EPSRC Engineering and Physical Sciences Research Council

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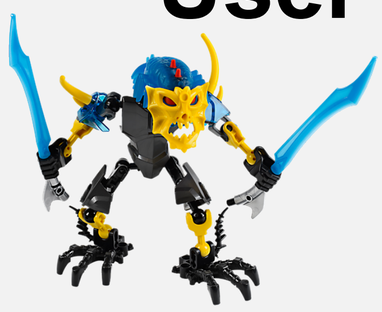
User Experience with Vague Agent Instructors



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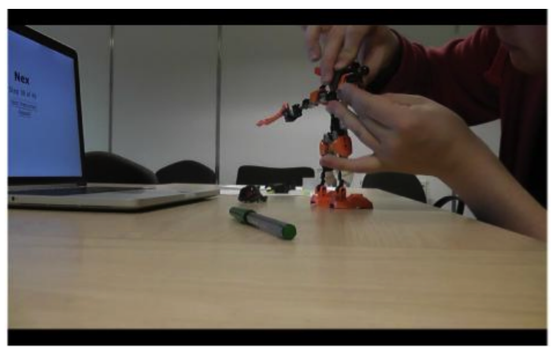
Overview

- Understanding the implications and any potential benefits of verbal agent instructors using vague language through analysis of user experience
- Exploring language use as a means of increasing agent-user rapport and successful task execution
- Comparative analysis of user reactions along a voice continuum
- Investigating adaptability in verbal and nonverbal human-agent communication

Experiment

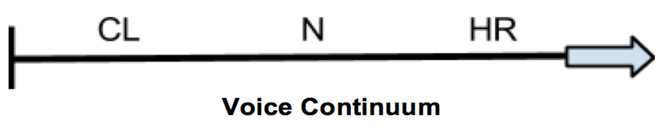
Model Assembly

Participants receive instructions to assemble Lego models with vague and non-vague language



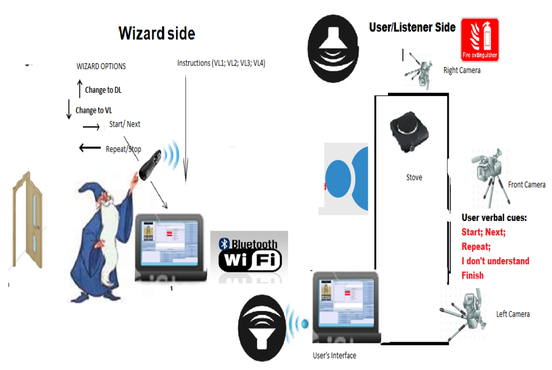
Voice Variation

The continuum represents increasing complexity in prosodic features from basic synthesised (CL) to full human recordings (HR)

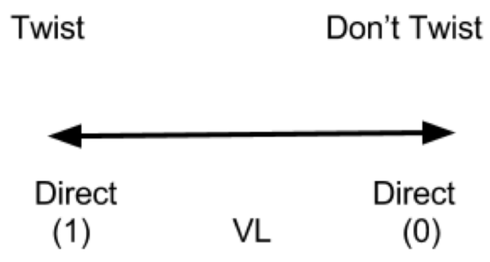


Dynamic Interactions

Wizard of Oz style experiments allow the investigation of dynamic and adaptable interactions:



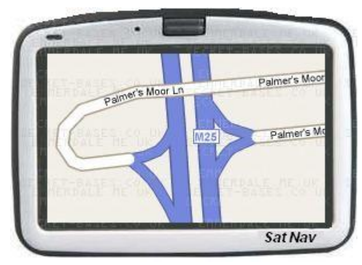
- Agents can react to user feedback and verbal cues
- Language use changes along the vague spectrum implicitly and/or explicitly



Related Applications

- Language use is sensitive to both context and user preference

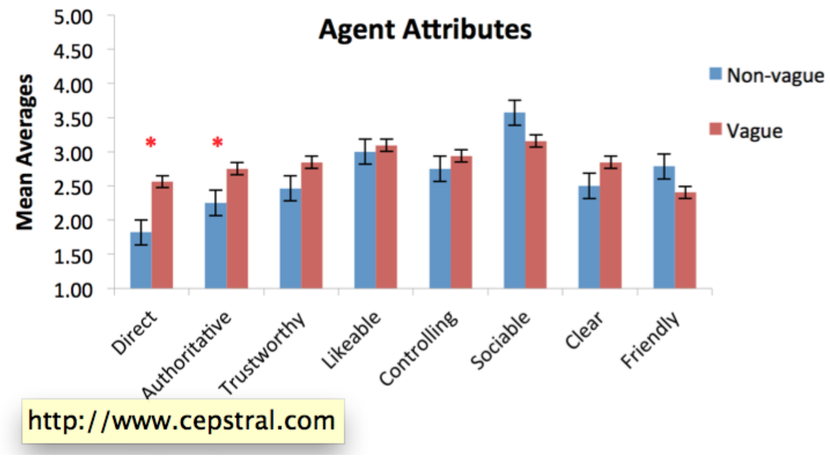
- Potential in dynamic situations in both occupational and leisurely activities that require adaptive agents giving instructions such as **teaching, travel and navigation** & **healthcare**



User / Listener Experience

Learning from user experience creates a clearer image of how relatively small changes in language and agent capabilities affect multiple facets of interaction. These include:

- Listenership behaviours
  - Repair
  - Backchannels
  - Facial actions
  - Gestures
- User task performance
  - Errors and requesting repeats
- User attitudes towards agents



Future Work

- Design a Mathematical framework for assessing Multimodal congruence in multimodal interactions:

Where: **MC Ξ (m + ec + I)**
m = multimodal corpora strands
ec = effective communication
I= information packaging

- Developing a more comprehensive vague language framework and expanding the scope of investigation into uses beyond politeness and rapport maintenance
- Exploring interactions with more user control and active interaction

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