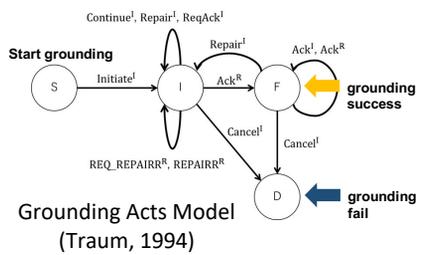
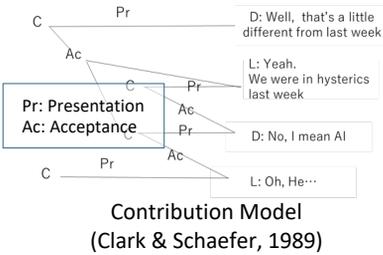
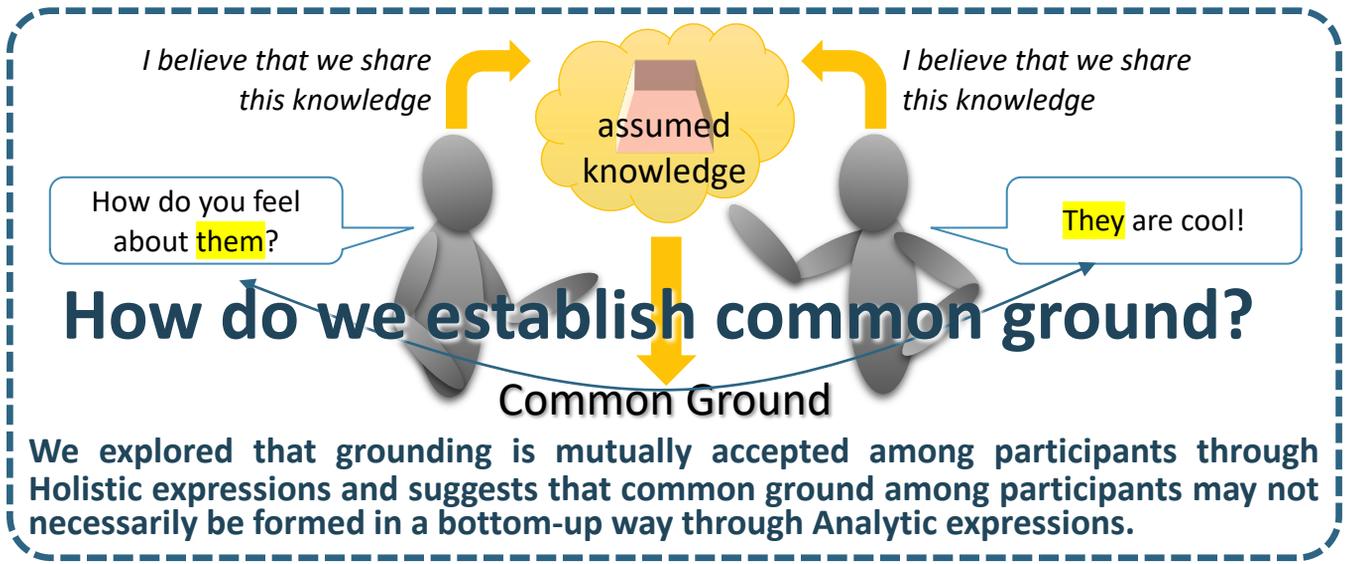


A Speculative and Tentative Common Grounding Handling for Efficient Composition of Uncertain Dialogue

Sudo, S., Asano, K., Mitsuda, K., Higashinaka, R., & Takeuchi, Y.



Bottom-up approach

Assuming that a person talks to is a first-time encounter with another and that there is no shared experience or knowledge.

People communicate more efficiently and, by Grice's Maxims, use linguistic representations. (Heller et al., 2012)

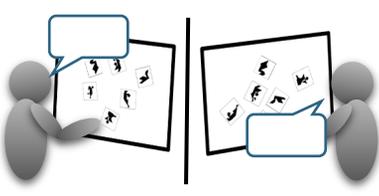
Dialogues produce utterances when using processing based on an egocentric perspective. (Keysar et al., 2000; 2003)

Hypothesis

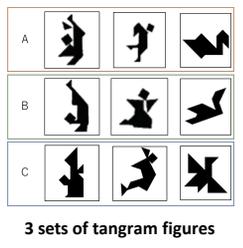
People attempt to infer the beliefs of others not only from linguistic information but also from the other's behavior and the context of their actions.

Applying Top-down approach

Tangram Naming Task (TNT)



- 2 participants in 2 separated environments, respectively
- The same figure set (6 tangram figures) is shown for each participant pair
- Random arrangement and tilt for each tangram figure
- Participants are freely allowed to move or rotate the tangram figures on the monitor screen
- Participants know nothing about the condition of others' screens
- Participants find and name all 6 tangram figures to which the other mutually refer only via their voice within 30 minutes
- The experimenter records the participants' dialogue (voice) and captures each participant's monitor screen (video) ---> data for analysis



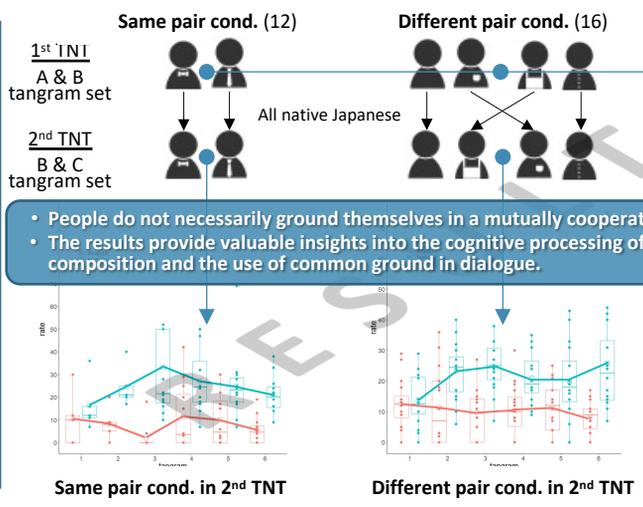
Annotations for utterance data

Analytic Expression

Speech specifically describes the individual polygons that make up the tangram shape and where they are located in the overall shape.

Holistic Expression

An utterance that subjectively describes the whole or part of a whole tangram shape without mentioning the polygons that make up the tangram (e.g. "it looks like," "it seems").



1 st TNT session	
28 sets of dialogue	6,282 utterances
2 nd TNT session	
Same pair cond.	Different pair cond.
12	1,622
16	2,735

All pairs in 1st TNT

Means	2 nd TNT session	
	SP cond.	DP cond.
All utterances	224.36	170.94
Holistic Expression	28.67 (20.89%)	29.38 (17.19%)
Analytic Expression	9.34 (6.90%)	16.69 (9.76%)