

Clarifying reference and plans in dialogue

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Two views of coordination

Intentions as prerequisite

- Speaker formulates a priori, conscious intentions, recognized by hearer (Searle 1976, Grice 1976)
- Hearer recovers “same” intended meaning
- Prioritization of explicit, rational negotiation

Intentions as joint construal

- Intentions in dialogue are epistemologically, ontologically and temporally ambiguous (Haugh 2008, Suchman 2003; Heritage 1991)
- Explicit negotiation of intentions is less effective than tacit negotiation (Pickering and Garrod, 2004)
- Coordinating on intentions depends on prior interaction (Clark, 1996; Brown-Schmidt et al. 2007; Brennan et al 2010; Healey & Mills, 2006)

Speaker		Addressee
Proposing	<i>Plans</i>	Considering
Signaling	<i>Reference</i>	Recognising
Presenting	<i>Acoustic</i>	Identifying
Execution	<i>Contact</i>	Attendance

Clark, 1996

Question: How emergent are reference and plans?

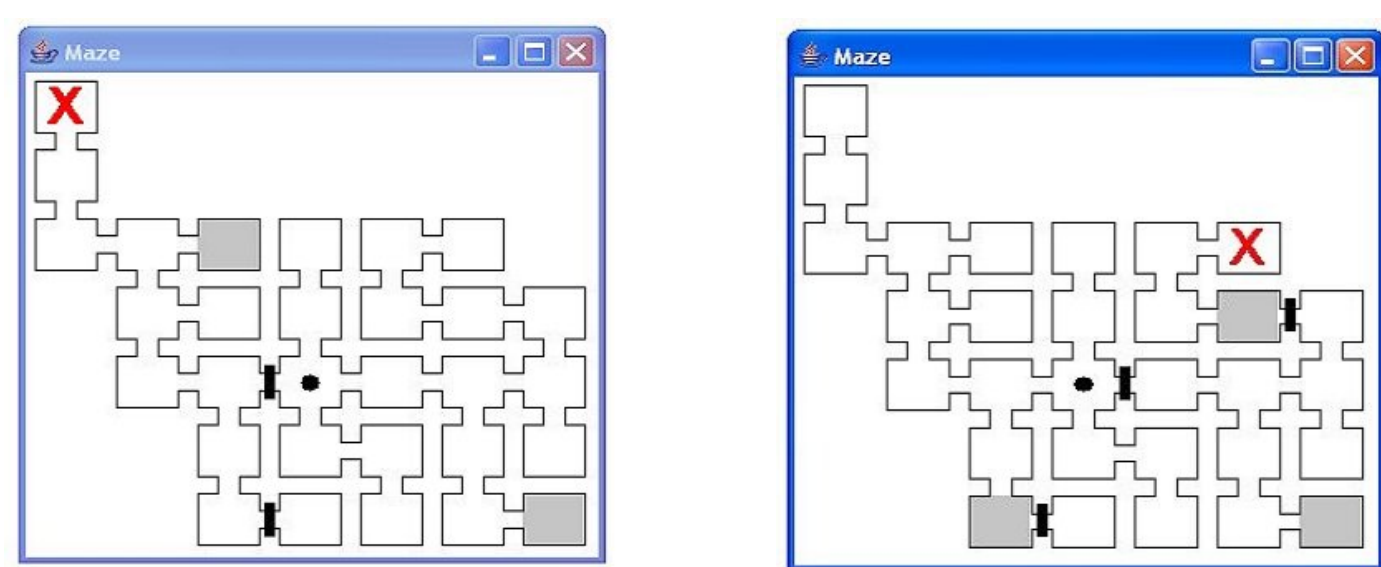
Method:

Task: Computer-mediated variant of the maze task (Garrod et al 1987;1994). Played by pairs of participants who communicate via a text-based chat tool.

Manipulation: The server introduces artificial “spoo” clarification requests into the dialogue that target either plans or reference. Clarification requests are inserted into:

- (1) Low coordinated dialogue at the start of the interaction
- (2) High coordinated dialogue (giving participants opportunity to jointly construe intentions)

The maze task



Solving mazes requires:

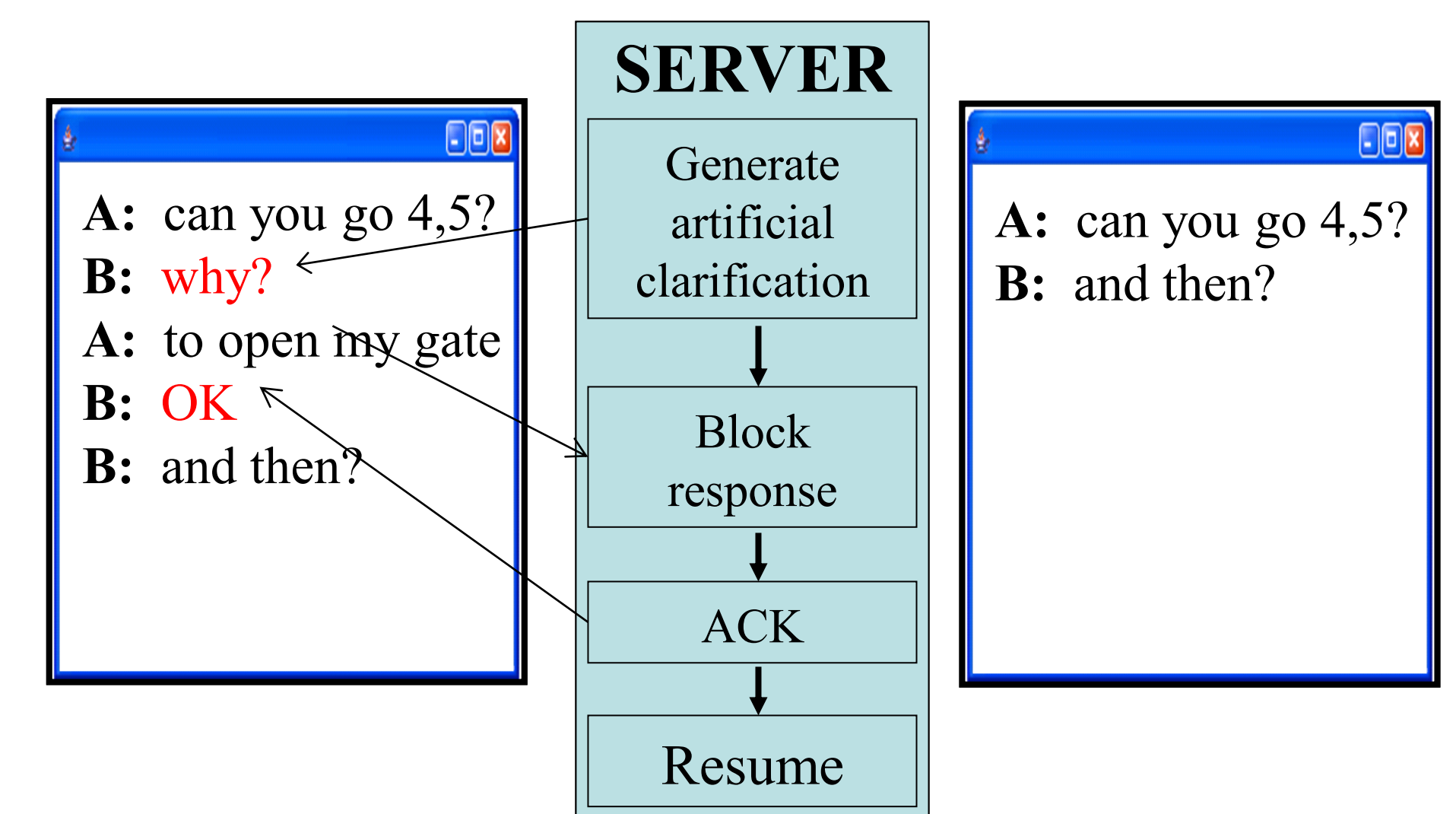
- Guiding each other through mazes
- Establishing spatial referring schema

How coordination develops

- 0 mins:** Sticking out piece on top of the maze at very top left
- 5 mins:** The really northernmost box of the maze
- 10 mins:** From the top right, five along and 2 up
- 15 mins:** Leftmost column right at the top
- 20 mins:** Left column and the first square
- 30 mins:** 7th row first column
- 35 mins:** 7 row 1st col
- 45 mins:** 7, 1

} **Cartesian Schema (x,y)**
= **High coordination**

Inserting artificial clarification requests into the dialogue



12 mazes, 2 artificial clarifications per participant per maze

Two kinds of clarification request are inserted into the dialogue:

- **Why?:** “Sorry why?”, “could you please say why?”
- **Fragment:** Single word repeat of referring expression: “top?”, “square?”, “row”

Clarification requests are inserted at two levels of coordination:

- **Early:** trials 1, 2, 3, 4, 5, 6.
- **Late:** trials 7, 8, 9, 10, 11, 12.

2 x 2 design : Clarification (Why? / Fragment) x Coordination (Early / Late)

Disruption is measured at increasing distance from the clarification requests.

Hypotheses

Intentions as prerequisite:

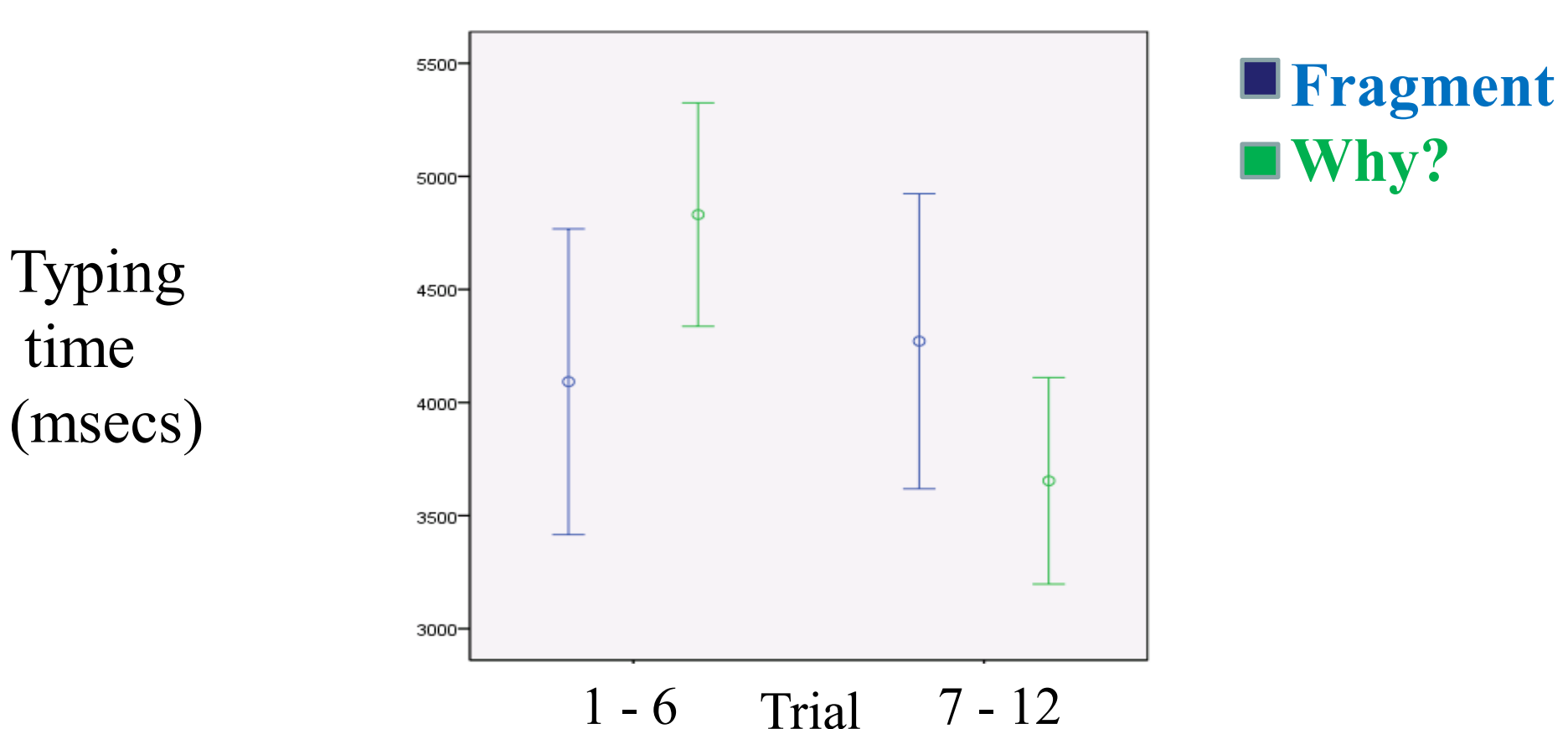
- High-level intentions are readily available to speakers from the start of the dialogue.
- “Why? / Late” clarification will query ratified information, causing **more** disruption
- **Fragment < Why Early ≤ Why Late**

Intentions as joint construal:

- At the start of the dialogue, high-level intentions haven’t been established yet.
- Querying WHY? should be **less** disruptive **later**, once intentions are established
- **Why Early > Why Late**

Clarification responses

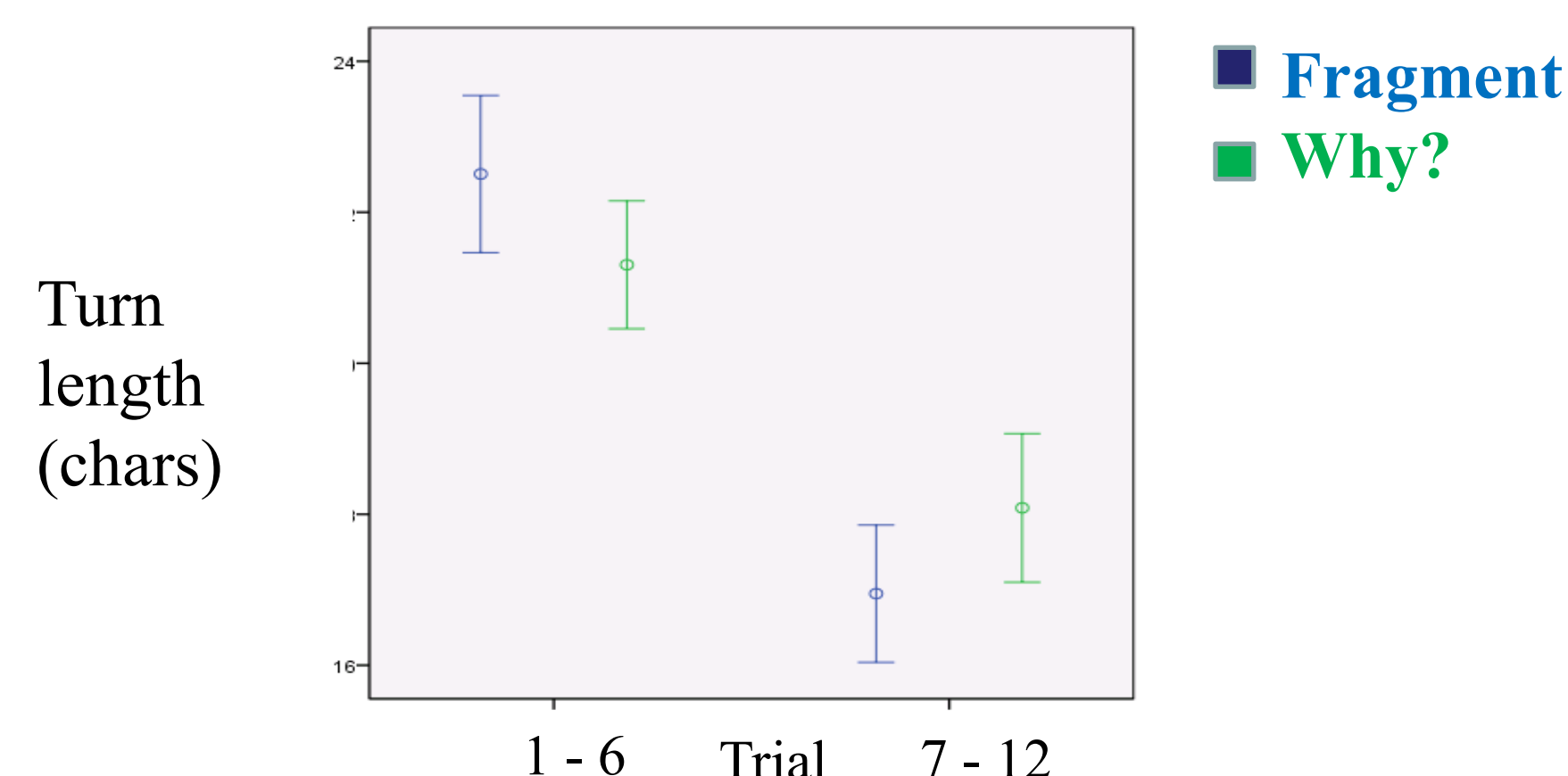
Typing time (msecs)



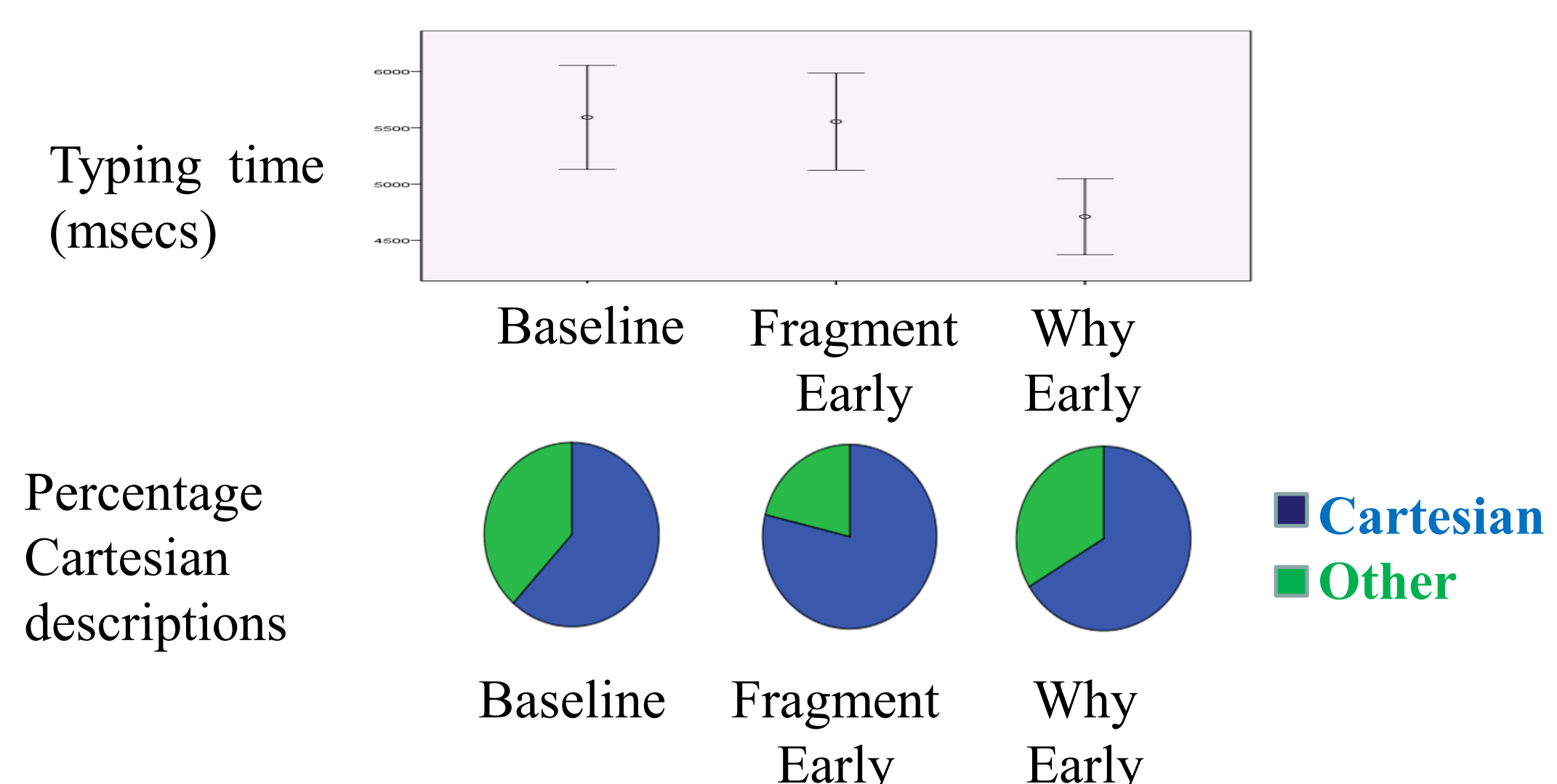
Similar pattern for other measures (speed, edits, installments)

Turns outside clarification dialogue

Turn length (characters)



Long-distance effects after clarification has ceased (Trials 7 – 12)



Example clarification responses

	Early (Trials 1-6)	Late (Trials 7 - 12)
Fragment	A: Could you go to the top row? B: top? A: yeah next to the long row	A: Could you go to 3,5 B: 3? A: 3 across
Why?	A: Could you go to the top? B: why? A: I dunno, just go there	A: Could you go to 3,5 B: why? A: it’s my switch

Acknowledgments

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Conclusions

FRAGMENT and WHY? Clarification have differential effects on the development of coordination.

Responses to clarification **confirm the joint construal hypothesis**, suggesting that

- Successful articulation of higher-level intentions requires prior coordination.

But, in normal dialogue outside of the clarification subdialogue, **the effect is inverted**

When clarification requests cease, the effect is **inverted again**

- **Introducing artificial “trouble” has a beneficial effect on coordination.**