way they communicate with other humans (Lee, 2004). In an experiment that studied politeness toward artificial agents, Hoffmann and her colleagues (2009) instructed 63 participants to converse with an embodied conversational agent for ten minutes and then evaluate it. The evaluation happened in a questionnaire that was either asked by the agent itself or was given to participants on paper. The researchers found that participants were more polite in the condition where they were questioned by the conversational agent rather than when they answered the questions on paper. The media equation hypothesis also states that some features of technology can influence the way users perceive the content of that technology. Reeves, Lombard, & Melwani (1992), for example, found that the size of a screen has a positive correlation with the viewers’ evaluation of the people shown on the screen. That is, if viewers felt that they liked or disliked a person on a small screen, that feeling increased when they saw the person on a larger screen. Kurtzberg, Kang, and Naquin (2018) compared the effects of screen size on negotiations done through either a laptop or mobile phone. They found that large screen led to better performance and higher joint outcome compared to small screen. In another study, Cores-Sarría, Hale, & Lang (2022) examined whether camera angel and distance influences emotional responses of participants as they interacted with a dataset of emotionally stimulating pictures called the International Affective Picture System (IAPS). Their findings suggest that affective responses increased by closer framing and high/low angles – as opposed to longer shots and straight angles. Kuwamura et al. (2012) examined whether the communication medium affects the perceived personality of its user. In their experiment, participants spoke with a remote user through (a) a human-like teleoperated robot, (b) a stuffed-bear teleoperated robot, or (c) a video call. They found that participants perceived the personality of the remote speaker differently depending on the communication medium that he used. According to the researchers, people make assumptions about the abilities of the operators of a teleoperated robot or different communication media based on their physical appearance and attributes (Kuwamura et al., 2012). Similarly, Bremner et al. (2016) found that the personality of the operator of a teleoperated robot can be judged based on the appearance of the robot avatar. Hence, the content of technology can be perceived differently due to differences in the physical attributes of the medium.

Mediated communication

Mediated communication has increasingly become popular in recent years. It enables people in distant places to communicate with each other for different purposes such as work, education, and entertainment. While video-enabled synchronous communication has its benefits, compared to face-to-face interaction, it is still lacking in terms of social inclusion (Daly-Jones et al., 1998) and participation (O'Conaill et al., 1993), among others. Tang et al. (2004) argues that such shortcomings can be due to a reduced degree of social presence, engagement, and awareness of actions of remote users.

As an alternative means of telecommunication, a telepresence robot can, to some extent, compensate for such shortcomings, mainly because the offer mobility, which enables remote participants to have some degrees of autonomy and control over interaction by changing camera angle and addressing or interacting with different collocated people (Stoll et al, 2018; Jakonen & Jauni, 2022). In addition, telepresence robots have the potential to take remote, video-based communication one step further through providing remote users with a rich sense of presence in various settings such as education and healthcare (Herring, 2015). Furthermore, they can raise trust level toward remote users compared to online videoconferencing tools such as Zoom (Rae et al., 2013).

Although telepresence robots add to the richness of mediated communication, they still lack compared to face-to-face interaction. For example, in a study by Stoll et al. (2018), a telepresence robot user and two collocated participants worked together to solve a puzzle. The aim of the study was to examine how participation, attitude, and perception of group members are impacted and whether task distribution can affect their interaction. The participants were asked to cooperatively solve a translation puzzle in three different conditions: (a) all participants had the translation key, (b) the collocated participants had the translation key, or (c) only the telepresent participant had the translation key. Their findings show that remote team members participated less, experienced more task difficulty, and were regarded less trustworthy compared to collocated participants. In another study, Tsui et al. (2011) reported that in team meetings, remote users who joined via a telepresence robot experienced a lower sense of belonging and willingness to contribute to group aims compared to other members. Moreover, Gleason & Greenhow (2017) found that in multiparty collaborations where at least one person uses a telepresence robot, teamwork can be negatively affected because of the robot's limitations regarding field of vision and incomprehensibility of communication in noisy, real-life settings. In addition to the abovementioned limitations of using a telepresence robot, we hypothesize that the perceived personality of telepresence robot users can also affect interaction with collocated users. As Bremner et al. (2016) put it, the way personality is perceived plays an important role in various social contexts and can affect the desired outcome of the interaction.

Methods

This is a between-subject study with three conditions. The first condition (C1) includes a video of a telepresence robot being driven in a lab with the speed of 1.5 kilometers per hour (km/h). In this condition, the robot operator drove the telepresence robot in a smooth manner from the start to the end point. In condition two (C2), the operator drove the telepresence robot with the same speed as in C1, but this time in a shaky way. In the third condition (C3), the robot's speed was 3 km/h and it was driven normally, without extra effort to make the movement more smooth or shaky. As soon as each participant agreed to take part in the study, they were pseudo-randomly assigned to one of the conditions.

Participants

Overall, 119 participants were recruited through an online crowdsourcing platform called Prolific. However, 13 participants left before completing the study and six others failed to do the task, which could indicate that they did not watch the videos or read the instructions carefully. The remaining participants (N=100) included 50 females (age: 20-77, M = 39.84, SD = 13.28), 47 males (age: 21-75, M = 40.61, SD = 13.92), and three people who either did not disclose their gender or chose 'other' for their gender. All participant consented to partaking in the study and each was compensated a common rate of seven dollars per hour for their participation which took about three minutes.

Questionnaire

We used the 15-item extra-short form of the Big Five personality questionnaire proposed by Soto & John (2017) to measure personality traits and individual differences. According to this inventory, personality structure has five major domains, namely, extraversion, agreeableness, conscientiousness, emotional stability or neuroticism, and openness. Each of the domains have three facets. Extraversion, as the first major personality trait, is defined as the level of sociability and emotional expressiveness of an individual, and includes the facets *quiet*, *dominant*, and *energetic* (John and Srivastava, 1999). The second domain, i.e., agreeableness, is associated with trust and selflessness, meaning people with high agreeableness are expected to be more helpful and cooperative, while those with less agreeableness can be more competitive (Quintelier, 2014). The facets in this domain are *compassionate, rude,* and *assuming the best about people.* The third personality trait is conscientiousness, which refers to high degrees of thoughtfulness and goal-directed behaviors, planning ahead, and paying attention to details (John and Srivastava, 1999). In this domain, the facets include *disorganized*, *having difficulty starting a task*, and *reliable*. Neuroticism or emotional stability, the fourth major trait, is characterized by sadness, calmness, relaxation, mood swings, or nervousness. Neuroticism refers to the way that an individual reacts to stress and threats in their daily life and asks to what extent people are *worried*, *depressed*, and *emotionally stable* (Quintelier, 2014). Finally, openness is related to characteristics such as imagination and eagerness to learn and shows to what extent a person is willing to experience new ideas and is open to new experiences (Quintelier, 2014). This domain's facets are *fascinated by art, music, or literature*, *having little interest in abstract ideas*, and *original, with new ideas*. In addition to these items, and since this shortened version does not cover all the facets of each domain, we added the neuroticism facets from John and Srivastava (1999) to the questionnaire. These facets include the following adjectives: tense, irritable, not contented, shy, moody, and not self-confident. Overall, the personality questionnaire included 21 questions with 5-point Likert scale answer options from strongly disagree to strongly agree. The order of the questionnaire items was randomized to minimize the impact of order effect.

Procedure

After participants gave consent to take part in the study, we elicited demographic information about their age and gender. After that, they were instructed to watch a video[1] of a person driving a GoBe telepresence robot, which is a 1.61-meter-tall telepresence robot with a 21.5-inch touchscreen display, manufactured by Blue Ocean Robotics in Denmark. We told the participants that the robot operator

---

[1] The videos are available at: C1: https://youtu.be/9w6ivICVoxY C2: https://youtu.be/ZFrGHEeg608 C3: https://youtu.be/HasBHgA-izs

would look up a number on a screen and read it out loud to the camera. The participants' task was to write the number down in a designated box under the video.

In the videos, recorded by a Canon LEGRIA HF R606 Camera, the GoBe telepresence robot is standing at a starting point which was located about three meters away from the camera. As soon as the robot pilot starts moving toward the camera, he waves his hand and takes a left turn in a curve toward a computer monitor that was placed on the left of the robot. Then, without pausing or slowing down, he looks at a number on the screen and then turns right to drive toward the camera. He then stops as it gets close to the camera and reads aloud the number that he had seen on the screen. The robot operator maintains the same hand gesture and facial expressions to assure consistency across all conditions. Figure 1 shows the telepresence robot's path and figure 2 is a screenshot of the task used in the experiment.

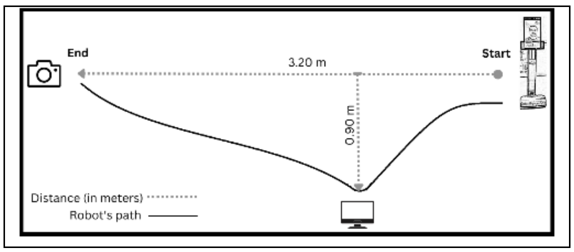

Figure 1. Telepresence robot's path

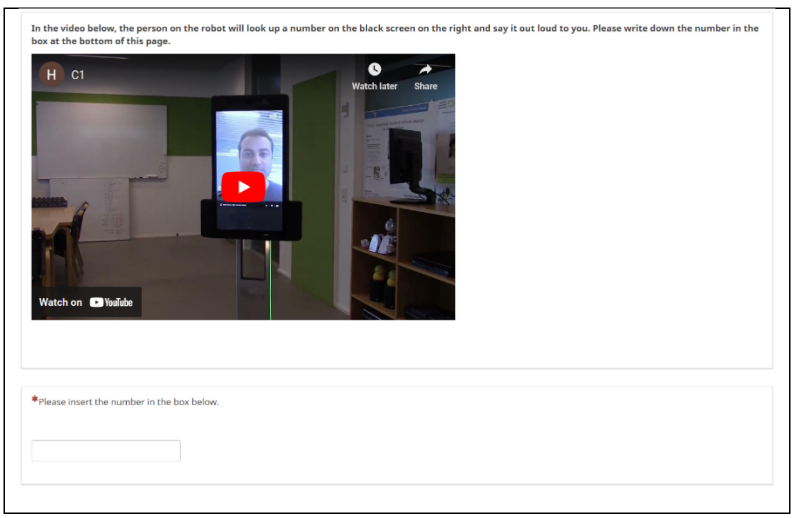

Figure 2. Screenshot of the task of the study

In the online survey, the number insertion task was added to create a distraction from the main aim of the study and to make sure that the participants paid proper attention to the video. The participants who failed to input the right number were excluded from the study. After this part, participants completed a questionnaire on how they perceived the personality of the telepresence robot pilot. When they finished the questionnaire, they received the compensation for their time and participation in the study.

Results

The data collected online were imported into and analyzed via IBM SPSS Statistics version 26 software. To prepare the questionnaire data for analysis, we attributed numeric values to the Likert scales in the following manner: 5 = strongly agree, 4 = agree, 3 = neither agree or disagree, 2 = disagree, and 1 =

strongly disagree. Then, a one-way ANOVA test were run to compare the effect of speed, smoothness, and shakiness on the way the robot operator's personality was perceived and to examine whether or not there were any significant differences between the means of the groups. Table 1 shows the ANOVA results of the items that were found to be significant:

Table 1. One-way ANOVA of the significant items

Question	Sum of Squares	df	Mean Square	F	Sig.
01: quiet	4.828	2	2.414	3.447	.036
04: Worries a lot	4.385	2	2.193	3.178	.046
09: depressed	9.039	2	4.520	7.216	.001
12: Assumes the best about people	3.899	2	1.949	5.638	.005
16: tense	10.023	2	5.012	6.356	.003
17: irritable	3.729	2	1.864	3.533	.033
19: shy	9.762	2	4.881	5.356	.006
20: moody	6.347	2	3.174	4.448	.014
21: not self-confident	7.707	2	3.853	6.804	.002

As illustrated in table 1, the one-way ANOVA test results show that there were statistically significant differences in the perception of the robot user in nine out of 21 questions, namely Q01: quiet ($F(2)$ = [3.44], p = .036); Q04: worries a lot ($F(2)$ = [3.17], p = .046); Q09: depressed ($F(2)$ = [7.21], p = .001); Q12: assumes the best about people ($F(2)$ = [5.63], p = .003); Q16: tense ($F(2)$ = [6.35], p = .003); Q17: irritable ($F(2)$ = [3.53], p = .033); Q19: shy ($F(2)$ = [5.35], p = .006); Q20: moody ($F(2)$ = [4.44], p = .014); and Q21: not self-confident ($F(2)$ = [6.80], p = .002). As for the rest of the questions, no statistically significant differences were observed. After the ANOVA test, we ran a Tukey HSD post hoc test to determine which group means significantly differed from one another.

The results of Tukey's HSD Test for multiple comparisons shows that for the first question, the difference between the mean values of C1 and C3 was significant (p = .029, 95% C.I. = [.04, 1.01]). In this questionnaire item, which enquired whether the robot operator is someone who tends to be quiet, participants in C1 (m = 3.29, SD = .75) gave a significantly higher score compared to participants in C3 (m = 2.76, SD = .93). In question 09, the mean scores of C1 (m = 2.97, SD = .74) and C3 (m = 2.24, SD = .83) were significantly different (p = .001, 95% C.I. = [.27, 1.19]). In C1, participants rated the robot operator to be more depressed than C3. The post hoc test found two significant differences in question 12, one between C1 and C2 (p = .010, 95% C.I. = [.09, .77]), and one between C1 and C3 (p = .017, 95% C.I. = [.06, .74]). In this question, which enquired whether the robot user assumes the best in people, participants in C1 (m = 3.43, SD = .60) had the highest rating, while C2 (m = 3.00, SD = .50) and C3 (m = 3.03, SD = .63) participants specified a significantly lower score to the operator. Regarding question 16, which asked whether participants found the robot operator to be tense, there were significant differences between C1 and C3 (p = .004, 95% C.I. = [.19, 1.22]) and C2 and C3 (p = .014, 95% C.I. = [.10, 1.15]). In this questionnaire item, C1 received the highest score (m = 2.83, SD = .82), and C2 (m = 2.75, SD = .95) and C3 (m = 2.12, SD = .89) came second and third, respectively. Question 17 also produced a significant result between C2 and C3 (p = .025, 95% C.I. = [.05,.91]). In this item, which asked whether the robot operator is irritable, C2 (m = 2.78, SD = .60) participants rated the operator higher than C3 (m = 2.30, SD

= .88). Question 19 asked whether participants find the robot pilot to be a shy person. A significant difference was found between the mean scores of participants in C1 (m = 3.11, SD = .90) and C3 (m = 2.36, SD = .96) conditions (p = .005, 95% C.I. = [.20, 1.30]). In question 20, C1 and C3 (p = .010, 95% C.I. = [.12, 1.10]) had a significant difference regarding whether they consider the robot operator to be a moody person. The operator received higher scores from C1 (m = 2.91, SD = .91) in comparison to C3 (m = 2.63, SD = .75). As for question 21, there was a significant difference between the scores given by participants in C1 and C3 (p = .001, 95% C.I. = [.24, 1.11]). C1 (m = 2.89, SD = .75) participants regarded the robot pilot as someone who is less self-confident that participants in C3 (m = 2.21, SD = .82). Although the one-way ANOVA showed a significant result regarding question 04, the post hoc did not produce any significant difference between the mean values of the three conditions of the study.

Discussion

The aim of the study was to examine whether speed and shakiness of movement of a telepresence robot has any effects on the way the robot pilot's personality is perceived. Our findings suggest that when the telepresence robot is driven with a lower speed (1.5 km/h) in a smooth manner, the robot pilot is perceived as significantly *more quiet*, *more depressed*, *more tense*, *more moody*, *shyer*, and *less self-confident* that the pilot who drove the robot with the speed of 3 km/h. The slow robot pilot, however, was rated significantly higher in the item *assumes the best about people* as compared to the pilot in the fast and shaky robot conditions. As for the shaky condition, participants considered the robot pilot to be significantly *more tense* and *irritable* as compared to participants in the fast robot condition. The results show that participants in the smooth and slow condition judged the robot pilot as more neurotic in five aspects (i.e., depressed, tense, shy, moody, and less self-confident) and more introverted in one facet (i.e., quiet) compared to participants who saw the robot moving with a faster speed. However, when the robot was driven in a smooth and slow manner, the robot pilot was perceived as the most agreeable. Participants who saw the robot moving in a shaky manner considered the robot pilot to be more neurotic in two facets (i.e., tense and irritable) as compared to participants in the fast condition. Therefore, we can conclude that speed and quirkiness of the movement of the telepresence robot did impact people's perception of the personality of the robot pilot. Since perceived personality of interlocutors can have a big impact in interpersonal communications and judging future behaviors of individuals (Bremner et al., 2016), the way the personality of a remote person who uses a telepresence robot is perceived can potentially play a key role in how in remote relationships are established and remote individuals are judged. Thus, telepresence robot functionality matters and affects, to some extent, the success or failure of remote, mediated communication.

References

Bremner, P., Celiktutan, O., & Gunes, H. (2016). Personality perception of robot avatar tele-operators. In ACM/IEEE International Conference on Human Robot Interaction IEEE.

Cores-Sarría, L., Hale, B. J., & Lang, A. (2022). Danger, sex, and everything else: A comparison of camera angle and camera distance effects across pictures of varied emotional content. Journal of Media Psychology: Theories, Methods, and Applications, 34(1), 42–48. https://doi.org/10.1027/1864-1105/a000295

O. Daly-Jones, A. Monk, and L. Watts, “Some advantages of video conferencing over high-quality audio conferencing: fluency and awareness of attentional focus,” Int. Journal of Human-Computer Studies, vol. 49, no. 1, pp. 21–58, 1998.

B. Gleason and C. Greenhow, “Hybrid learning in higher education: The potential of teaching and learning with robot-mediated communication”, Online Learning, vol. 21, 4, 2017, pp. 159-176. Doi: 10.24059/olj.v21i4.1276

S. C. Herring, “New frontiers in interactive multimodal communication”, in A. Georgopoulou & T. Spilioti, eds., The Routledge handbook of language and digital communication, London: Routledge, in press, 2015. https://doi.org/10.4324/9781315694344

Hoffmann, L., Krämer, N. C., Lam-Chi, A., & Kopp, S. (2009, September). Media equation revisited: do users show polite reactions towards an embodied agent?. In International Workshop on Intelligent Virtual Agents (pp. 159-165). Springer, Berlin, Heidelberg. DOI: 10.1007/978-3-642-04380-2_19

Jakonen, T., & Jauni, H. (2022): Managing activity transitions in robot-mediated hybrid language classrooms, Computer Assisted Language Learning, DOI:10.1080/09588221.2022.2059518

Johannessen, L.E.F., Rasmussen, E.B., & Haldar. M. (2022). Student at a distance: exploring the potential and prerequisites of using telepresence robots in schools, Oxford Review of Education, DOI: 10.1080/03054985.2022.2034610

John, O.P. and Srivastava, S. (1999), “The big-five trait taxonomy: history, measurement, and theoretical perspectives” in Pervin, L. A., John, and O.P. (Eds), Handbook of Personality: Theory and Research, Vol. 2, Guilford, New York, NY, pp. 102-139.

Annica Kristoffersson, Silvia Coradeschi, and Amy Loutfi. 2013. A Review of Mobile Robotic telepresence. In: *Advances in Human-Computer Interaction*, Vol. 2013, Article ID 902316, 17 pages, 2013. DOI=10.1155/2013/902316

Kurtzberg, T. R., Kang, S., & Naquin, C. E. (2018). The effect of screen size and e-communication richness on negotiation performance. Group Decision and Negotiation, 27, 573-592. https://doi.org/10.1007/s10726-018-9574-x

K. Kuwamura, T. Minato, S. Nishio, and H. Ishiguro, “Personality distortion in communication through teleoperated robots,” in Proc of IEEE Int. Symp. on Robot and Human Interactive Communication. IEEE, Sep. 2012, pp. 49–54.

Lee, K. M. (2004). Why presence occurs: Evolutionary psychology, media equation, and presence. Presence: Teleoperators & Virtual Environments, 13(4), 494-505.

Newhart, V. A., Warschauer, M., & Sender, L. (2016). Virtual inclusion via telepresence robots in the classroom: An exploratory case study. The International Journal of Technologies in Learning, 23(4), 9-25.

B. O’Conaill, S. Whittaker, and S. Wilbur, “Conversations Over Video Conferences: An Evaluation of the Spoken Aspects of Video-Mediated Communication,” Human-Computer Interaction, vol. 8, no. 4, pp. 389–428, Dec. 1993.

Quintelier, E. (2014). The influence of the Big 5 personality traits on young people's political consumer behavior. Young Consumers, 15(4). DOI:10.1108/YC-09-2013-00395

I. Rae, L. Takayama, and B. Mutlu, "In-body experiences: embodiment, control, and trust in robot-mediated communication", Proceedings of the SIGCHI conference on human factors in computing systems (CHI '13), ACM, New York, 2013, pp. 1921–1930.

Reeves, B., Lombard, M., & Melwani, G. (1992, May). Faces on the screen: Pictures or natural experience. In annual conference of the International Communication Association.

Reeves, B., Nass, C.: The Media Equation: How People Treat Computers, Television, and New Media Like Real People and Places. Cambridge University Press, New York (1996)

Soto, C. J., & John, O. P. (2017). Short and extra-short forms of the Big Five Inventory–2: The BFI-2-S and BFI-2-XS. Journal of Research in Personality, 68, 69-81. http://dx.doi.org/10.1016/j.jrp.2017.02.004

Stoll, B., Reig, S., He, L., Kaplan, I., Jung, M. F., & Fussell, S. R. (2018). "Wait, can you move the robot?": Examining telepresence robot use in collaborative teams. In Proceedings of the 13th ACM/IEEE International Conference on Human Robot Interaction (HRI '18). ACM, Chicago. USA, 9 pages. DOI: 10.1145/3171221.3171243

A. Tang, M. Boyle, and S. Greenberg, "Display and presence disparity in Mixed Presence Groupware," in Proc. of Australasian User Interface Conf. Australian Computer Society, Inc., Jan. 2004, pp. 73–82.

K. M. Tsui, M. Desai, H. A. Yanco, and C. Uhlik, "Exploring use cases for telepresence robots", in Proceedings of the 6th international conference on Human-robot interaction (HRI '11), ACM, New York, NY, USA, 2011, pp. 11-18. DOI: 10.1145/1957656.1957664

Research on the shakiness of the telepresence robot


IEEE MetroXRAINE Milano 2023

2023 IEEE INTERNATIONAL CONFERENCE ON
Metrology for eXtended Reality, Artificial Intelligence and Neural Engineering
Milano, Italy / October 25-27, 2023

metrology
an Open Access Journal by MDPI

BEST PAPER IN APPLIED METROLOGY AWARD

TO

THE EFFECT OF PERFORMANCE FEATURES OF TELEPRESENCE ROBOTS ON PERSONALITY PERCEPTION OF THEIR USERS

AUTHORED BY

ALI ASADI, *UNIVERSITY OF SOUTHERN DENMARK, DENMARK*
KERSTIN FISCHER, *UNIVERSITY OF SOUTHERN DENMARK, DENMARK*

MILANO, OCTOBER 26, 2023

PASQUALE ARPAIA MetroXRAINE 2023 General Chair	LOREDANA CRISTALDI MetroXRAINE 2023 General Chair	LUCIO T. DE PAOLIS MetroXRAINE 2023 General Chair	MARCO SACCO MetroXRAINE 2023 General Chair

Ali Asadi and Kerstin Fischer at the University of Southern Denmark have conducted research on how the speed and shakiness of telepresence robots affect the way the local participants perceive the personality of the remote robot users. This research is based on the assumption that the movement of the telepresence robot can influence the impression formation and social interaction. The research has used a controlled experiment with 100 participants, who watched a video of a telepresence robot moving with different speed and shakiness levels. The participants rated the personality of the remote user based on the Big Five personality questionnaire. The research has found that the speed and shakiness of the telepresence robot have significant effects on the perceived personality of the remote user, especially on the dimensions of agreeableness and neuroticism.

This research has received the best paper award at the IEEE MetroXRAINE 2023 conference, which is a prestigious event that showcases the latest developments and innovations in mixed reality and artificial intelligence.