

University of Louisville

ThinkIR: The University of Louisville's Institutional Repository

Undergraduate Arts and Research Showcase

Undergraduate Research

Spring 2020

Phone a Friend or Ask Alexa? Children's Trust in Voice-Activated Devices

Hailey M Streble
hailey.streble@louisville.edu

Laura K. Gregg
laura.gregg.1@louisville.edu

Evonie L. Daugherty
evonie.daugherty@louisville.edu

Lauren N. Girouard
lauren.girouard@louisville.edu

Judith H. Danovitch
j.danovitch@louisville.edu

Follow this and additional works at: <https://ir.library.louisville.edu/uars>



Part of the [Developmental Psychology Commons](#)

Recommended Citation

Streble, Hailey M; Gregg, Laura K.; Daugherty, Evonie L.; Girouard, Lauren N.; and Danovitch, Judith H., "Phone a Friend or Ask Alexa? Children's Trust in Voice-Activated Devices" (2020). *Undergraduate Arts and Research Showcase*. 31.

<https://ir.library.louisville.edu/uars/31>

This Book is brought to you for free and open access by the Undergraduate Research at ThinkIR: The University of Louisville's Institutional Repository. It has been accepted for inclusion in Undergraduate Arts and Research Showcase by an authorized administrator of ThinkIR: The University of Louisville's Institutional Repository. For more information, please contact thinkir@louisville.edu.

BACKGROUND

- Voice-activated devices such as Google Home, Siri and Alexa are in many family homes and children are interacting with them (Common Sense Media VA Survey, 2019).
- Several studies show that children prefer human informants and some robot informants who are knowledgeable, accurate, and who have positive personality traits.
- It is unclear if children treat voice-activated devices the way they treat human informants.

CENTRAL RESEARCH QUESTIONS

- Do children trust voice-activated devices and people to provide accurate information?
- Do children's trust in informants change with the child's age or by the question type?

METHODS

Participants:

40 4- and 5-year-olds (20 females, $M_{age} = 5.05$, $SD = .49$)
40 7- and 8-year-olds (22 females, $M_{age} = 7.98$, $SD = .66$)

Procedure:

Introduction of Informants:

Participants were told they were going to play a question game with the experimenter's good friend, Heather, joining from a video call as well as with a voice-activated device called Anu.



Question Types:

The experimenter asked three questions of each informant across three categories: **stable**, **transient**, and **personal**. Both Heather and Anu answered nine different questions.

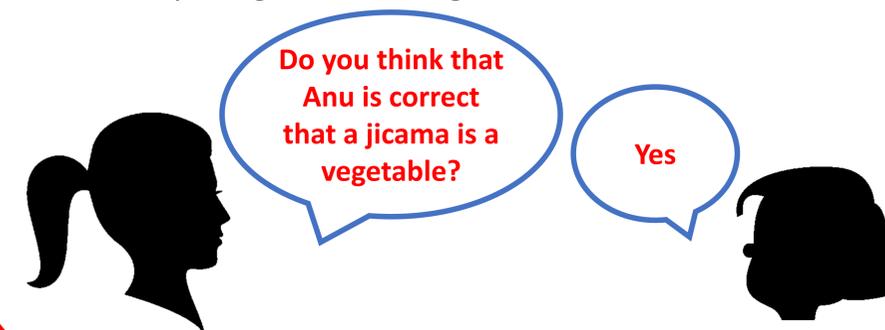
METHODS (continued)

Question Type:	Stable= facts that do not change	Transient= timely information	Personal=information about the researcher
Question Example:	What is a jicama?	Which state had the most rain yesterday?	What is my favorite color?
Response Example from Heather/Anu:	A jicama is a vegetable.	Hawaii had the most rain yesterday.	Your favorite color is purple.



Endorsement of Informant:

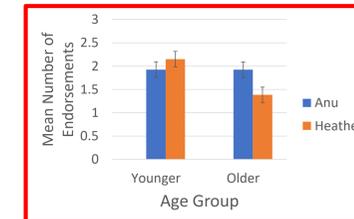
After Anu or Heather gave an answer, the participant was asked whether they thought the answer given was correct or not.



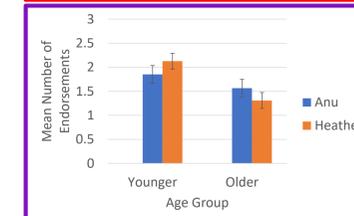
OVERALL RESULTS

- There was a significant main effect of age where younger children were generally more trusting of both informant types than older children, regardless of question type ($p < .001$).
- There was a significant three-way interaction between informant type, question type, and age group ($p = .001$).

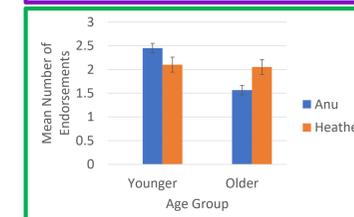
RESULTS BY QUESTION TYPE



Stable: Older children were significantly more likely to trust Anu than Heather ($p = .008$). Younger children did not show a significant preference ($p = .117$).



Transient: Neither age group showed a significant preference for either informant ($p = .352$; $p = .054$)



Personal: Younger children trusted Anu significantly more than Heather ($p = .025$). Older children trusted Heather significantly more than Anu ($p = .015$).

DISCUSSION

- Younger children were more likely to trust information than older children, regardless of the type of informant.
- Older children differentiated between question types, and were better able than younger children to recognize when a voice-activated or human informant would give a correct answer.
- We speculate that older children better understand that voice-activated devices are connected to the internet and can provide accurate answers to certain questions.
- These findings suggest that younger children may benefit from guidance from adults to understand and use voice-activated devices.

REFERENCES & ACKNOWLEDGEMENTS

- Common Sense Media. (2019). What's That You Say? Smart Speakers and Voice Assistants Toplines. Retrieved from <https://www.common sense media.org/smart-speakers-and-voice-assistants>
- Special thanks to the families that participated and to Sacred Heart Preschool and AJ Preschool. Funding for this work was provided by a Mentored Undergraduate Research and Creative Activities Grant.