

Introduction

In language comprehension research it is often implicitly or explicitly assumed that yes/no-decisions after reading sentences or texts are subject to polarity-based interference: In particular, responding with 'yes' after reading a negative sentence is assumed to be especially difficult. To our knowledge, polarity-based interference has as yet not been systematically investigated in language comprehension research. In classical sentence-verification studies, latencies typically exhibit a sentence-polarity-by-truth-value interaction (see below). At first sight, this might be considered positive evidence for the idea of polarity-based interference. However, the observed latency differences may also reflect differences in the complexity of the verification process (cf. Carpenter & Just, 1975; Clark 1974). Moreover, participants in these studies usually did not react with 'yes' and 'no' but with 'true' and 'false'. The goal of the present study was to systematically investigate the idea of polarity-based interference.

Version	Sentence Material	Response	Latencies	
True Affirmative (TA): False Affirmative (FA): True Negative (TN): False Negative (FN):	The star is above the plus. The plus is above the star. The plus is not above the star. The star is not above the plus.	'True' 'False' 'True' 'False'		With affirmative sentences, the true condition leads to faster latencies than the false condition. With negative sentences, the false condition leads to faster latencies than the true condition (e.g. Carpenter & Just, 1975).

Experiments

We conducted 4 experiments in which participants read short narratives with either an affirmative or a negative final sentence. After each narrative, a binary decision-task was presented. Type of task was manipulated between experiments: Experiment 1 employed a lexical decision task, Experiment 2 a probe-recognition, and in Experiments 3 and 4, participants decided whether or not the probe named an object that would fit on an A4-paper. Thus, the task required searching the representation only in Experiment 2, and the correct response was confounded with a potentially relevant variable only in Experiments 1 and 2 (mentioned/not-mentioned and word/non-word, respectively). In Experiments 1 through 3, mentioned probe words were from the final sentence of the narrative, whereas in Experiment 4 they came from an earlier sentence.

After a five hour journey the Neumanns finally arrived at their summer cottage. The children immediately rummaged out all rooms for toys. In the basement they found an old beach ball. When they tried to blow air into it, they discovered that it **was / was not kaput**.

Binary Decision Task

Exp. 1 (LD): 'yes'-response: **kaput** 'no' response: **egirn**
Exp. 2 (PR): 'yes'-response: **kaput** 'no'-response: **huge**

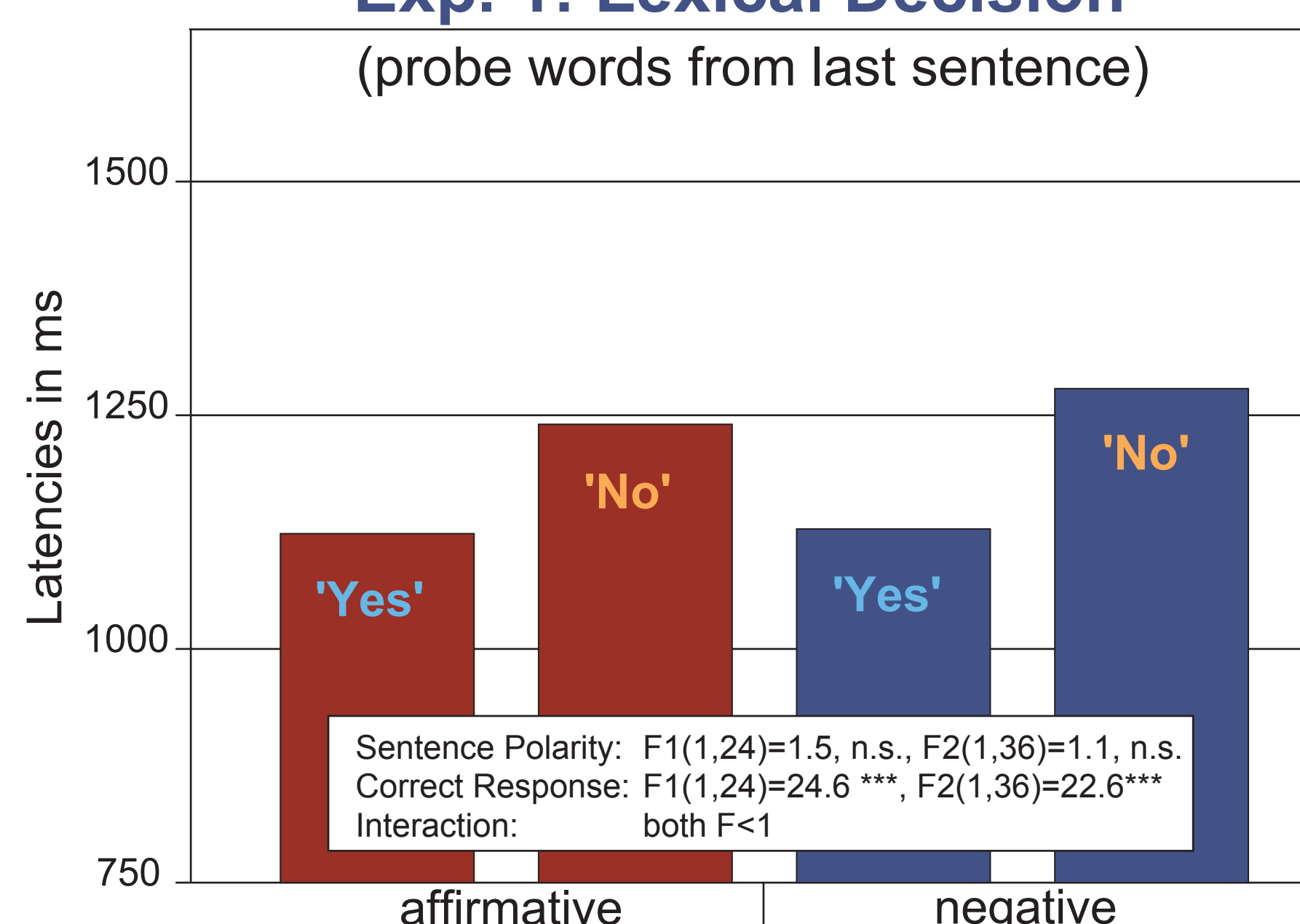
Participants: 28 / 36 undergraduates of TU Berlin.

Materials: 40 German experimental narratives and 20 fillers

Procedure: Narratives were presented sentence by sentence, self paced. Probe-words were presented after the final sentence of the narrative.

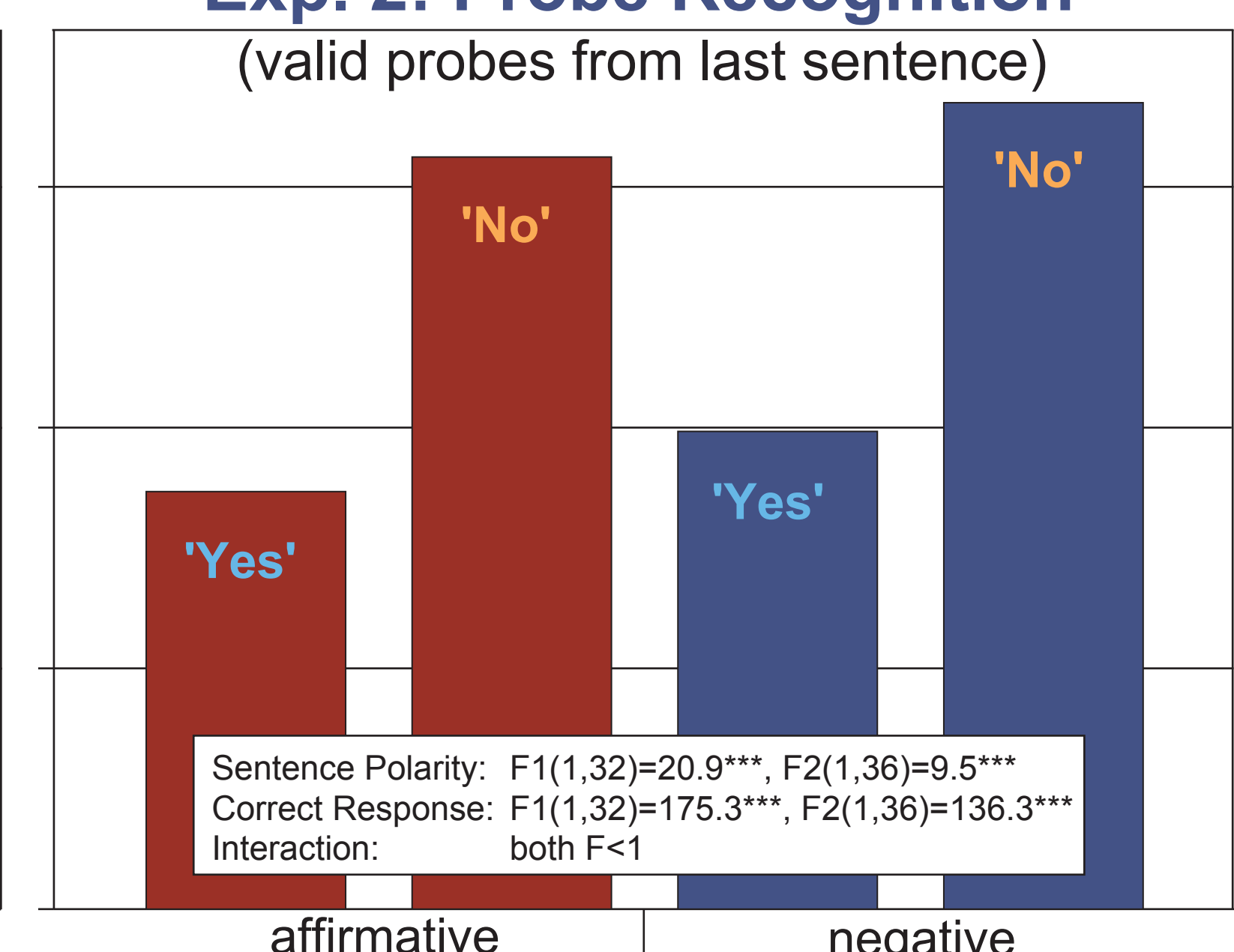
Exp. 1: Lexical Decision

(probe words from last sentence)



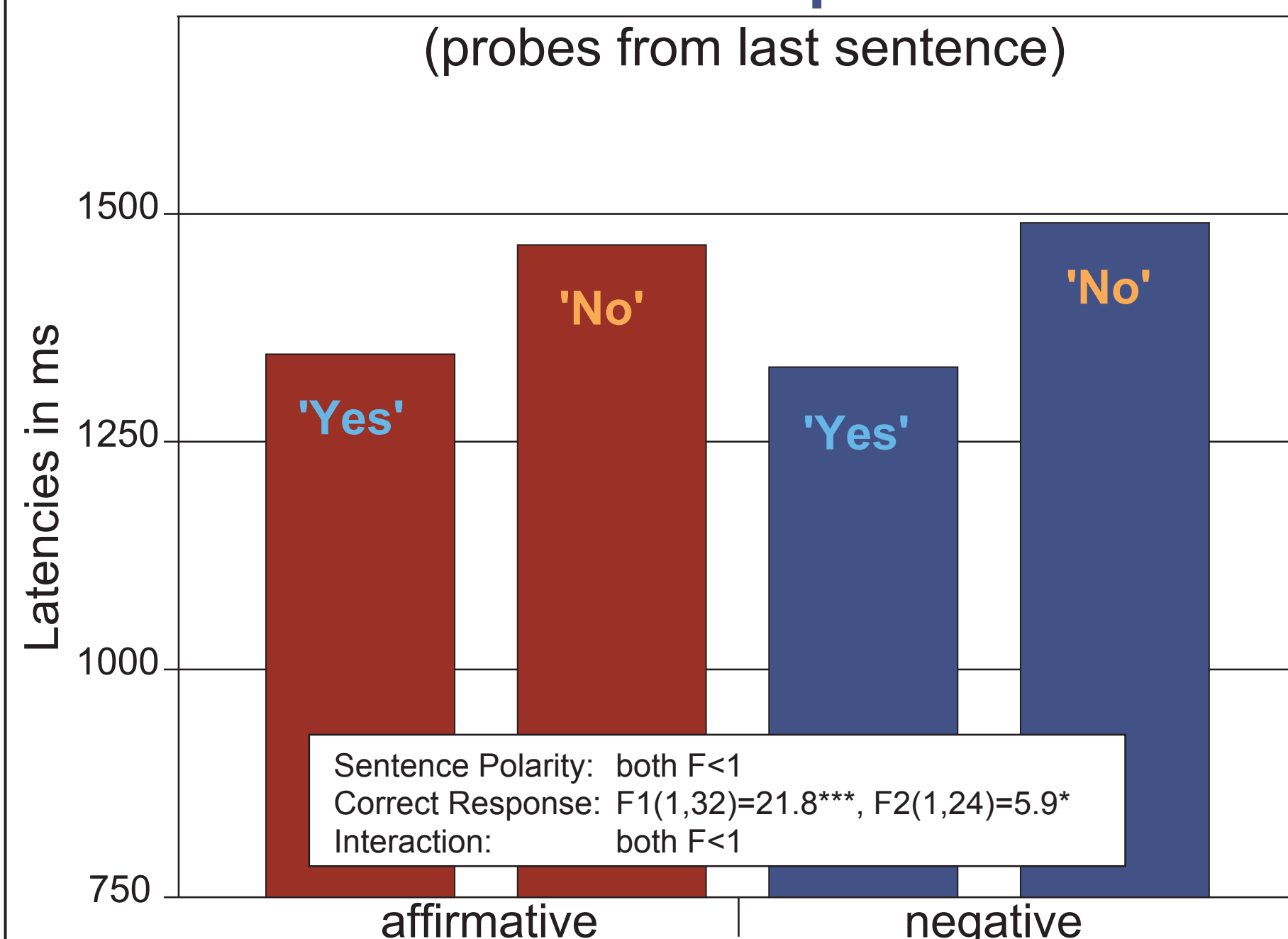
Exp. 2: Probe Recognition

(valid probes from last sentence)

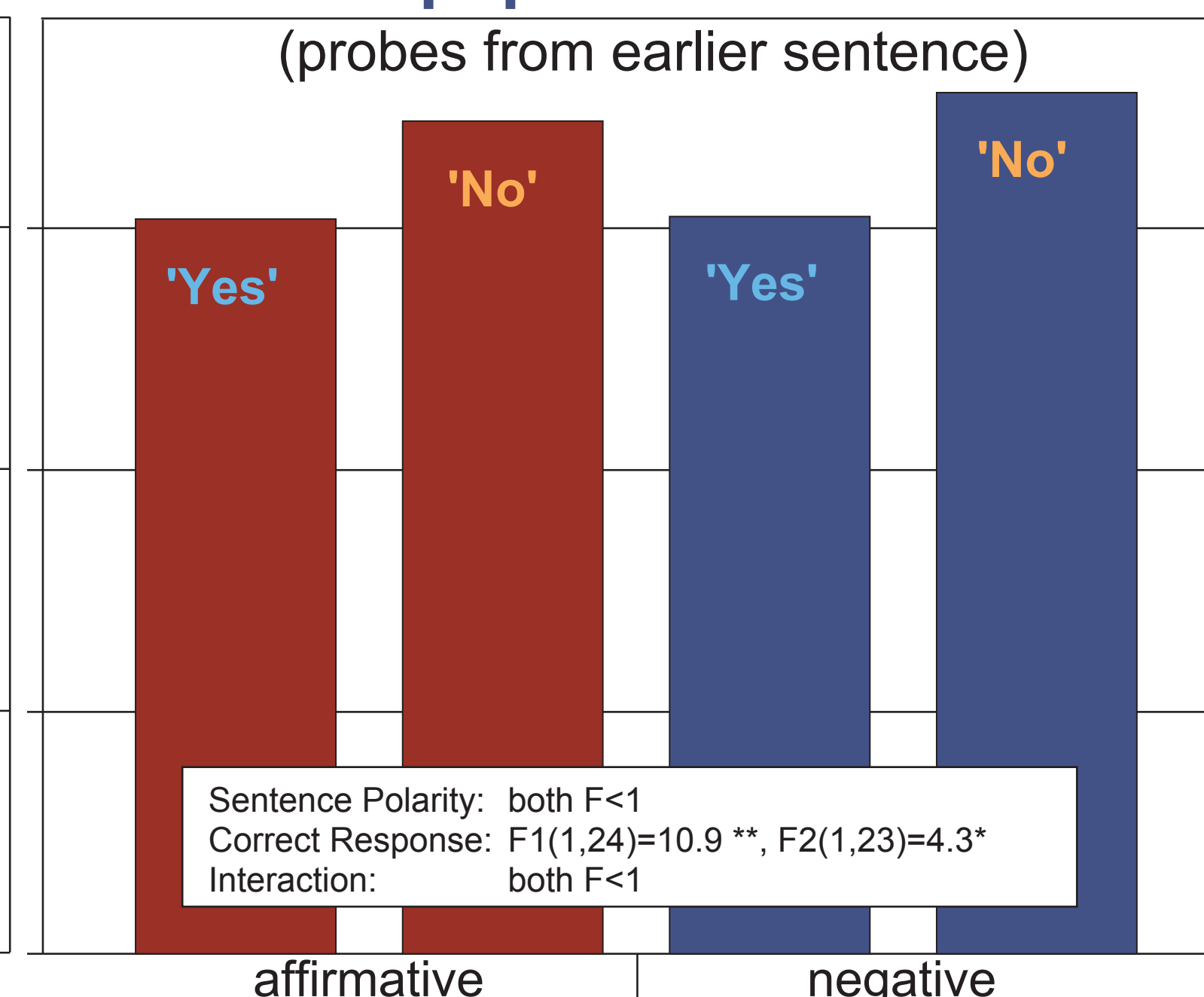


Experiments 3 & 4: Fits on A4-paper?

(probes from last sentence)



(probes from earlier sentence)



Claudia worked as a hostess on a software fair. When she entered the exhibition hall, many booths were being built up. After a while she finally spotted the booth of her company. A **business card / poster** was laying on the table. One of the assistants at the booth told her about some changes in the program. Claudia learned that a / **no car / cell phone** was going to be raffled.

Binary Decision Task: Does the object fit on an A4 paper?

Exp. 3: 'Yes' response: **cell phone** 'No' response: **car**
Exp. 4: 'Yes' response: **business card** 'No' response: **poster**

Participants: 36 / 28 undergraduates of TU Berlin.

Materials: 28 German experimental narratives and 28 fillers

Procedure: Narratives were presented sentence by sentence, self paced. Probe-words were presented after the final sentence of the narrative.

Discussion and Conclusions

We measured latencies in different binary-decision tasks immediately after participants read a narrative with an affirmative or a negative final sentence. Independent of whether responding did or did not require searching the mental representation of the text, whether the response was or was not confounded with a potentially relevant variable (e.g., word vs. non-word; mentioned vs. not-mentioned), and whether probe words had been mentioned in the final or in an earlier sentence of the narrative, 'yes'-responses were always significantly shorter than 'no'-responses. There was no evidence whatsoever for a response-by-polarity interaction. These results clearly speak against the idea of polarity-based interference.