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amazon alexa + linked open data: theorizing concerning relationships between (surveillant) smart-home voice assistants and linked open data

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by Michelle Nitto

(1) how does Alexa (technically) work?

- "wake word" + voice recordings in the cloud
- voice interaction requires: alexa skill + amazon lambda
- AWS server (smart home skill adapter)
- Alexa skills (90,000+ as of 2018)

(2) yes, Alexa is probably always listening (or is technically able to).

People also ask

How do I stop Alexa from listening?

Can Alexa be hacked?

Does Alexa listen in on conversations?

Does Alexa record you all the time?

screenshot of google search "is alexa always listening" 9/9/2019

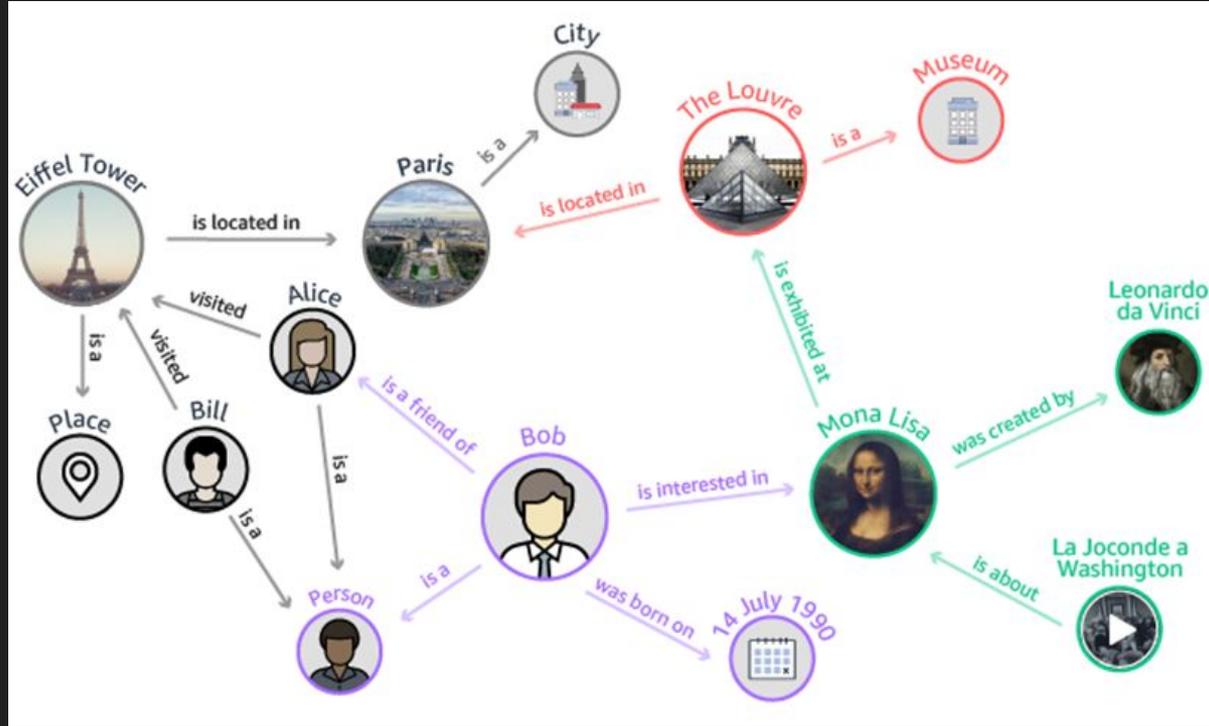# (3) "amazon alexa & the aesthetics of whiteness" (Phan, 2019)

"All the user need do is ask and the white-voice delivers." (Phan, 2019, p. 30)

(4) conversational AI + linked open data (LOD)

linked open data: structured and machine readable data released under an open license.

- Transliteration capabilities + language pairs in wikidata
- Alexa Prize for open domain dialog (using LOD)

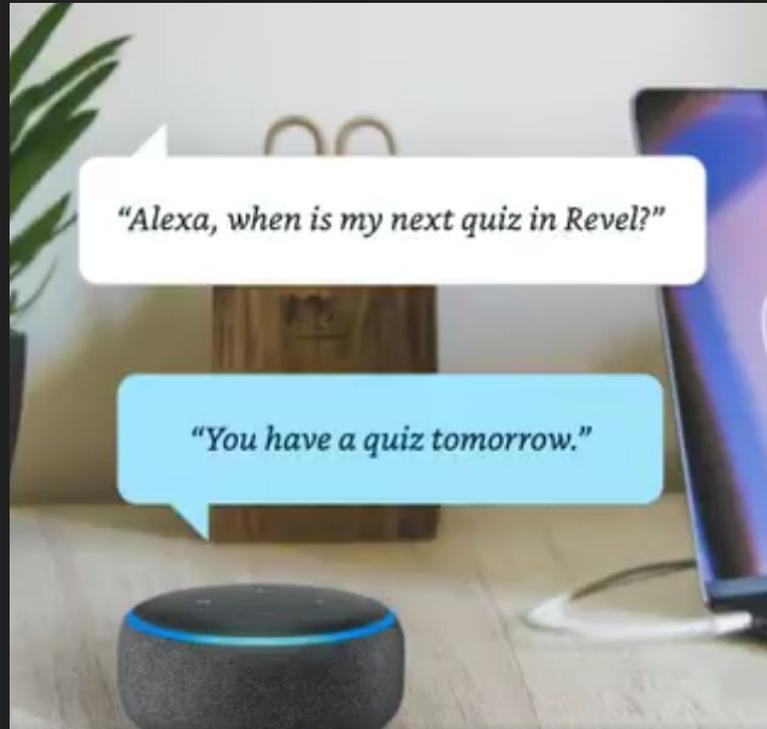# (5) amazon metaphacts - knowledge graph

Sengupta, K. (2019) "Exploring Knowledge Graphs on Amazon Neptune Using Metaphactory." *AWS Partner Network (APN) Blog.*

(6) amazon alexa + healthcare industry

- Alexa skills kit + patient health records (HIPAA)
- Voice monitoring via audio interruptions
- Healthcare companies + surveillance of workers

(7) education: amazon "revel" skill (Pearson)

(8) discussion

★ What effects could amazon alexa pairing with textbook publishers have on library collections & services?

★ How is amazon's usage of linked open data for Alexa's skills and services at odds with ethical open access to knowledge?

★ Does amazon developer's usage of linked open data remind you of any other commercial entity extracting publicly licensed information for profit?

(9) works cited:

Hasse, P. (2017). "Alexa, ask wikidata! Voice interaction with knowledge graphs using Amazon Alexa" *International Semantic Web Conference*.

Khatri, C. (2018). "Advancing the state of the art in open domain dialog systems through the alexa prize" *2nd Proceedings of Alexa Prize.*

Lei, X. et al. (2018). "The Insecurity of Home Digital Voice Assistants - Amazon Alexa as a Case Study." *arXiv*.

Lopatovska, I. et al. (2018). "Talk to me: Exploring user interaction with the Amazon Alexa." *Journal of Librarianship and Information Science.*

Merhav, Y. & Ash, S. (2018). "Design challenges in named entity transliteration" *Proceedings of the 27th International Conference on Computational Linguistics.*

Rae-Dupree, Janet (2019). "Health: Protection vs. privacy: How much info should 'Doctor Alexa' have access to?" *Palm Beach Post.*

Simonite, T. & Gross, T. (2019). "Encyclopedia Automata" *Wired*.

Sengupta, K. (2019) "Exploring Knowledge Graphs on Amazon Neptune Using Metaphactory." *AWS Partner Network (APN) Blog.*

Simonite, T. & Gross, T. (2019). "Encyclopedia automata" *Wired.*