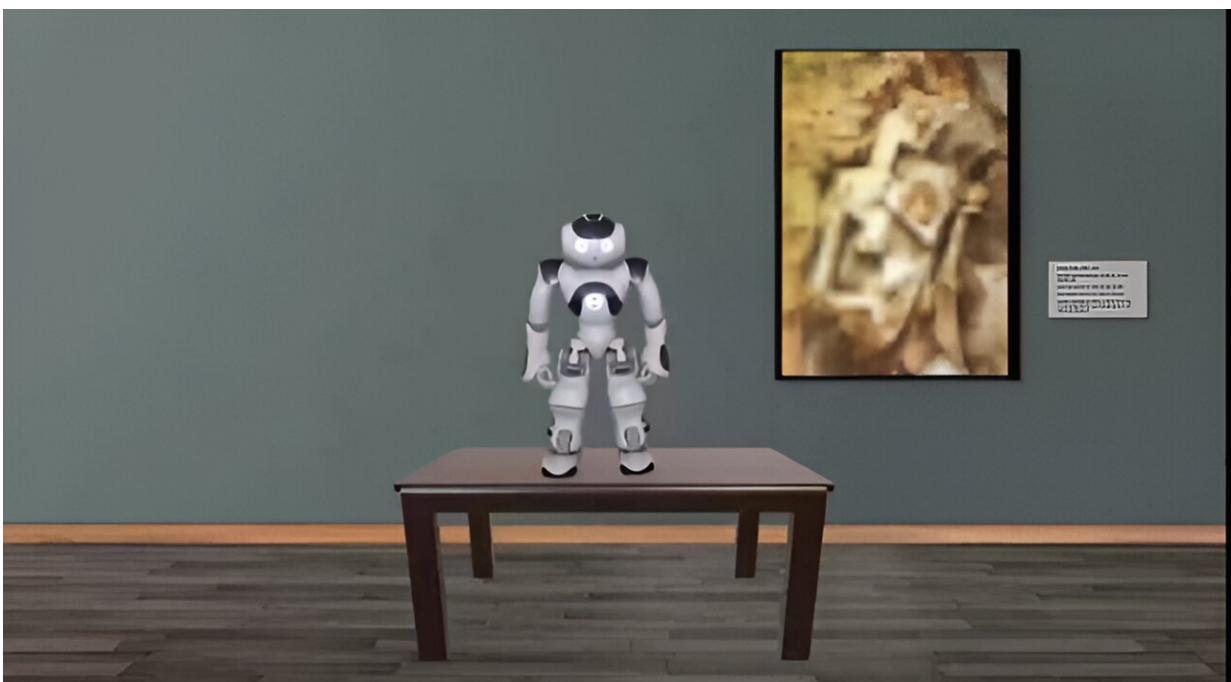


Speaking in a local accent might make social robots seem more trustworthy and competent, say scientists

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An image of the robot used for the experiments. Credit: Katharina Kühne et al.

Social robots can help us with many things: teaching, learning, caring. Because they're designed to interact with humans, they're designed to make us comfortable—and that includes the way they talk. But how should they talk? Some research suggests that people like robots to use a

familiar accent or dialect, while other research suggests the opposite.

"Surprisingly, people have mixed feelings about robots speaking in a [dialect](#)—some like it, while others prefer standard [language](#)," said Katharina Kühne of the University of Potsdam, lead author of the study in *Frontiers in Robotics and AI*. "This made us think: maybe it's not just the robot, but also the people involved that shape these preferences."

Talking the talk

Many factors affect people's comfort levels with [social robots](#). The robots work best when they appear more trustworthy and competent, and a human-like speaking voice contributes to this. But whether that speaking voice uses a dialect or a standard form of a language could impact the perception of its trustworthiness or competence. Standard language use is often viewed as more intelligent, but speaking in a dialect that is considered friendly or familiar can be comforting.

"Imagine a robot that can switch to a dialect," said Kühne. "Now, consider what's more critical in your interaction with a robot: feeling a connection (think of a friendly chat in an elderly home) or perceiving it as competent (like in a service setting where standard language matters)."

Ich bin ein Berliner

To test the impact of dialect use on robot acceptance, the scientists recruited 120 people living in Berlin or Brandenburg to take an [online survey](#). They asked participants to watch videos in which a robot using a male human voice spoke in either standard German or the Berlin dialect, which is considered working-class and is sometimes used by media to give an informal, friendly impression.

"The Berlin dialect is generally understandable to most German speakers, including those who are not native German speakers but are fluent in the language," explained Kühne.

The scientists asked participants to rate the robot's trustworthiness and competence, and to fill out a demographic questionnaire including age, gender, how long they'd lived in Berlin, how well they spoke the Berlin dialect, and how often they used it. The survey automatically recorded the type of device that participants used to view the videos—a phone, a tablet, or a computer.

Speaking the same language

There was a clear link between trustworthiness and competence, with higher perceived competence predicting higher perceived trustworthiness. In general, the respondents preferred a robot speaking standard German. However, respondents who were more comfortable with the Berlin dialect preferred the robot speaking dialect.

"If you're good at speaking a dialect, you're more likely to trust a robot that talks the same way," said Kühne. "It seems people trust the robot more because they find a similarity."

Respondents who were using a phone or tablet rather than a computer to view the videos also tended to give lower ratings to the robot speaking standard German. The scientists speculate that this may be because small, [portable devices](#) meant the respondents had more distractions from the videos and a higher cognitive load, so the trust signal of the standard German had less of an impact.

"This leaves us without clear evidence for or against the idea that people facing challenges might find more comfort in social robots speaking in a familiar dialect," said Kühne. "But if a robot is using the standard

language and it's essential for people to perceive it as competent in the interaction, it might be beneficial to minimize cognitive load. We plan to dive deeper by testing cognitive load during conversations."

The scientists pointed out that speaking or understanding a dialect can be part of an in-group identity, allowing the robots to take advantage of in-group bias: people tend to prefer robots that are somehow like them. However, the prestige of a dialect may affect how it's received by people hearing it.

"Context matters a lot in our conversations, and that's why we're planning to conduct more studies in real-life situations," said Kühne.

More information: "Ick bin een Berlina": Dialect proficiency impacts a robot's trustworthiness and competence evaluation, *Frontiers in Robotics and AI* (2024). [DOI: 10.3389/frobt.2023.1241519](https://doi.org/10.3389/frobt.2023.1241519)

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