Bott & Noveck (2004)

Some utterances are underinformative.
The onset and time course of scalar inferences

Theoretical background

neoGricean theory (Levinson, 2000)

- scalar implicatures are computed by default
- added to the utterance meaning
- unless contexts does not support their computation

later cancellation

- scalar reasoning is triggered by Horn scales: *relatively* effortless

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Theoretical background

contextualist approach (Relevance Theory: Sperber & Wilson, 1995)

- scalar implicatures are contextually driven
- added to the utterance meaning if contexts supports their computation
- scalar reasoning is contextually triggered by Horn scales:
  relatively effortful

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Theoretical background

neoGricean theory
(Levinson, 2000)

contextualist approach
(Relevance Theory:
Sperber & Wilson, 1995)

SI computation

default — optional

SI processing cost

low or none — high

SI suspension/cancellation

implicature computation → cancellation (**cost**)

literal meaning → implicature computation (**cost**)

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STIMULI

Examples of the Sentence Types used in Experiments 1-4

Reference	Example sentence	Appropriate Response
T1	Some elephants are mammals	?
T2	Some mammals are elephants	T
T3	Some elephants are insects	F
T4	All elephants are mammals	T
T5	All mammals are elephants	F
T6	All elephants are insects	F

underinformative
(false under scalar strengthening)

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exp 1: forced instruction (respond logically vs. pragmatically)

decision task

experimental manipulation: instruction on how to respond (be logical vs pragmatic!)

predictions:

neoGricean theory (Levinson, 2000)

logical responders **>** pragmatic responders

SI must be cancelled

contextualist approach (Relevance Theory: Sperber & Wilson, 1995)

logical responders **<** pragmatic responders

SI must be derived

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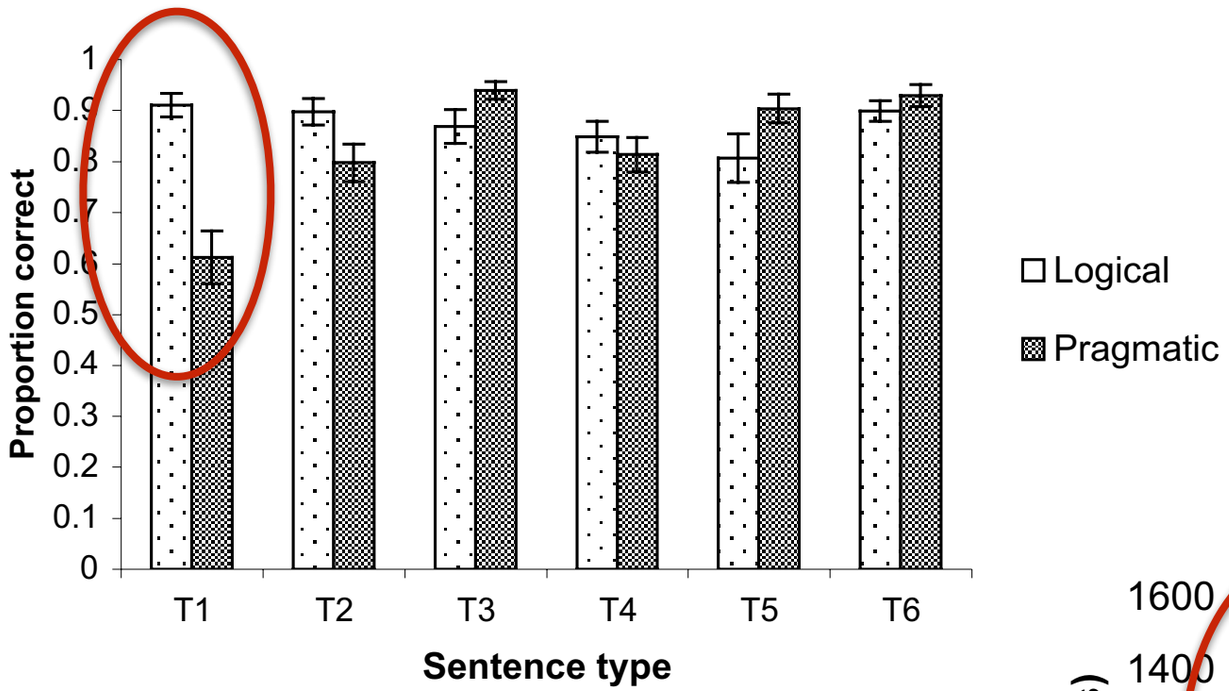
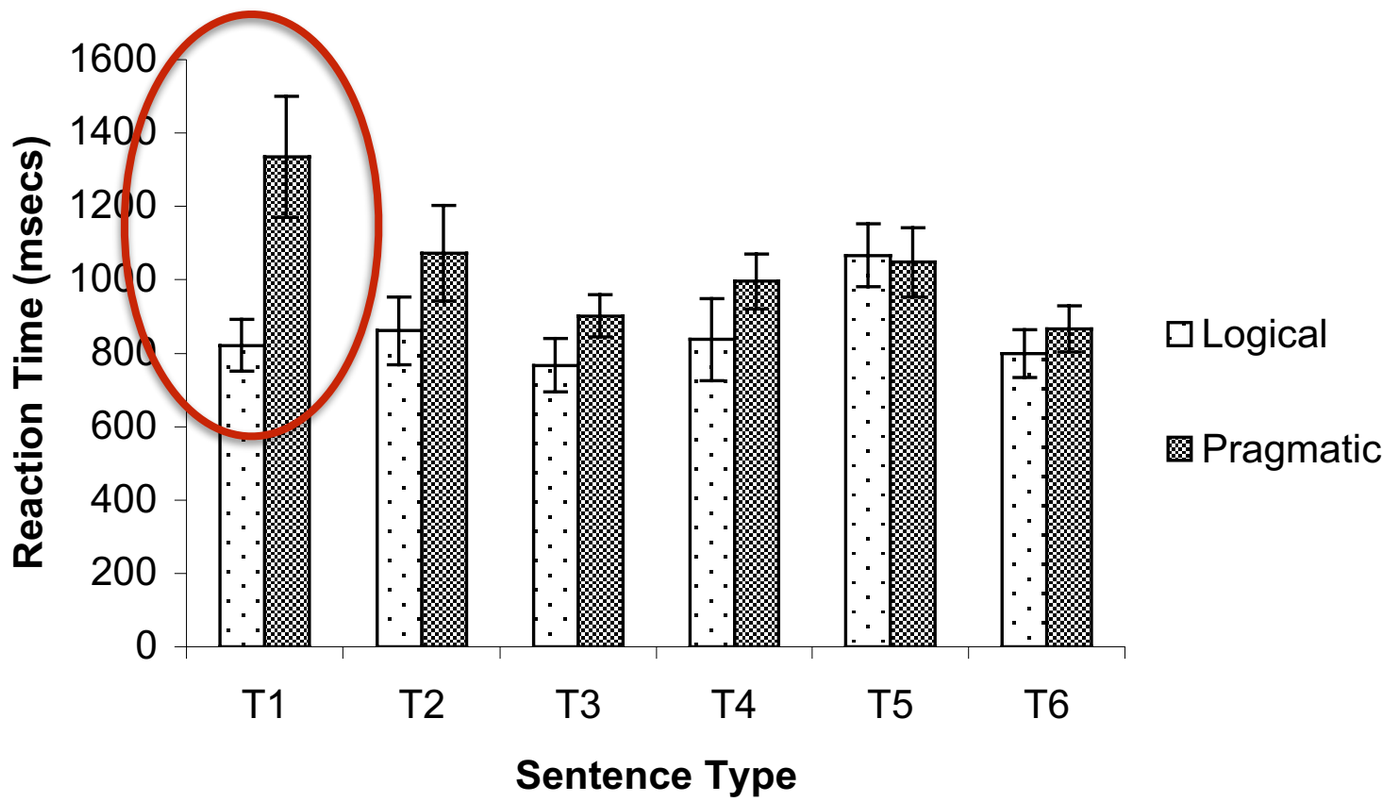
exp 1: forced instruction (respond logically vs. pragmatically)





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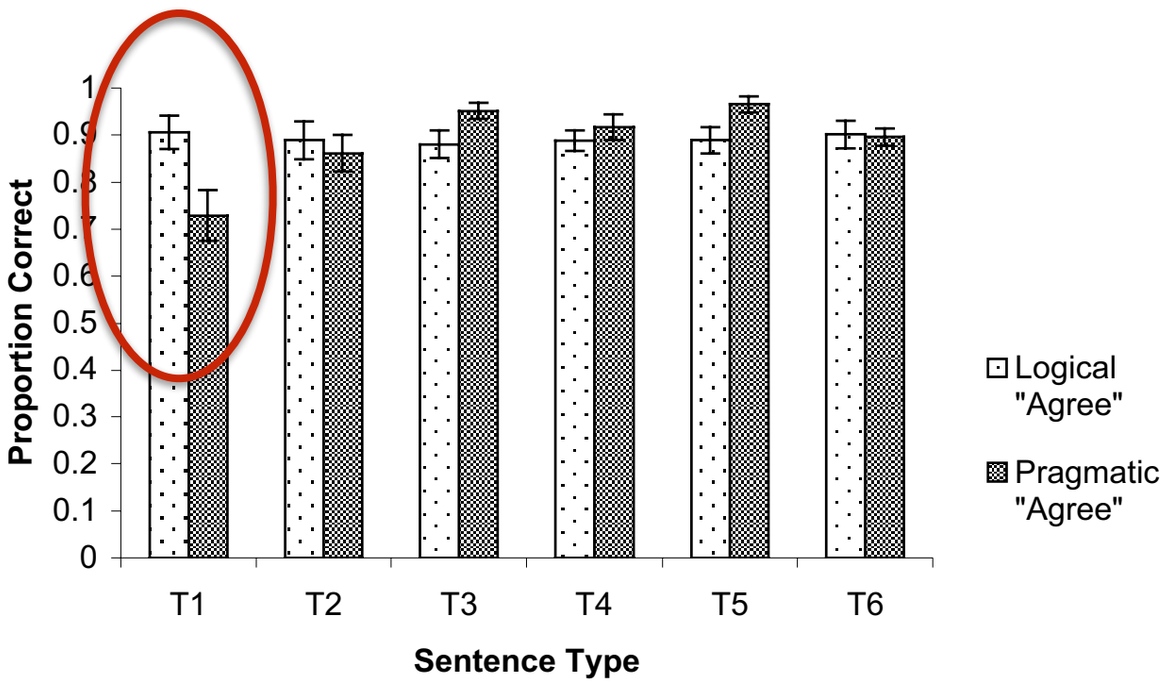
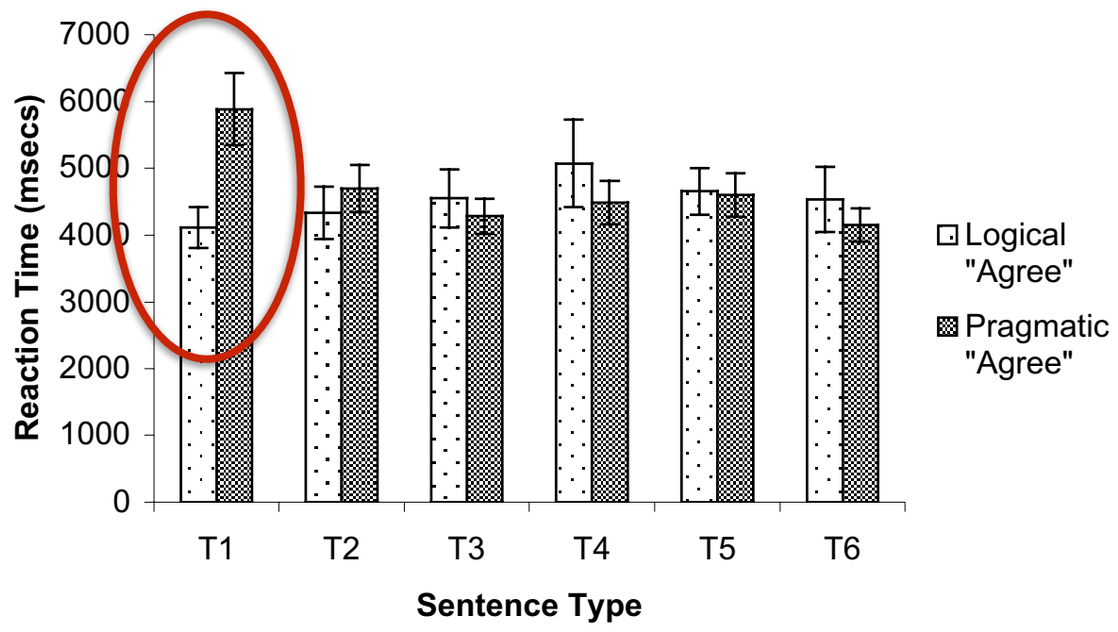
was the effect caused by the increased difficulty of "saying no"?

exp 2: agree vs. disagree

Mary says: some elephants are mammals.

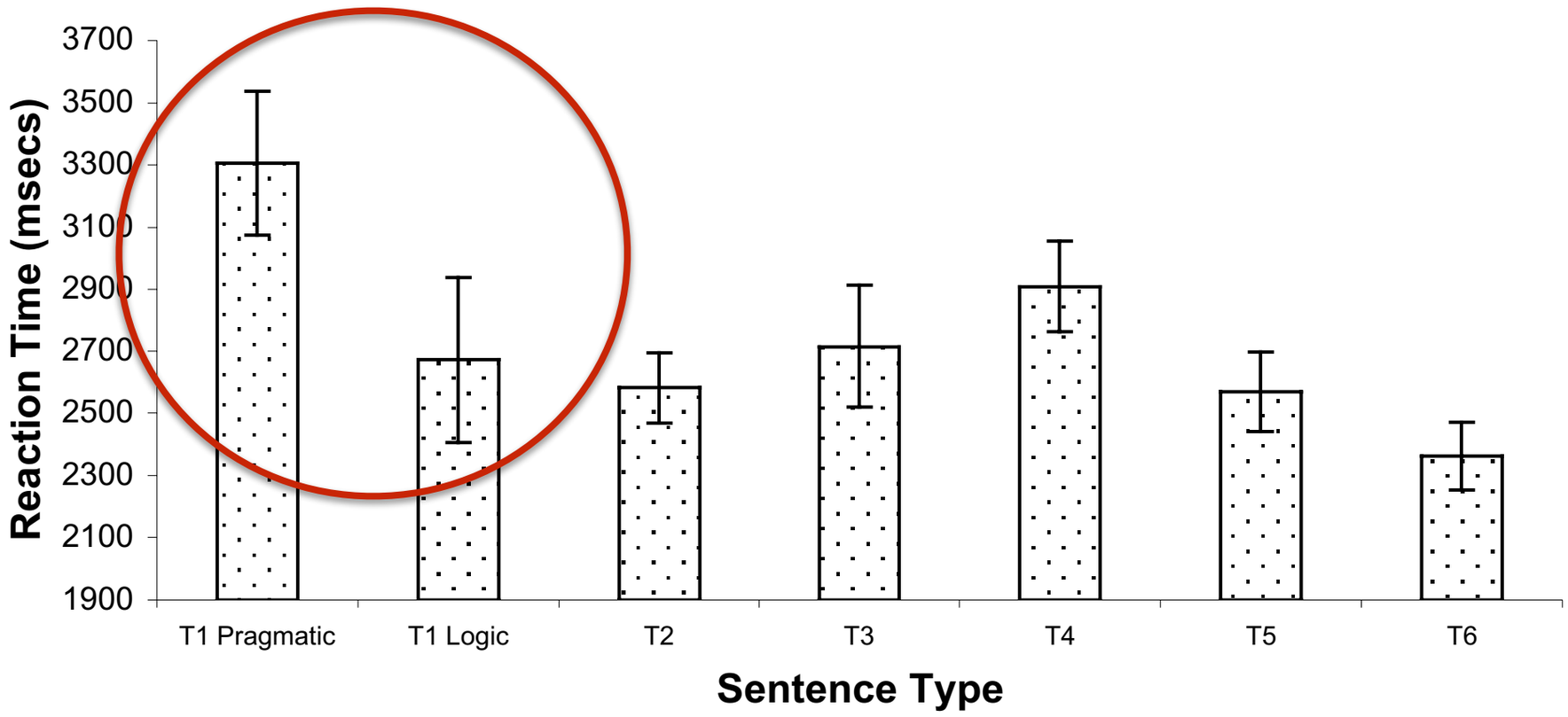




was the effect caused by the instructions?

exp 3: no instructions participants are left free to decide

60% of pragmatic responses vs. 40% of logical responses



does the computation of a scalar implicature really require time?

exp 4: long condition (3 s) vs. short condition (0.9 s)

True responses

Sentence	Example	Short Lag	Long lag	Response difference
T1	Some elephants are mammals	0.72 (0.053)	0.56 (0.095)	-0.16
T2	Some mammals are elephants	0.79 (0.021)	0.79 (0.038)	0.00
T3	Some elephants are insects	0.12 (0.012)	0.09 (0.007)	+0.03
T4	All elephants are mammals	0.75 (0.027)	0.82 (0.024)	+0.07
T5	All mammals are elephants	0.25 (0.061)	0.16 (0.022)	+0.09
T6	All elephants are insects	0.19 (0.017)	0.12 (0.011)	+0.07

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conclusions

- scalar implicatures are not derived by default (60% of implicatures)
- scalar implicatures require processing time (cognitive cost)
- the literal meaning is more readily available than the pragmatic one
- Relevance Theory provides a better account than neoGricean defaultism