

Toward understanding linguistic behaviors of human depending on task performance of voice assistant

Chaewon Park, JongSuk Choi,
Jee Eun Sung, and Yoonseob Lim

Korea **Institute** of Science
and **Technology**

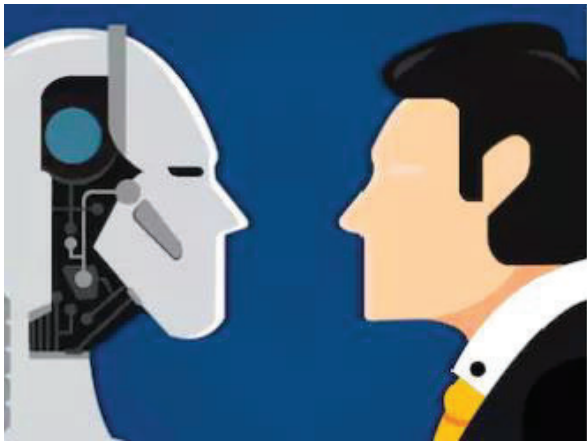
한국과학기술연구원

Pragmatic competence

- Humans have pragmatic competence
 - ✓ Change their linguistic behaviors depending on conversational context
 - ✓ Subcomponents of pragmatics
: physical context, audience, topic, purpose, visual-gestural cues, etc.



Hypotheses 1



- Linguistic adaptation of users in 'human - voice assistants' conversation (controversial)
 - ✓ impolite linguistic behaviors (Fisher, 2000)
 - ✓ mitigate requests, use back-channeling (Large et al, 2017)
- Linguistic capability of AI agent may cause different human's linguistic behaviors

→ Linguistic behavior would change depending on the voice assistant's task performance

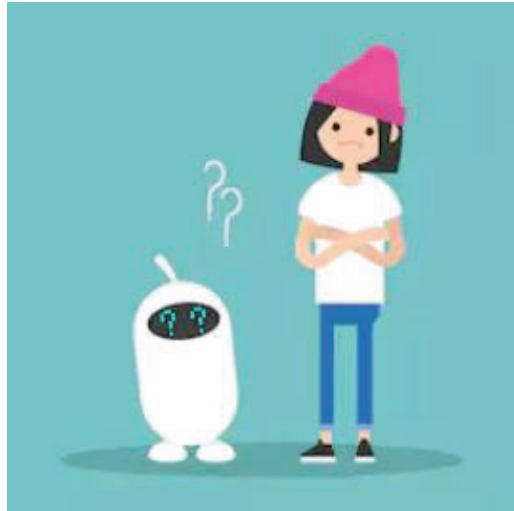
Hypotheses 2



- Humans change their utterances depending on their conversation partners.
 - ✓ Distinguished linguistic characteristics of adults' utterance in conversation with children (simple, repetitive, exaggerated language)

→ Human would use more complex sentence to voice assistant with high task performance

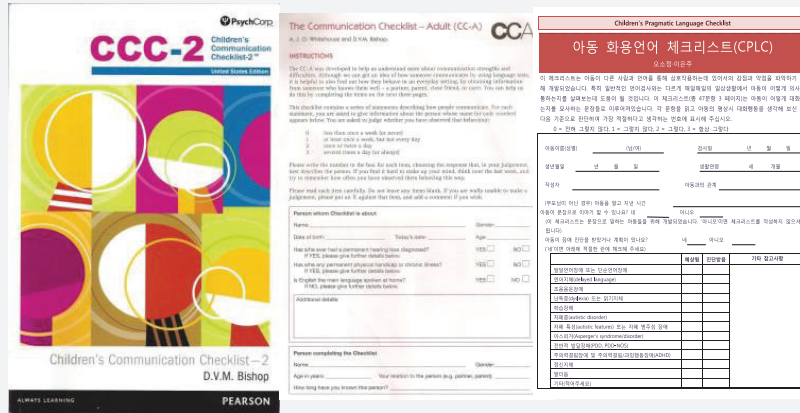
Hypotheses 3



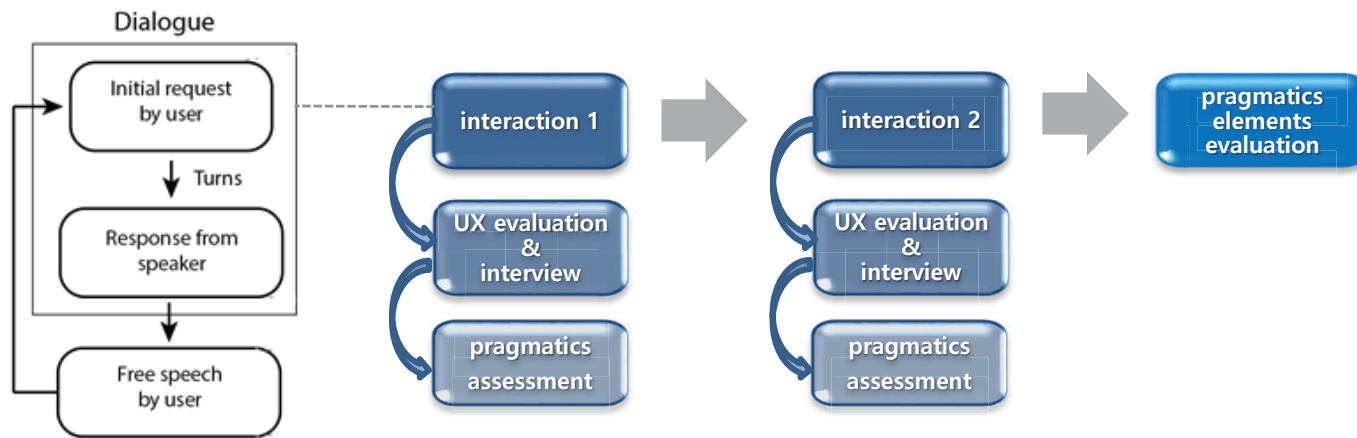
- Verbal commands of users contain pragmatic elements which make difficult for artificial agent to grasp user's hidden intention

→ Utilization of pragmatics elements in user's spontaneous speech would be altered when user interacts with voice assistant with high task performance

Experiment Design



- 33 pragmatics elements were extracted from standardized assessments



	interaction 1	interaction 2
Group 1	Prag. low voice assistant	Prag. high voice assistant
Group 2	Prag. high voice assistant	Prag. low voice assistant

prag. low voice assistant	prag. high voice assistant
Naver Clova	Wizard of Oz
