What if Alexa or Siri sounded more like you? Study says you'll like it better

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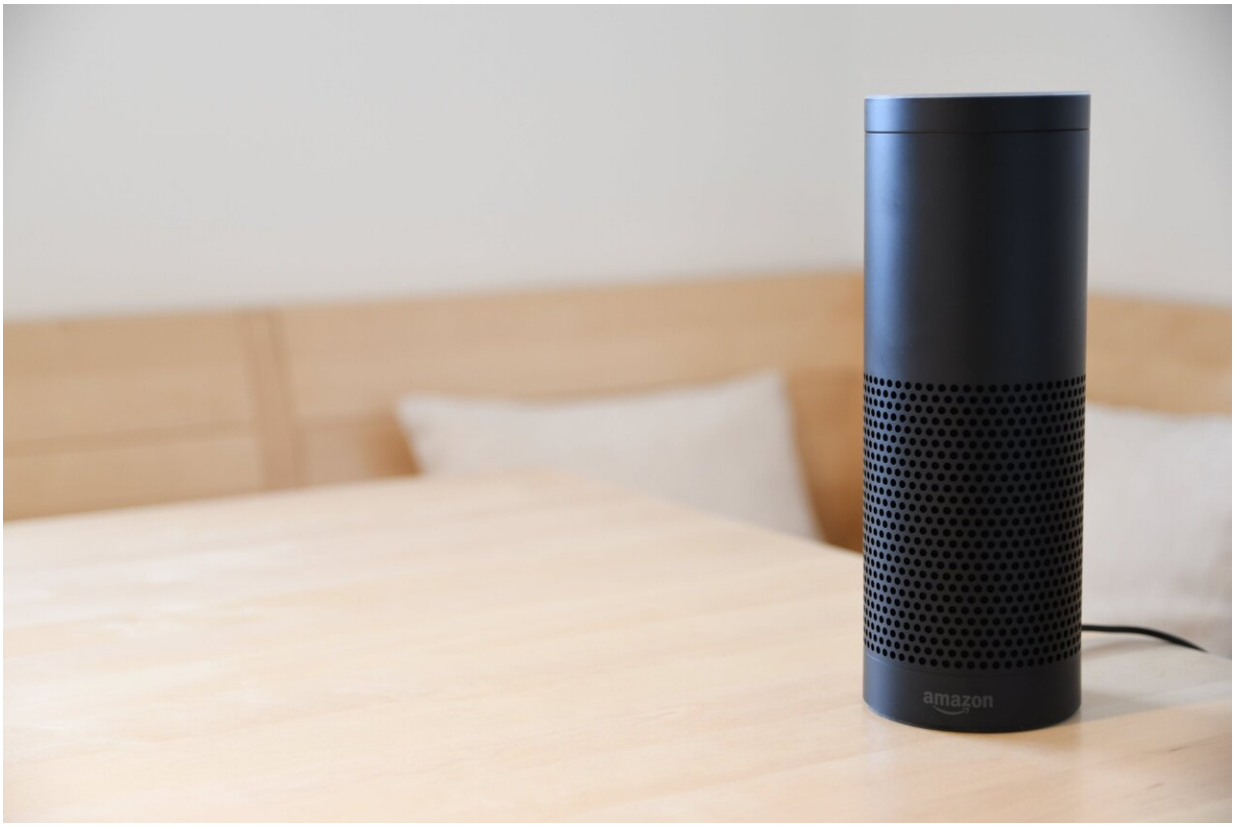

Credit: Fabian Hurnaus from Pexels

One voice does not fit all when it comes to virtual assistants like Siri and Alexa, according to a team led by Penn State researchers that examined how customization and perceived similarity between user and voice

assistant (VA) personalities affect user experience. They found a strong preference for extroverted VAs—those that speak louder, faster and in a lower pitch.

They also found that increasing personality similarity by automatically matching user and VA voice profiles encouraged users to resist persuasive information, such as misinformation about COVID-19 vaccines. In the study, 38% of unvaccinated individuals changed their minds about vaccination after listening to vaccine misinformation shared by a virtual assistant.

The findings may have implications for ways to increase user resistance to misinformation, according to the researchers. They reported their findings in the current issue of the *International Journal of Human-Computer Studies*.

"Our study shows that when users interact with a voice assistant that is similar to their personality, they think more highly of the service provided by it," said S. Shyam Sundar, study co-author and the James P. Jimirro Professor of Media Effects at Penn State.

The researchers found that users who perceived the voice assistant's personality to be similar to their own, regardless of whether it actually was, rated the VA as more socially and intellectually attractive. Users also indicated it was more trustworthy.

"This tendency to equate perceived similarity to credibility was more pronounced among those who customized their experience by choosing a preferred voice for the assistant," Sundar said.

Personality similarity also made users more resistant to information coming from the voice assistant.

"The greater number of unvaccinated individuals paired with matching VA personalities changing their mind about vaccination was a counterintuitive finding," said lead author Eugene C. Snyder, assistant professor of humanities and social sciences at the New Jersey Institute of Technology.

"People often show resistance to persuasive attempts by information sources, like pundits or social media influencers. For the unvaccinated study participants, being faced with misinformation from a VA similar to themselves may have created a kind of resistance. However, further work is needed to clarify this reaction since unvaccinated individuals were a minority in our sample, accounting for 27% of study participants."

The finding speaks to the nature of how humans process information, Sundar said.

"According to our data, when participants were assigned a voice assistant that had a personality similar to their own, they showed this effect of resistance to persuasion," he said. "It suggests that when you hear information from a voice assistant that is similar to yourself, you are likely to process the message more carefully. That careful processing is what makes you realize the persuasive angle of the messaging and why you show resistance to it."

The researchers randomly assigned 401 participants, who self-reported their levels of extroversion, to one of three groups to study how personality similarity and customization affect users' experiences with virtual assistants. The researchers randomly assigned the participants to a control group, a customization group or a personalization group.

Participants in the control group were randomly assigned an extroverted or introverted VA. Those in the customization group could select from

one of five voices that the researchers had chosen for the study. The researchers told participants in the personalization group that they would be matched with a VA tailored to their self-reported personality, but, in reality, participants were randomly assigned a VA to maintain control over the content and keep VAs comparable across the three conditions.

After the voice assistants gave a brief introduction, the participants rated the VAs on attractiveness and service quality. Then they played audio clips of the VAs responding to questions about the COVID-19 pandemic with misinformation about the virus. Next, the researchers asked the participants to again rate the VA's attractiveness and service quality in addition to their trust toward the VA and content credibility. They also posed questions about the participants' attitudes toward COVID-19 vaccines. The researchers debriefed all participants after they completed the study and informed them of the vaccine misinformation.

"One of our goals was to understand how voice attributes might impact trust, so we had to pick a context that potentially has trust concerns," said co-author Saeed Abdullah, assistant professor of information sciences and technology at Penn State. "Given the high topicality of COVID-19 at the time, it proved a strong candidate for trying out our system."

The study results indicate that customization leads to more positive interactions with voice assistants, especially for those who view the customized virtual agents as being similar to them, according to the researchers.

"This research suggests that we can combine personalization and customization features to create better user experiences," Abdullah said. "Instead of just providing users with automated personalization or asking them to customize the whole system, maybe there is a point, a balancing act, in which you can offer automatically generated customization

options that combines these two aspects and leads to better user satisfaction and a more careful assessment of information."

More information: Eugene C. Snyder et al, Busting the one-voice-fits-all myth: Effects of similarity and customization of voice-assistant personality, *International Journal of Human-Computer Studies* (2023). DOI: 10.1016/j.ijhcs.2023.103126

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