

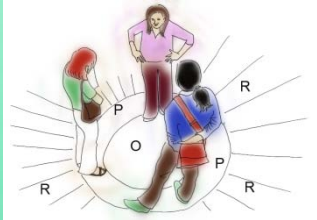
Understanding Multiparty Interactions

What is a Multiparty Interaction?

A multiparty interaction is a communication configuration that involves three or more participants. In the field of dialogue processing for human-machine interfaces (HMI), researchers have tried to build an environment in which the machine interprets an individual human's behaviors and provides suitable information. One of the key technologies necessary for this is the ability to read individual human behaviors correctly. In contrast, the processing of multiparty interactions aims to build an environment in which an artificial agent can participate in an ongoing human conversation (i.e., in a multiparty interaction). Some of the key technologies necessary for this are an understanding of turn-taking systems, a participation framework that consists of multiple participants in conversation, and the design of natural timing and behaviors for the artificial agent involved in the conversation.



Analysis 1: Facing formation and Participation Framework

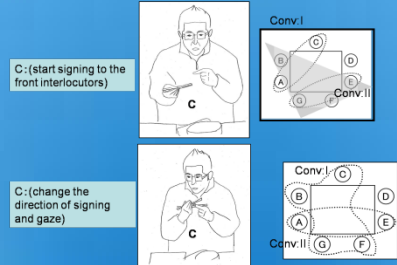
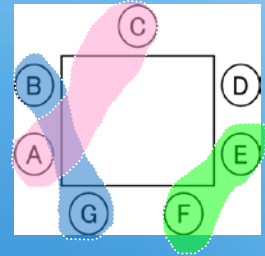


Facing formation (Kendon, 1990)

Scene	Screen shot	Body orientation and Gaze	Scene	O-space, P-space, R-space
1			1	
2			2	
3			3	
4			4	

E: Exhibitor, VA: VisitorA, VB: VisitorB
 ↗ Dynamic change of the body ↘ Gaze direction

Analysis 2: Schisming in Multiparty and Sign Language Conversation



Analysis 3: Disfluency and Multimodality

	Disfluent phase	Repair phase (1)	Repair phase (2)
Kaori (B):	(P, chest>P, nose)	HOME (P, upper-right)	PARENTS OLD (P, upper-right)
Ri:	(P, chest>P, nose)	REAL MAN WOMAN ROOF HOME (P, upper-right)	PARENTS OLD
Ji:	~~~~~	ROOF HOME	~~~~~
Mouth:	「(J)IBUN (my)」	「(J)IKKA (home)」	「(O)YA (parents)」「(M)OU (very)」「(P)uff of mouse「PA)」



Participation Framework, Goffman(1981), Clark(1996)

Participation Procedures, Bono, Suzuki, Katagiri (2004)

