Not Like Us, Hunty:

Measuring Perceptions and Behavioral Effects of Minoritized Anthropomorphic Cues in LLMs

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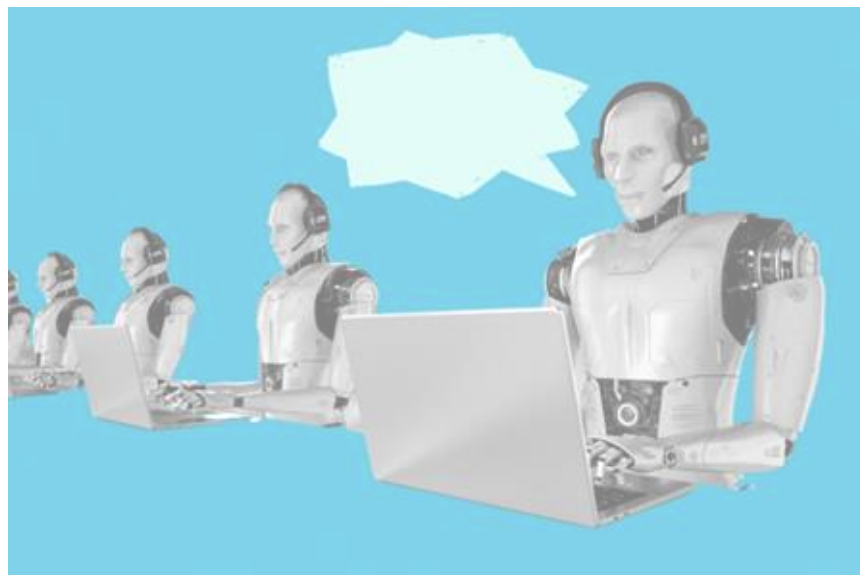
Chrysoula Zerva

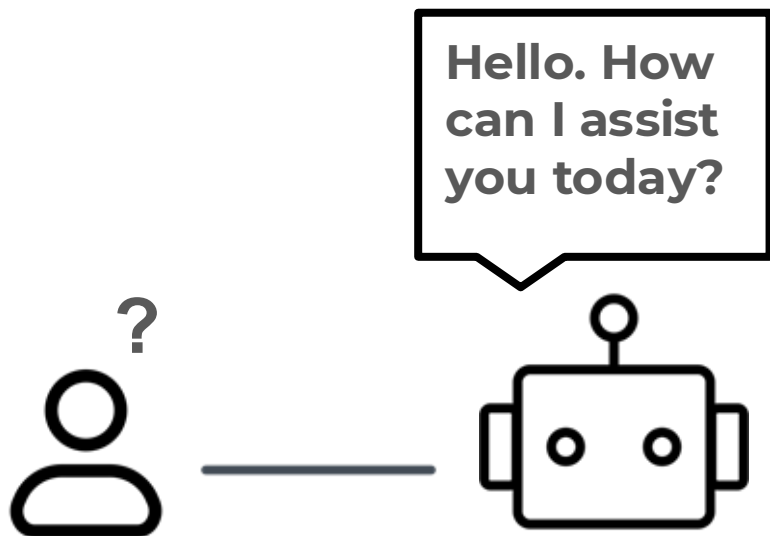Kaitlyn Zhou

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AI systems are exciting...
but the language they use often isn't.

# AI systems are exciting...
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AI systems are exciting...
but the language they use often isn't.
what if we anthropomorphize & personalize AI systems?

an·thro·po·mor·phize - attribute human characteristics or behavior to a god, animal, or object
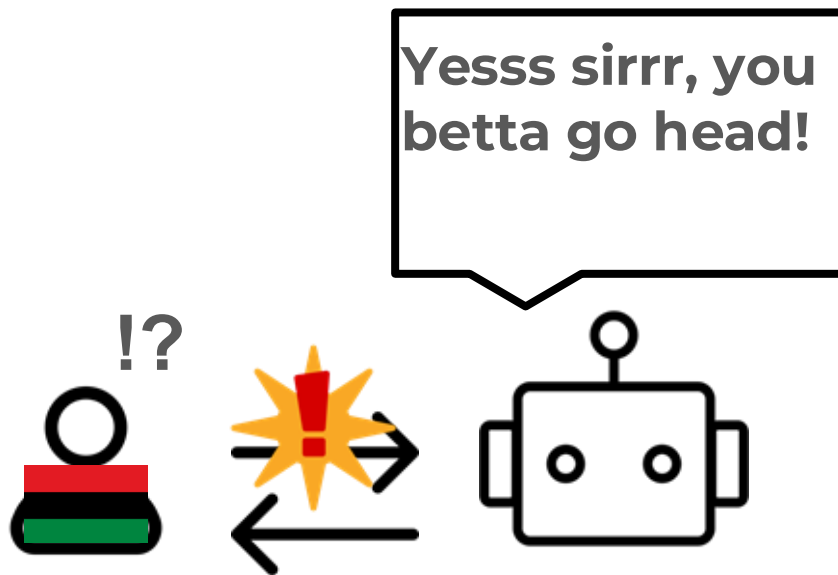
what if we **anthropomorphize** & **personalize AI systems?**

what if we **anthropomorphize** & personalize AI systems especially for a minority user?

> **Yesss sirrr, you betta go head!**
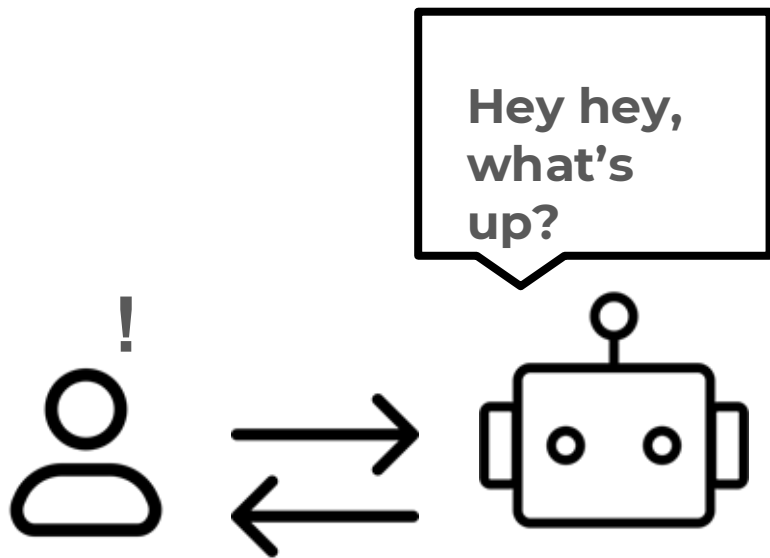
Friendly

Approachable

what if we anthropomorphize & personalize AI systems especially for a minority user?

- **Risk of LLM speaking like the user**
  - *Sociolect* is a dialect of a particular social class [1]
  - Ex. African American English and Queer slang

- **Cultural appropriation (?)**
  - When **humans** speak other's sociolect – bad
  - When **an AI system (a sociolectal LLM)** speaks so — will similar risks stay?

[1] Wolfram, W. (2004). Social varieties of American English. Language in the USA: Themes for the twenty-first century, 58-75.

In this work, we aim to...

Observe how users **behave** when engaging with sociolectal agents.

Observe how users themselves **feel** about the sociolectal agents.

Ask what other **opinions** do users have of sociolectal agents.

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Research Questions

Observe how users **behave** when engaging with sociolectal agents.

RQ1 Does *reliance* on an agent depend on whether the agent uses the user's sociolect?

Observe how users themselves **feel** about the sociolectal agents.
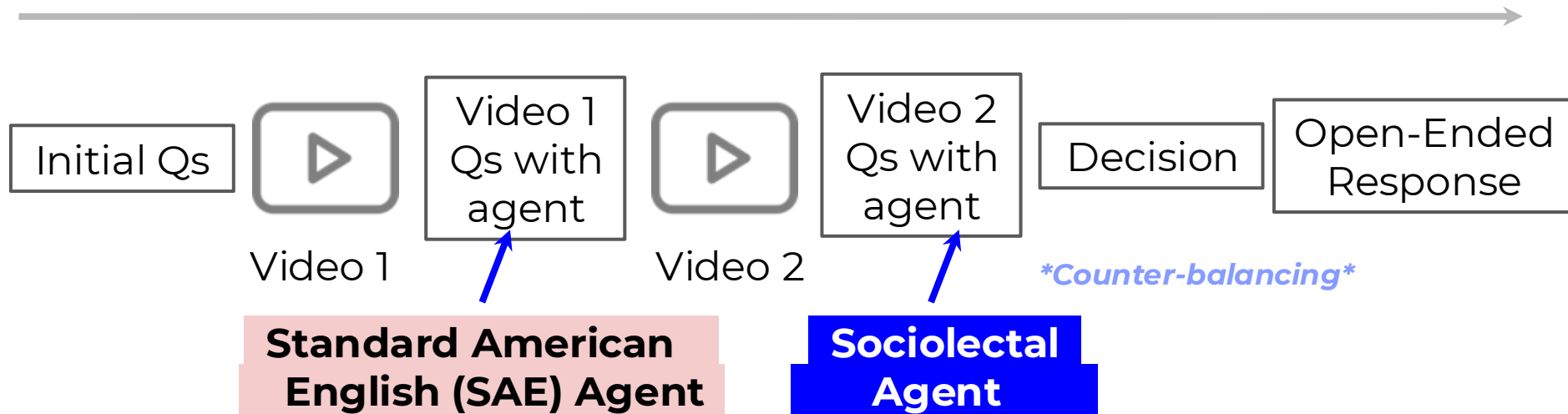
RQ2 Does a user's *perception* change on whether the agent uses the user's sociolect?

Ask what other **opinions** do users have of sociolectal agents.

RQ3 Are the user *perception* factors associated with **user *reliance***?

Survey Setup

n = 985;   African American English speakers = 498,
             Queer slang speakers = 487

| Initial Qs | ▶ | Video 1 Qs with agent | ▶ | Video 2 Qs with agent | Decision | Open-Ended Response |

Video 1   Video 2   *Counter-balancing*

Standard American English (SAE) Agent   **Sociolectal Agent**

User Perspective of Survey

7. What color watch was the woman wearing?
Agent Red's Response: *Hi friend, I'm fairly certain it's...*

○ Use Agent Red's response

○ I'll figure it out myself

Sociolectal Agent

African America English Agent

7. What color watch was the woman wearing?
Agent Blue's Response: *Yo, I'm kinda sure it be...*

○ Use Agent Blue's response

○ I'll figure it out myself
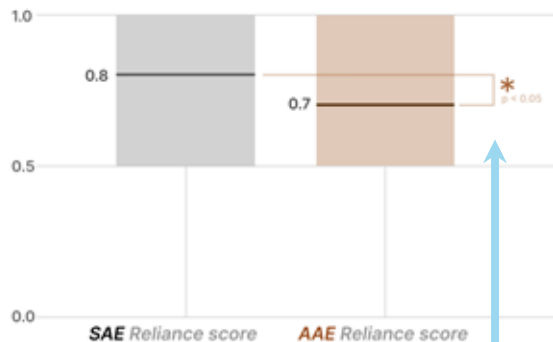
OR

Queer slang Agent

7. What color watch was the woman wearing?
Agent Blue's Response: *Hi henny, I'm fairly certain it's...*

○ Use Agent Blue's response

○ I'll figure it out myself

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(a) Participant reliance for AAE and SAE.

(b) Participant reliance for Queer slang and SAE.
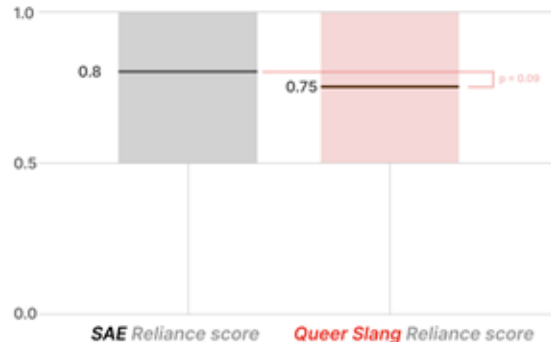
Results AAE speakers relied more on the SAE agent, Queer slang speakers didn't.

RQ2 Does a user's *perception* change on whether the agent uses the user's sociolect?

preferred!

AAE Speakers	AAE Agent	SAE Agent
Trust		✓
Satisfaction		✓
Less Frustration		✓
Social Perceived Presence	=	=

✓ Indicates statistically significant preference   = Indicates no statistically significant difference

Results **AAE speakers trust, were more satisfied with, were less frustrated by the SAE agent.**

RQ2 Does a user's *perception* change on whether the agent uses the user's sociolect?

Queer Slang Speakers	Queer Slang Agent	SAE Agent
Trust	=	=
Satisfaction	=	=
Less Frustration		✓
Social Perceived Presence	✓	

✓ Indicates statistically significant preference   = Indicates no statistically significant difference

Results **Queer slang speakers were less frustrated with the SAE agent and felt more social presence from the Queer slang agent.**
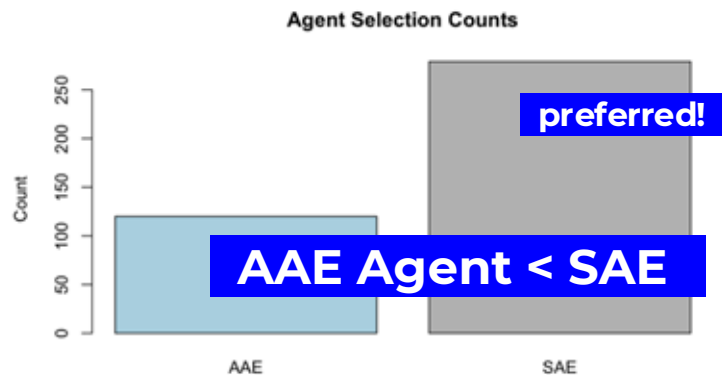
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preferred!

AAE Speakers	AAE LLM	SAE LLM
Trust		✔
Satisfaction		✔
Less Frustration		✔
Social Perceived Presence	=	=

Queer Slang Speakers	Queer Slang LLM	SAE LLM
Trust	=	=
Satisfaction	=	=
Less Frustration		✔
Social Perceived Presence	✔	

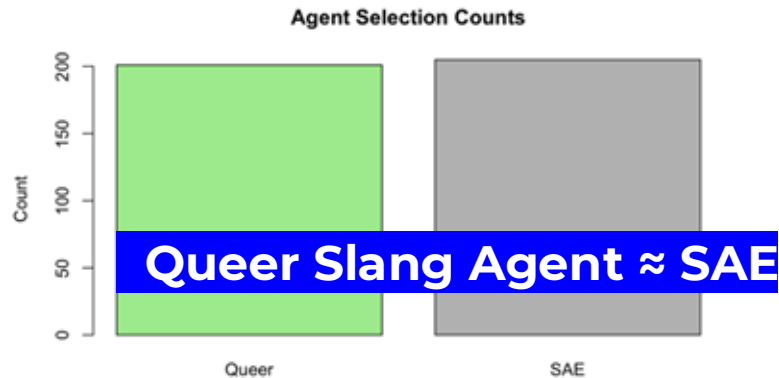**Results** **The consistent finding across the two groups for perception variables: both less frustrated with the SAE agent.**

Speakers of different sociolect seem to have different perceptions of an agent that generates their sociolect.

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RQ2 Does a user's *perception* change on whether the agent uses the user's sociolect?

Agent Selection Counts

preferred!

AAE Agent < SAE

(a) Preferences for AAE and SAE.

Agent Selection Counts

Queer Slang Agent ≈ SAE

(b) Preferences for Queer slang and SAE.

Results AAE speakers explicitly preferred the SAE agent over the AAE agent. Queer slang speakers didn't have as explicit of a preference.

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RQ3 Are the user *perception* factors associated with **user *reliance*?**

+ Indicates statistically significant preference

AAE Speakers	AAE Agent	SAE Agent
Trust	+	+
Satisfaction	+	+
Less Frustration	+	+
Social Perceived Presence	+	+

Queer Slang Speakers	QS Agent	SAE Agent
Trust	+	+
Satisfaction	+	+
Less Frustration	+	+
Social Perceived Presence	+	+

Results **Almost all perception variables were positively associated with user reliance for LLMs.**

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General comments about sociolectal LLMs

+ Positive Responses

- *"It just sounds more fun to interact with"* -AAE participant
- *"I enjoy being called a diva!"* -Queer slang participant

- Negative Responses:

- *"Agent [AAE agent] using AAE sounds like a joke and not natural."* - AAE participant
- *"Even people who use LGBTQ slang don't talk like that constantly. It would be annoying to have an AI constantly use slang phrases."* - Queer slang participant

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Conclusion + So-What

We observed how do users (n=985) behave, engage, and perceived with
a sociolectal agent versus **a SAE agent.**

AAE participants: Higher preference for and reliance on SAE agents

User expectations of Standard English in LLM systems

User behavior (reliance) strongly influenced by user perception and preference

Differences between sociolects (AAE, Queer slang) and between their speakers

← arxiv link qr code
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takeaways:

We observed how do users (n=985) behave, engage, and perceived with **a sociolectal agent** versus **a SAE agent**.

AAE participants: Higher preference for and reliance on SAE agents

User expectations of Standard English in LLM systems

User behavior (reliance) strongly influenced by user perception and preference

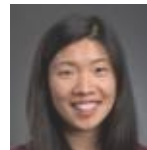Differences between sociolects (AAE, Queer slang) and between their speakers

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