**Social Human-Robot Interaction: Investigating the Modulating Aspects of a Robots' Sociability on its Degree of Embodiment**

Scripted conversation

*Speech elements*: neutral, praise, empathy, politeness, solidarity and humor (laughing).

*Gestures*: neutral, positive and negative. Gestures are indicated by the \*Gesture\* mark-up.

*Participants*: participant and more embodied robot or less embodied robot.

*Description*: Participant will get a version of this script where the responses given by the robot are left out. Participants are asked to convey the sentences as natural as possible to their conversational partners.   
*Script*:

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| # | Participant | Less embodied robot | More embodied robot |
|  | The robot will start | Hi, \*neutral wave\*. Let’s start the conversation. (Neutral)  What is your name? | Hi, \*Energetic wave\*. I’m looking forward to having a conversation with you. (Polite)  What is your name? |
|  | Hi, nice to meet you. My name is \*say your name\* | How are you? | How are you?  \*Open hand gesture\* |
|  | I’m allright… (slightly sad) | \*1 hand moves\*.  What’s the matter? | Oh, \*1 hand moves while head goes down\*.  What’s the matter? |
|  | It’s really cold. I don’t like the winter. Especially when I have to be outside a lot. | It can get quite cold indeed. Robots cannot feel cold. (Neutral)  But there are also good things to the winter season, right? | It can get quite cold indeed. I don’t like that either. (Solidarity) \*Shake head\*  But there are good things to the winter season, right? |
|  | The only good thing about winter is Christmas and New Years Eve.Do you have a new year’s resolution? | Besides a better understanding of human language I want to learn new movements.  \*Neutral/low-energy 1 hand moves\*  Maybe even join the robot football team.  Do you play a sport? | Besides a better understanding of human language I want to learn new movements.  \*Energetic hands go up\*  Maybe even join the robot football team.  Do you play a sport? |
|  | I play volleyball and go for a jog now and then. I have my practice on Wednesday and the game is on Sunday. | It’s good to keep fit. (Neutral)  \*Nod head once\*  Do you have a new year’s resolution? | That is really good of you. (Praise)  \*Nod head twice\*  Do you have a new year’s resolution? |
|  | I like doing things with my friends. For example I would like to visit the theater more often. | OK (Neutral)  What do you want to see there? | Ah how nice of you (Praise).  \*Open hands\*  What do you want to see there? |
|  | A comedian or other comedy shows, like Najib Amhali *or* Theo Maassen. They always make me laugh! | That is nothing for me. (Neutral/ego-centric)  Robots can’t understand humor. (Neutral)  If you tell a joke I might be able to learn how to understand it (Neutral) | That sounds cool. (Praise-ish)  Unfortunately robots can’t understand humor. (Polite-ish)  Can you please tell a joke I might be able to learn how to understand it. (Polite) |
|  | OK, sure. Here it comes: ‘Dear Algebra  please stop asking us to find your x,  she is not coming back’ | Haha (textual).  I have one to Fool me once, shame on you. Fool me twice, shame on me. Fool me three hundred fifty thousand times, you're a weatherman. | \*Laugh\*(Real laugh)  I have one to Fool me once, shame on you. Fool me twice, shame on me. Fool me three hundred fifty thousand times, you're a weatherman. |
|  | Good one! Although you aren’t able to understand humor you can act like you can. You could be an actor! | (No reaction to compliment)  Maybe I should become an actor like Benedict Cumberbatch.  He plays Alan Turing in the imitation game. (Neutral)  Do you know that movie? | \*Happy reaction to compliment\*  Maybe I should become an actor like Benedict Cumberbatch.  He plays my hero, Alan Turing, in the imitation game. (Personal)  Do you know that movie? |
|  | Yes I do. I’ve heard that it is nominated for a lot of Oscars this year. Let’s hope Benedict Cumberbatch wins an Oscar then. | \*Neutral gesture – hand gesture\*  Yeah I hope so! (Neutral)  What is your favorite movie for the Oscars this year? | \*Happy gesture – arm is air\*  Yeah let us hope so! (Use of ‘us’ to position robot socially closer)  What is your favorite movie for the Oscars this year? |
|  | I totally loved Boyhood. I saw that movie in the cinema with a group of friends. We reviewed the movie over a glass of wine in a bar afterwards. Coming to think of it: do you need to drink or eat sometimes? | I only need electricity to function. So I can get hungry sometimes. I heard humans when hungry they go like this:  \*Angry sound\*.  Is that true? | Good question! (Praise)  I only need electricity to function. So I can get hungry sometimes. I heard humans when hungry they go like this:  \*Angry sound with hand angry in the air gesture\*.  Is that true? |
|  | Yes that is so true! Humans can get very cranky when they are hungry. | Another thing humans get frustrated over is when I can’t fully understand them. (No gesture to emphasize sadness)  That is the goal of this exercise: to increase my speech recognition capabilities. (Neutral)  When this is done I need a break!  Do you have a holiday planned soon? | Another thing humans get frustrated over is when I can’t fully understand them. \*Head down\* (Sad)  That is why we do this exercise. You are really helping me to increase my speech recognition capabilities.  (‘We’, Praise-ish by begin thankful)  When this is done I need a break! \*Sweeping sweat from forehead\* Do you have a holiday planned soon? |
|  | I know what you mean! I have a long period of studying ahead of me before I can go on a holiday again. I wish I could because I also need a break. | These months are tough. A lot of hard working. (Neutral)  Do you have something fun planned this week to compensate the hard work? | It has been a month before we had a good break isn’t it? I know what you mean. These months are tough. (Empathy)  Do you have something fun planned this week to compensate the hard work? |
|  | Luckily I do, thanks for asking. I will go shopping tomorrow. I need a new sweater, you know, given this cold. Do you ever go shopping? | I sometimes browse for new software upgrades and if they are useful I buy them.  \*Hand gesture\*  That can be called shopping. (Neutral)  \*Gong\*  That was the gong. The time is up. (Neutral)  Thank you for helping me. | I sometimes browse for new software upgrades and if they are useful I buy them.  \*Happy gesture – hands in the air\*  I think we can call that shopping! (‘We’)  \*Gong\*  Oh no that was the gong. Our time is up. I enjoyed this conversation very much. Thanks so much for your help!  (‘Our’ + Thankful) |
| End | No problem, glad I could help! | You can go back to the other desk and complete the questionnaires. When you are done you can go outside where the experiment leader will wait for you. | Idem as neutral |
| Dev | \*Off-script\* | I’m sorry I did not quite get that. Could you go back to the script so that I can improve my speech recognition even more? | Idem as neutral |