InMind Movie Agent: Responsivity through Incremental Processing
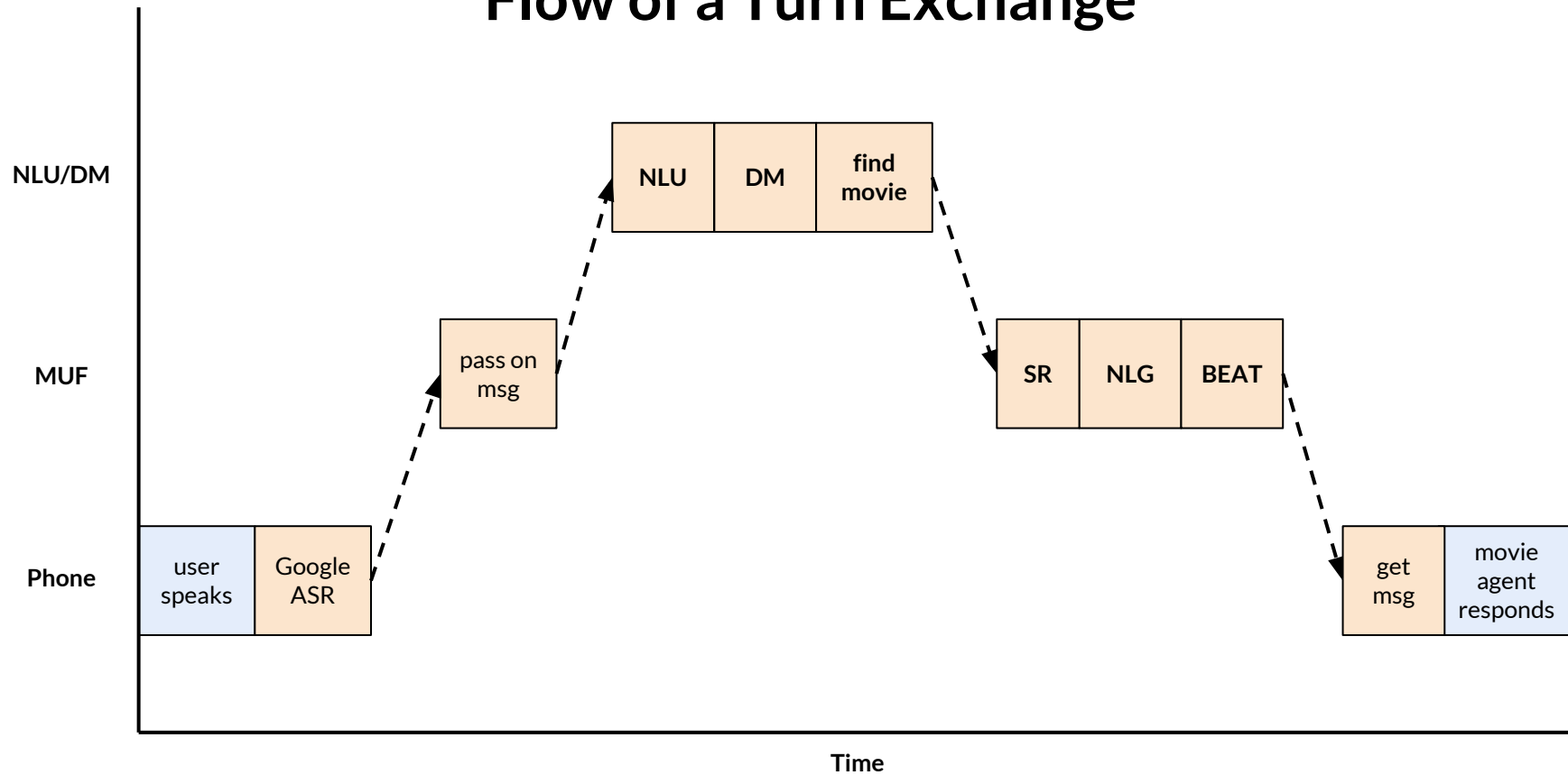
Vivian Tsai

25 Aug 2017
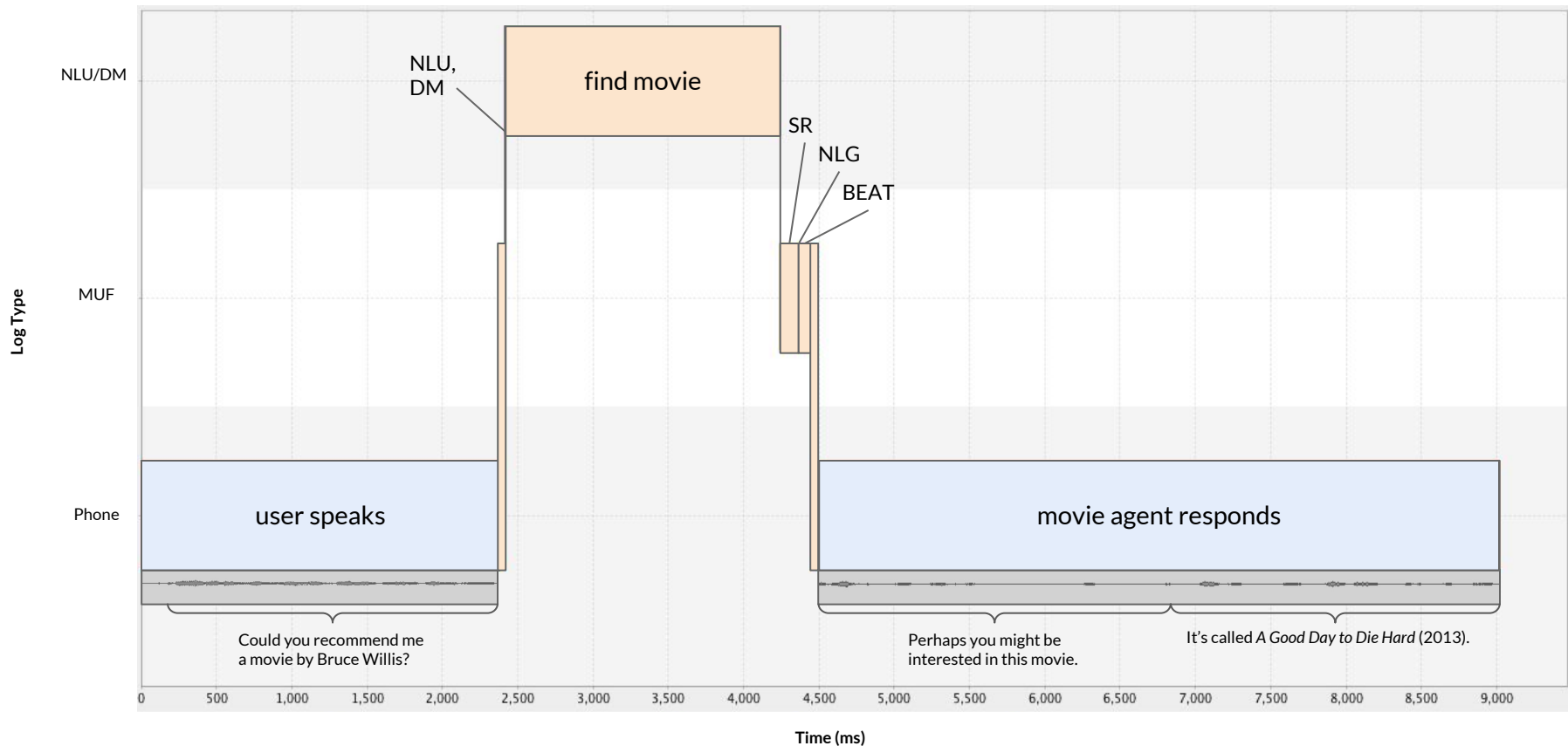
Example Conversation

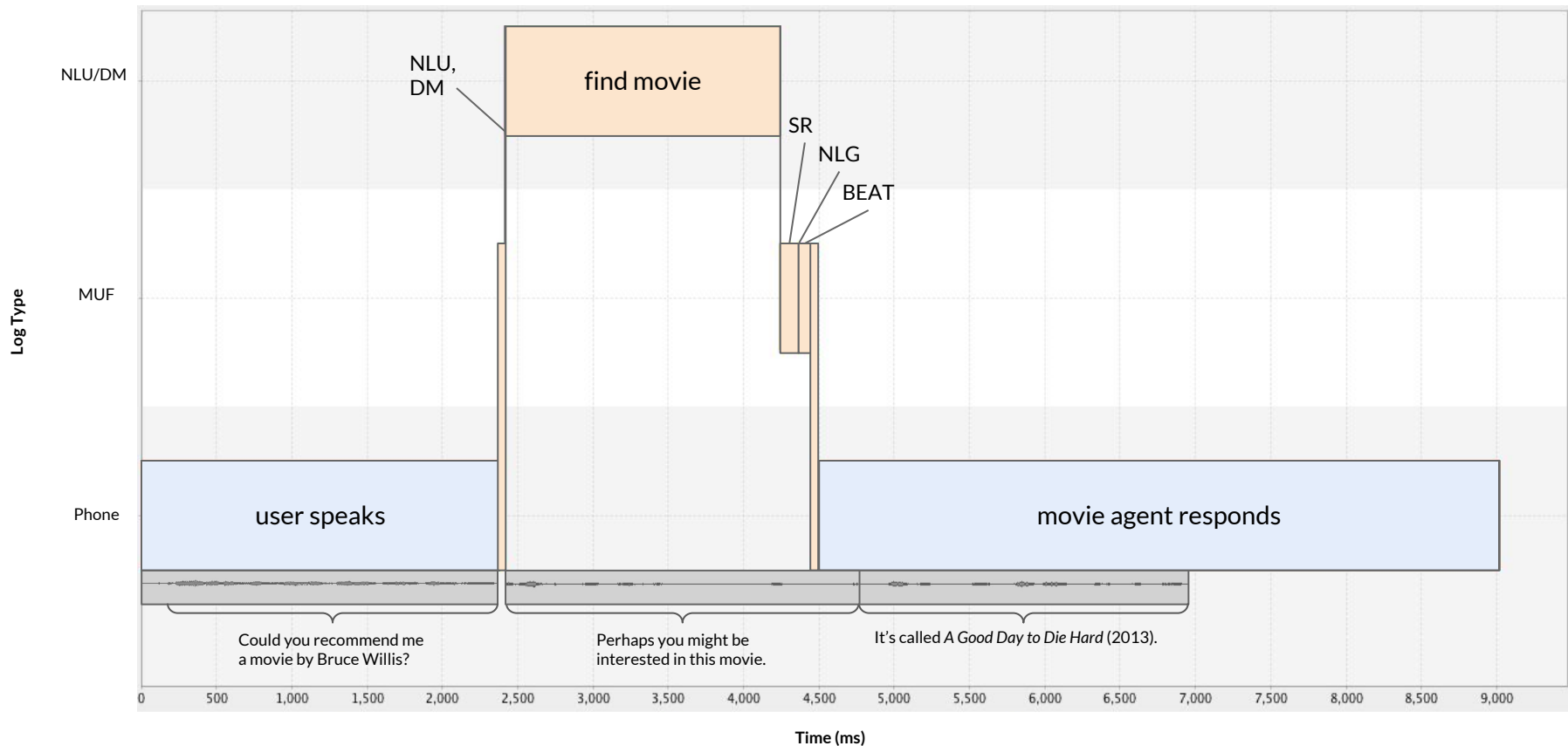| turn exchange | user | My favorite is Jennifer Lawrence. |
	movie agent	<u>Wow, here is one I'd love to go to</u>. It's called Silver Linings Playbook (2012).
turn exchange	user	Can you recommend another? I don't think I'd like that.
	movie agent	<u>Perhaps you might be interested in this movie</u>. It's called Joy (2015).

Flow of a Turn Exchange
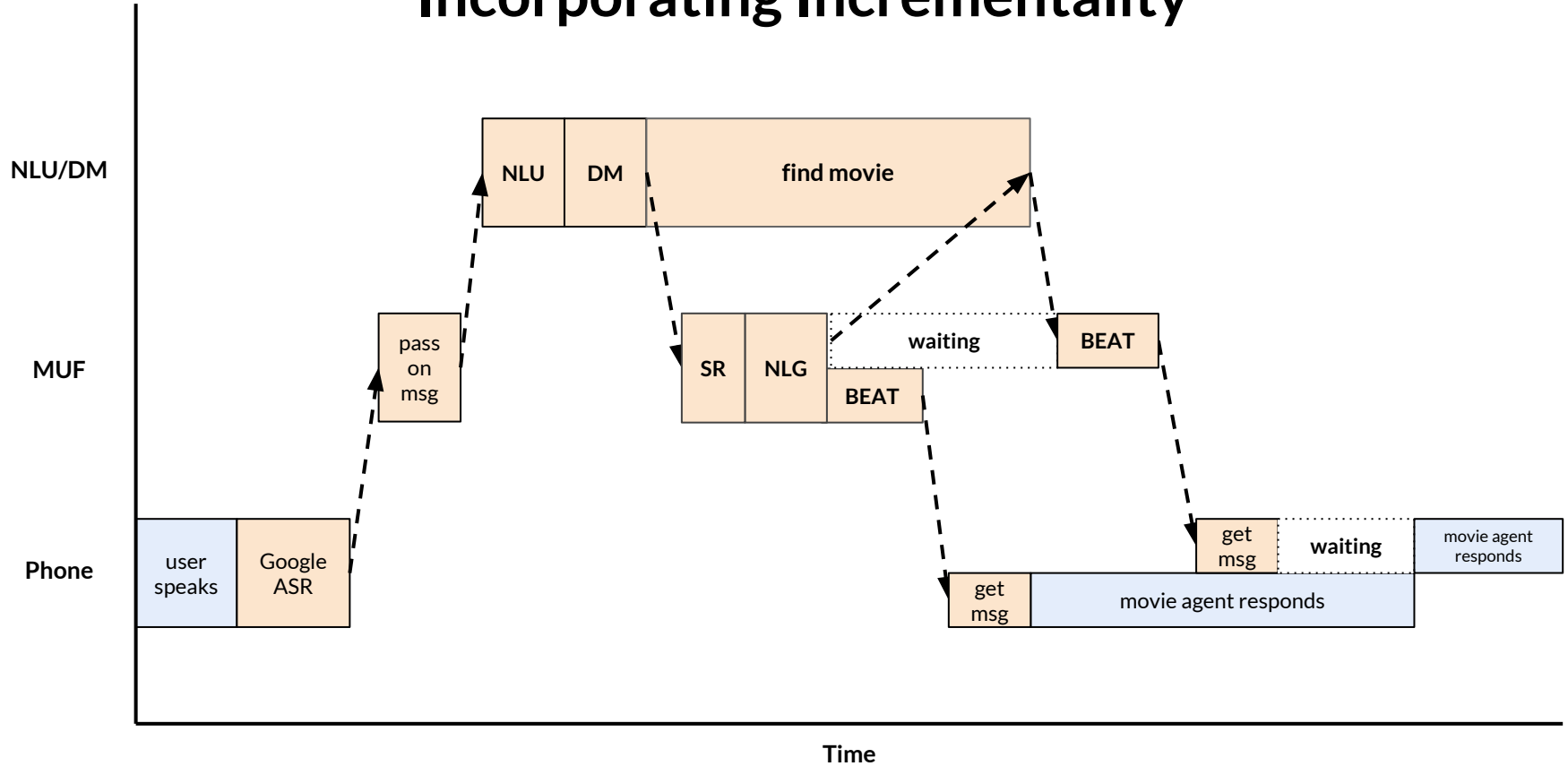
Example of a Turn Exchange
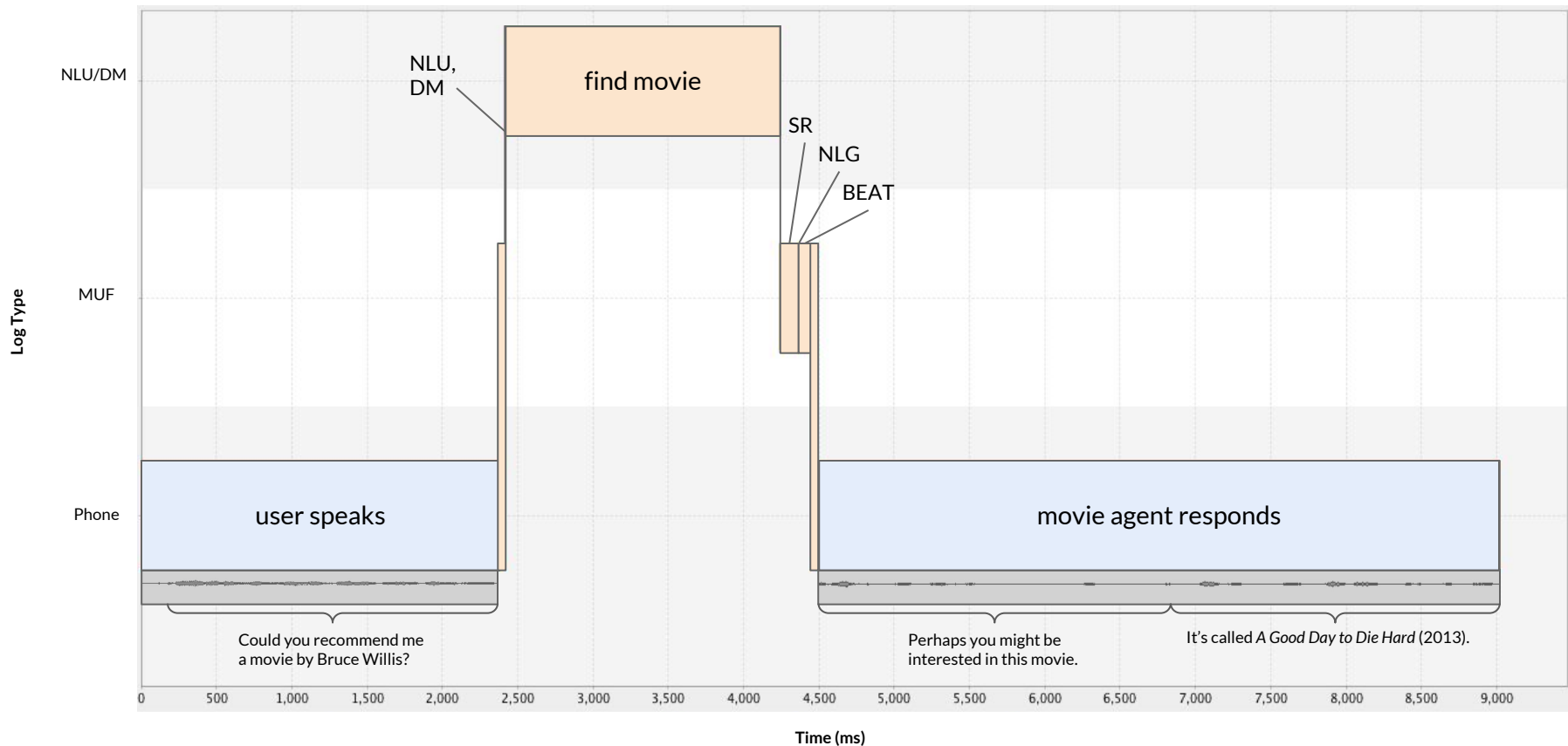
Example of a Turn Exchange

Incorporating Incrementality
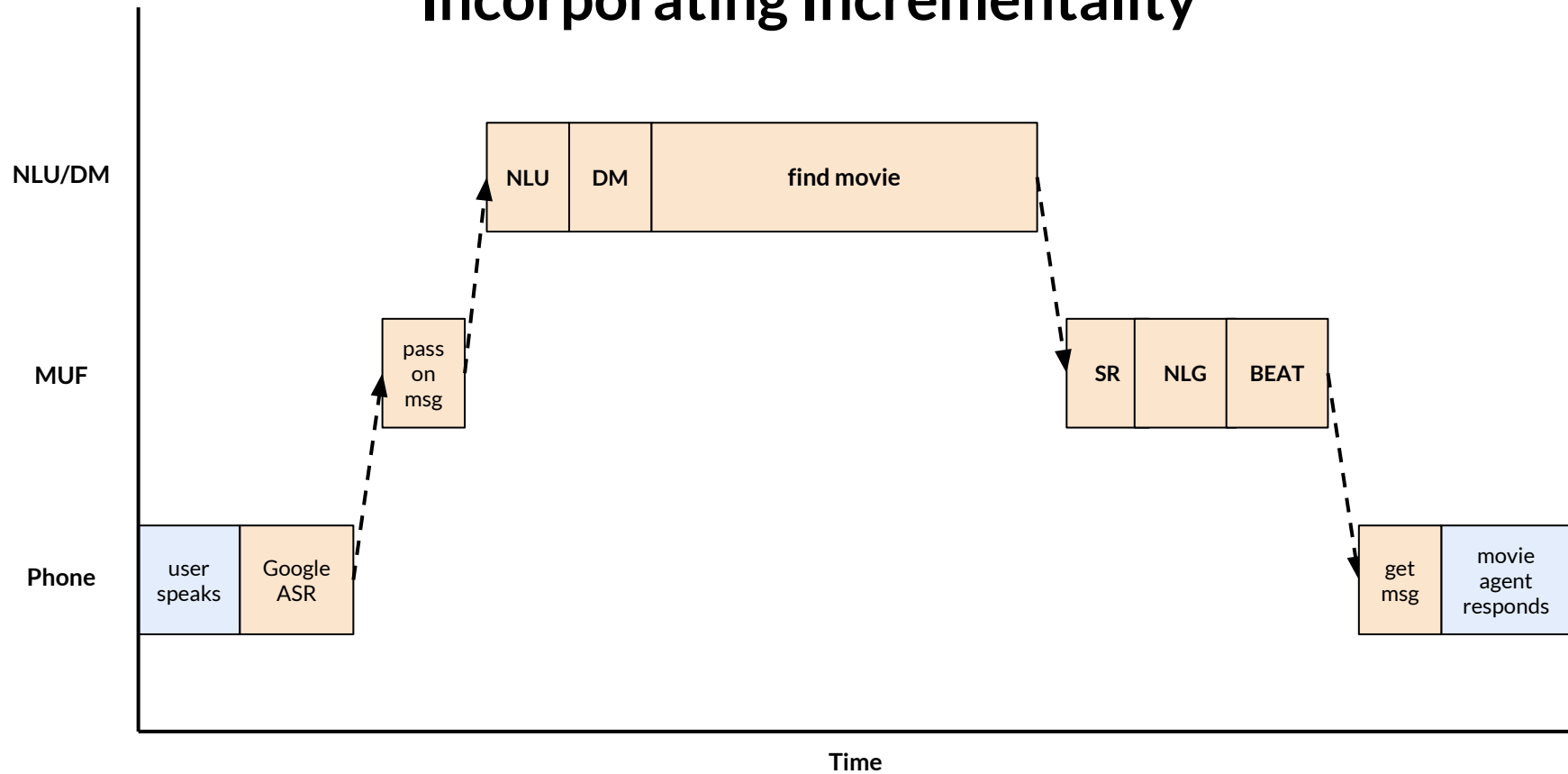
Incorporating Incrementality

Non-Incremental Turn Exchange

Incremental Turn Exchange

Log Type (y-axis)
- NLU/DM
- MUF
- Phone

Time (ms) (x-axis): 0, 500, 1,000, 1,500, 2,000, 2,500, 3,000, 3,500, 4,000, 4,500, 5,000, 5,500, 6,000, 6,500, 7,000, 7,500, 8,000, 8,500, 9,000

Labels: DM, NLU, NLG, SR, BEAT, BEAT

find movie

user speaks | social sentence | movie sentence

Could you recommend me a movie by James McAvoy?

Perhaps you might be interested in this movie.

It's called *The Family* (2013).
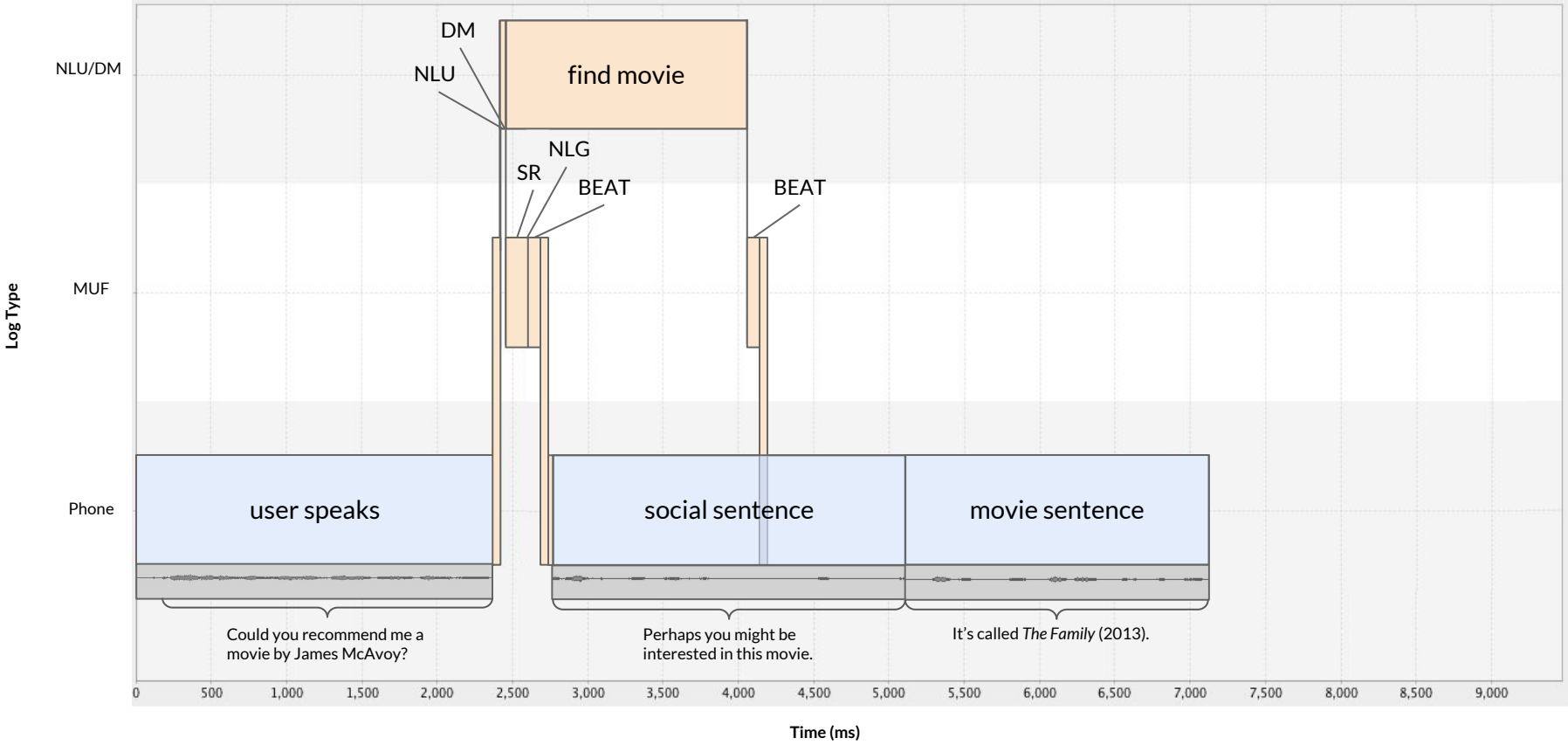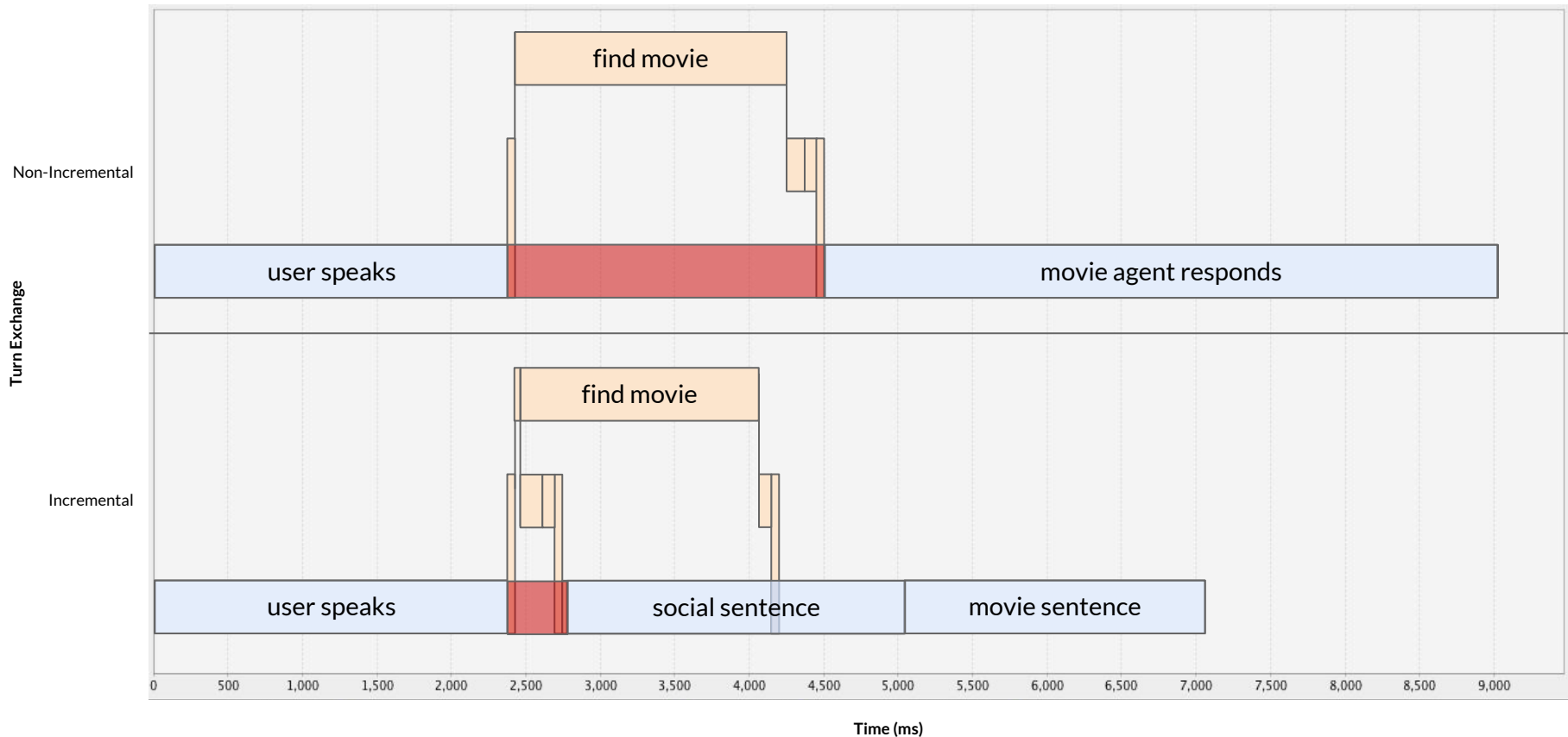
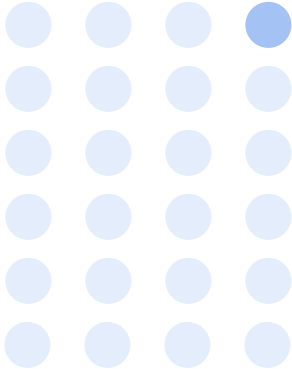# Non-Incremental vs. Incremental Turn Exchanges
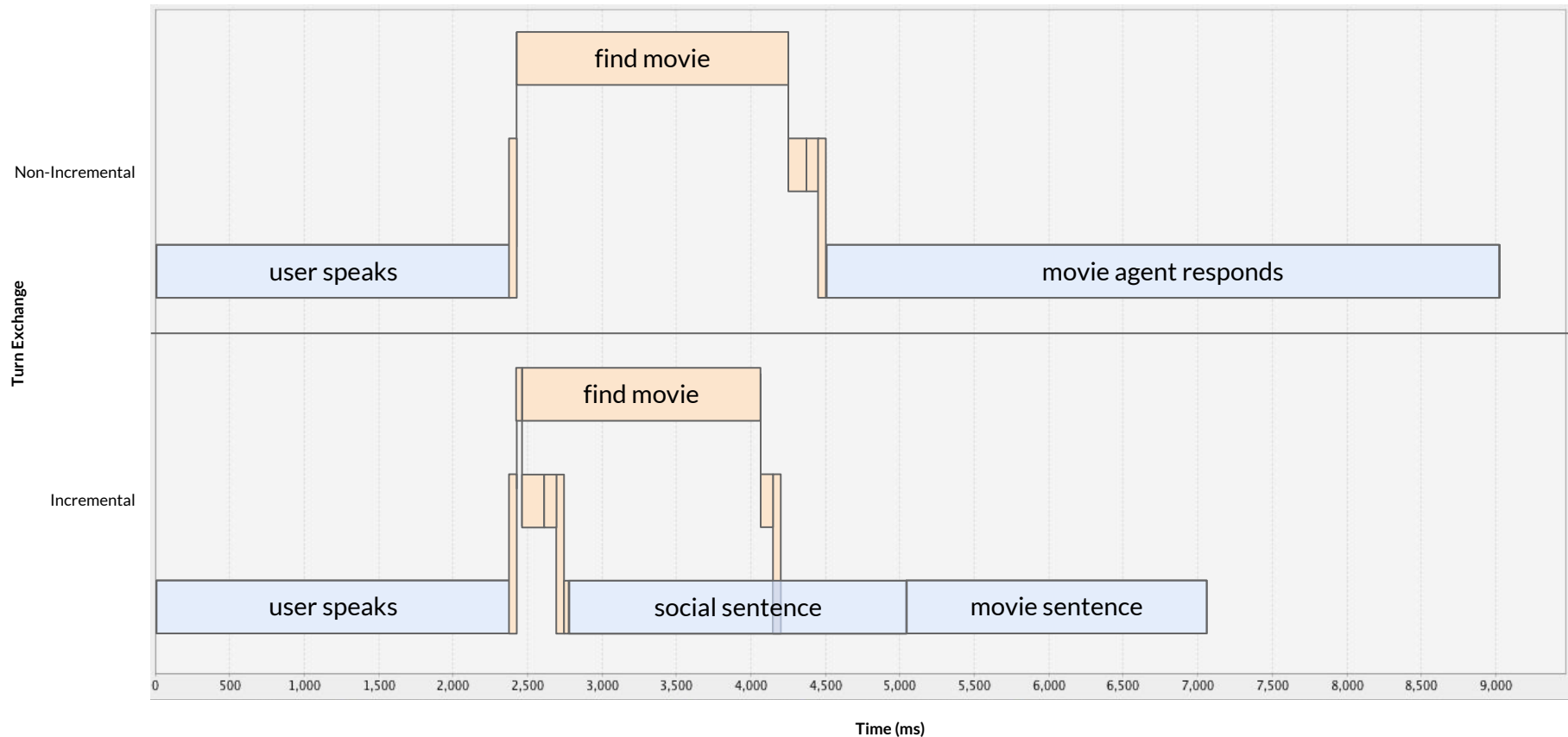
Non-Incremental vs. Incremental Turn Exchanges

User Study

24 subjects

2 conversations

non-incremental

incremental

4 variables

responsiveness

attentiveness

enjoyability

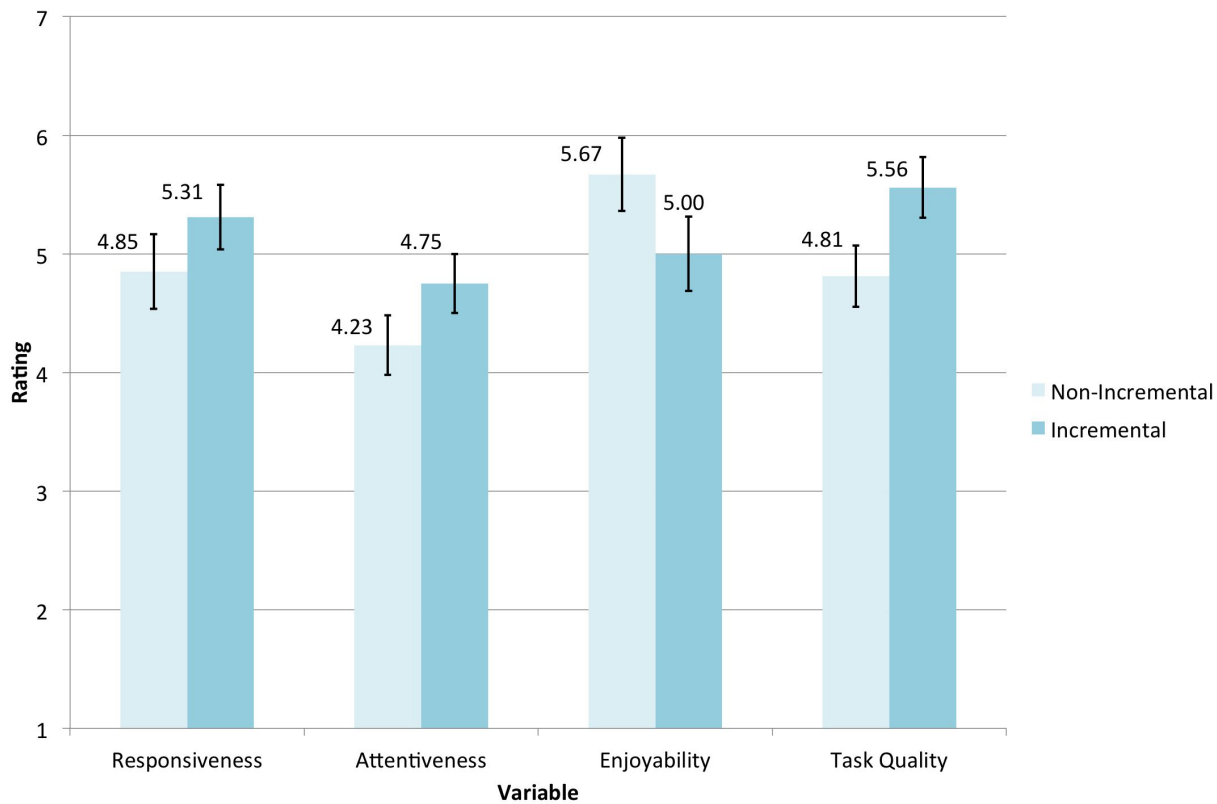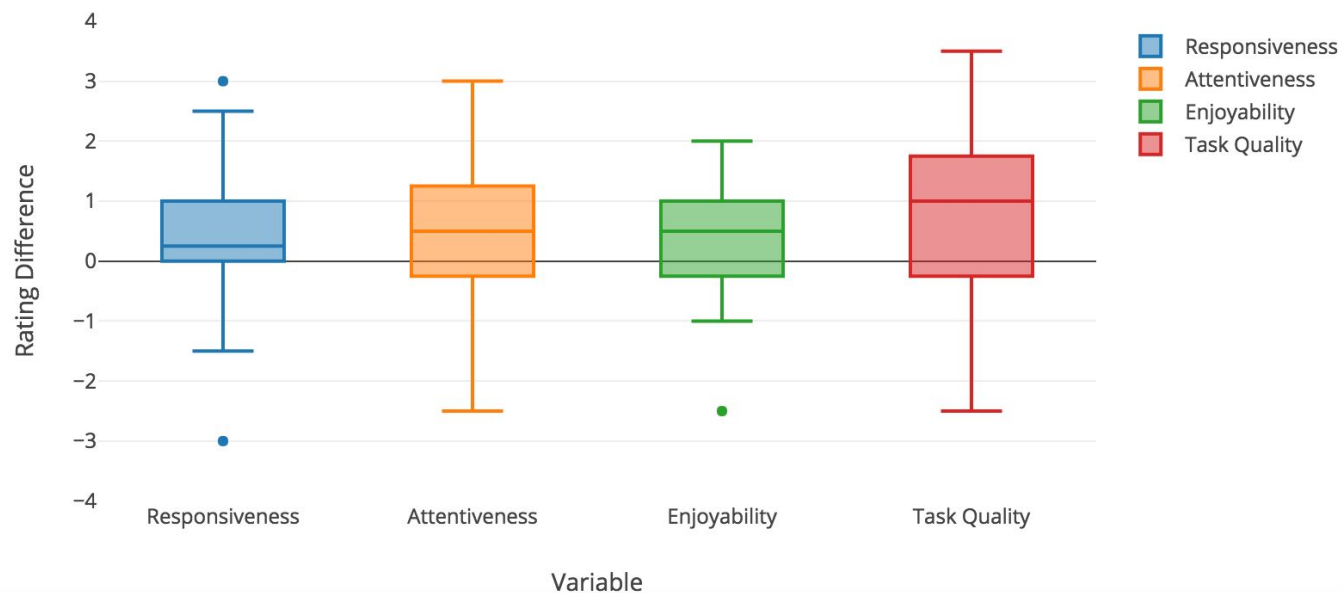task quality
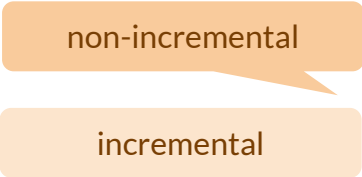
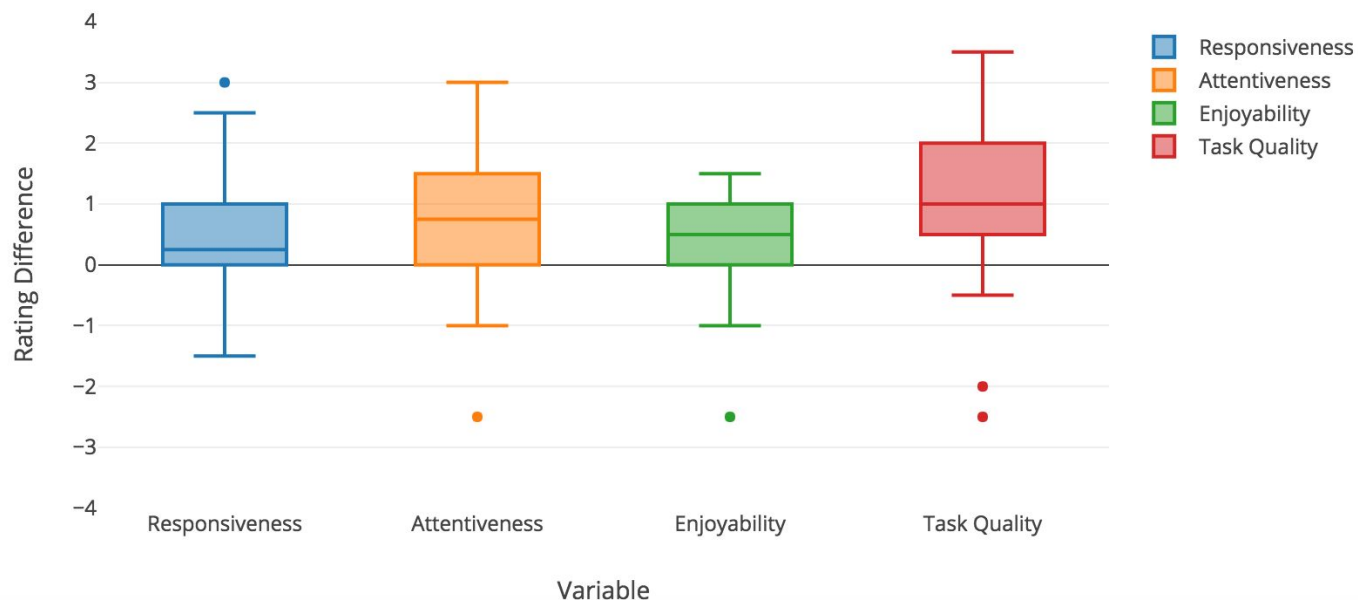Ratings for Non-Incremental vs. Incremental Systems

Difference in Incremental and Non-Incremental Ratings

Difference in Incremental and Non-Incremental Ratings

7+ years of English only (N =18)

User Study Results

	all data (N = 24)	7+ yrs English (N = 18)
responsiveness	p = .0384	p = .0327
attentiveness	p = .0576	p = .0384
enjoyability	p = .0835	p = .0384
task quality	p = .0173	p = .0154

significant if p-value < .05

Conclusion

- objectively more responsive

- rated as more responsive by users

  - significantly higher ratings for *movie quality*

  - tendency for higher *attentiveness*, *enjoyability* ratings