Subjective Experience of Interacting with a Social Robot at a Danish Airport

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Introduction

This study originates from a social robot research project at Aalborg University with the aim of developing and implementing robots in a variety of contexts. This raises questions on how social robots should behave and which variables in a social robot is important. When important variables are eliciteted scales can be developed from these variables which can be use to test a social robot. The study consists of two tests, one where variables are elicitated and one where the scales are used to evaluate the robot, so possible correlation can be detected.

Methods

To investigate which variables are important when interacting with social robots and to check for correlation on scales designed based on these variabels two tests are set up in Aalborg Airport (AAL). Both tests was conducted on Danish Travellers who interacted with a *Double* robot shown on figure 1. In the first test subjects was asked to participate in a semi-structured interview about their first impressions after the interaction and in the second test subjects were asked to rate their interactions on the developed scales. The *Double* robot was remotely controlled via a computer and a present controller. On the screen a developed wireframe to help with wayfinding in AAL was presented.

Figure 1. *Double*'s front and profile.

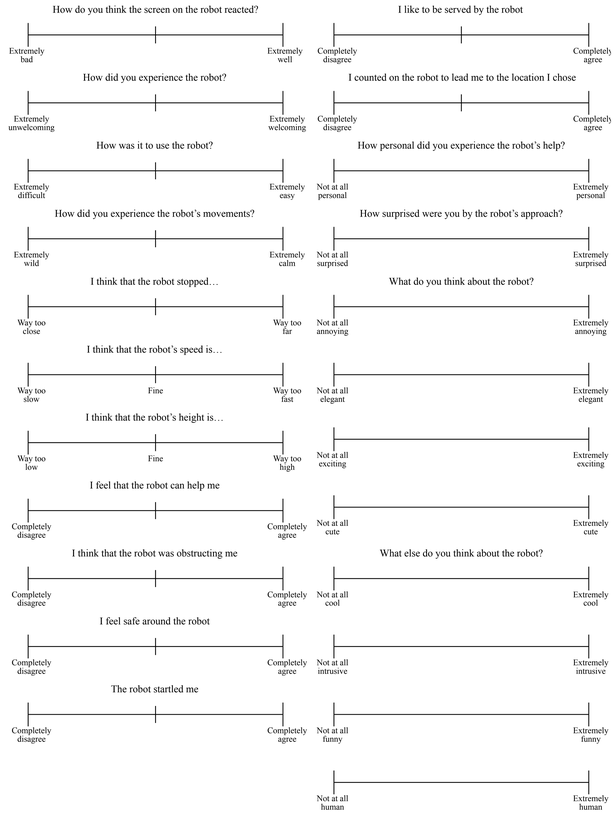
The subjects were recruited by the robot, which provides a more ecological and undisturbed interaction between robot and subject. The robot approached potential subjects after the security check and asked to help travellers with wayfinding. If travellers wanted help, they were presented with four wayfinding options: Food, Shopping, Toilets or Gate information. After the interaction the robot led subjects to an interviewer.

Data Processing From the first test the interviews and observations were coded into affinity notes and an affinity diagram was made. This affinity diagram is pivotal in eliciting the variables that affect HRI, and thereafter in creating the scales to be used for further work. 567 affinity notes were sorted into 10 green categories with individual subcategories.

From the second test **Beskriv kort den databehandling**

Results - Elicitation of variables

From the first tests 23 variables were elicitated, which led to 17 scale questions answered on 23 VAS scales (see tabel 1 and figure 2). Scale questions (SQ) are as stated below and is answered on appurtenant scales (S):
Three different types of VAS are used with the desribed labels (see figure 2). Scales 1-5 and 8-13 have a middle point in the middle but no label, scales 6 and 7 have a middle point with a label and scales 14-23 have no middle point.



Results - Scale Testing

Conclusion

This research conducted in this study reveals that there are at least 23 variables that danish travellers find important when interaction with a social robot.

Acknowledgements

Key references