

# Dialogue Policies for Confusion Mitigation in Situated HRI

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## Appendix

Table 1: General dialogue policy for mitigating productive confusion

General dialogue policy of confusion mitigation	
Dialogue Acts	Communication Rules
Restatement	Repeat the information / question either at the same speed or more slowly.
Feedback request	Option 1: Ask the participant whether they can follow what the agent has said. Option 2: Ask the participant whether they want to continue to answer this question or complete the task with the agent's help.
Confirmation	Acknowledge that the information / question is difficult and that this has likely led to the participant being confused.
Information extension	Provide more explanations or information to fix the issued questions / information.
Information supplement	Provide the full information / question in different ways to easy understand without confusion.
Response correction	Provide a positive and correct response to remove the participant's source of confusion.
Subject change	Option 1: Raise a simple question that the participant can answer without confusion. Option 2: Raise another interesting topic arising the participant's engagement.

Table 2: Dialogue policy for mitigating productive confusion

Confusion Inductions	Policy of confusion mitigation	
	Dialogue Acts	Communicative Detail
Complex infor*	Restatement	The agent will reintroduce the complex information step by step.
	Feedback request	The agent will ask whether the participant is clear on the issue or question.
	Information supplement	The more and extra information will be told to the participant.
Insufficient infor	Information extension	The agent will provide the lost part of the question / information.
	Information supplement	The more and extra information will be told to the participant.
Contradictory infor	Response correction	The agent will show a positive feedback.
	Confirmation	The agent will confirm the question / information is contradicted.
	Information extension	The agent will correct the question / information to consistent information.
	Information supplement	The more and extra information will be told to the participant.
False Feedback	Response correction	The agent will show a positive and correct response or feedback.
	Subject change	The agent will talk about a simple question / information with positive feedback.

\* Infor: Information

Table 3: Dialogue policy to mitigate unproductive confusion

Confusion Inductions	Policy of confusion mitigation	
	Dialogue Acts	Communicative Detail
Complex infor* Insufficient infor Contradictory infor False Feedback	Confirmation	With a positive response, the agent will confirm that the question / information is difficult which has led to the participant being confused.
	Feedback request	The agent will ask whether participants want to continue to answer this question or to continue the task with the agent's help.
	Subject change	The agent will ask straightforward questions to avoid confusion states.
		The agent will talk about another interesting topic <i>e.g.</i> favourite food, movie <i>etc.</i>

\* Infor: Information