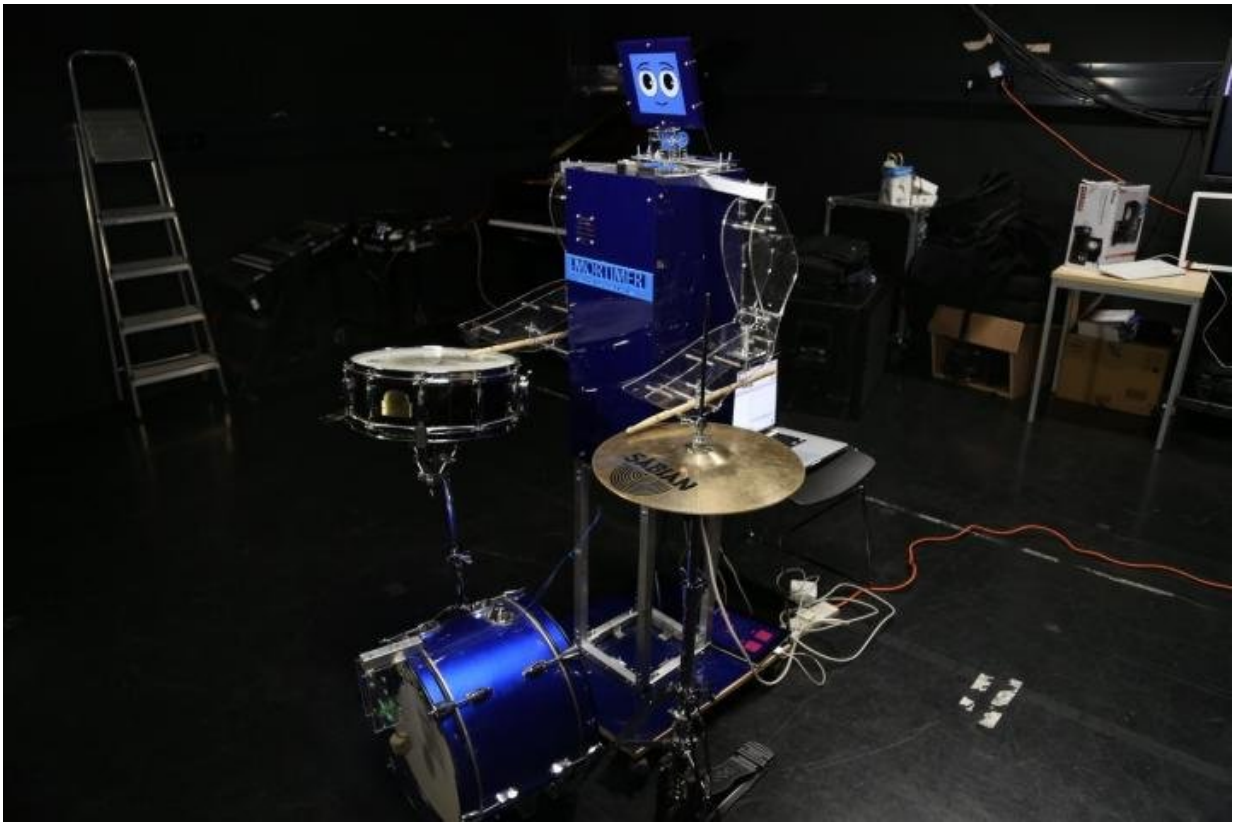
Robot drummer posts pictures of jamming sessions on Facebook

December 20 2017



Mortimer. Credit: QMUL

The study, by researchers at Queen Mary University of London, looks at how humans interact with robots over time and in particular how social media can enhance that relationship.

Relationships between humans and robots require both long term engagement and a feeling of believability, or social presence, towards the robot. The researchers contend that music can provide this engagement and developed a robotic drummer, called Mortimer, who is able to compose music responsively to human pianists in real-time.

To help trigger a sense of believability, the researchers extended Mortimer's capabilities to allow him to take pictures during sessions and post them with a supporting comment to Facebook while also tagging the keyboard player.

The study was published in *IEEE Transactions on Cognitive and Developmental Systems*.

Lead author Louis McCallum, from Queen Mary's School of Electronic Engineering and Computer Science, said: "We'd previously uncovered new and exciting findings that suggested open-ended creative activities could be a strong bedrock to build long-term human-robot relationships. This particular research sought to examine whether the relationships that were initially developed face-to-face, but under lab conditions, could be extended to the more open, but virtual, realm of social media."

During the study, two groups of participants were chosen. One group was sent a Facebook friend request from Mortimer allowing the robot to tag them in pictures taken during the session. The other group was not sent a request and had no contact with the robot outside of the sessions.

Participants took part in six weekly sessions in a controlled studio environment and were instructed to stay for a minimum of 20 minutes but could optionally stay for up to 45.

They were greeted by Mortimer, who communicates via speech synthesis software, and used a tablet to interact with him.

During each session, a picture of Mortimer and the participant playing was taken automatically by a webcam in the lab and an accompanying comment was generated. In some instances, the participants also took a selfie with Mortimer and posted it to their own Facebook accounts.

From the Facebook data, there were considerably more 'likes' for posts made by a user as opposed to one of Mortimer's posts that the user was tagged in.

Dr McCallum said: "One of the most interesting findings was that posts by human participants about the music sessions between them carried significantly more weight within their networks than posts by the robot itself. This suggests a discerning approach to generated posts that is especially relevant in today's world of social media bots, automated content and fake news."

The researchers found that the time spent with the robot increased over the study but session length for the group who were Facebook friends with Mortimer reduced over time. They suggest this may be because the participants had additional contact with Mortimer outside the sessions.

Co-author of the study Professor Peter McOwan added: "There are signs of high engagement, such as high self-reported repeat interaction, across all participants that strengthen previous results about the use of music as a good base for improving long-term human-robot relationships. But we found the effects of extending the relationship into the virtual world were less pronounced than expected. This doesn't mean that virtual interaction doesn't help, but maybe the quality of the interaction needs to be improved."

More information: Louis McCallum et al. Extending Human-Robot Relationships Based in Music with Virtual Presence, *IEEE Transactions on Cognitive and Developmental Systems* (2017). DOI:

PHYS.ORG

10.1109/TCDS.2017.2779218

Provided by Queen Mary, University of London

Citation: Robot drummer posts pictures of jamming sessions on Facebook (2017, December 20) retrieved 4 July 2024 from https://phys.org/news/2017-12-robot-drummer-pictures-sessions-facebook.html

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.