

## Awareness of speakers as intentional communicators affects next-word expectations in a Cloze task

Vilde R. S. Reksnes, Alice Rees, Chris Cummins, Hannah Rohde  
University of Edinburgh

Prior work shows comprehenders rely on real-world knowledge when guessing upcoming words (*taking a sip from the waterfall* is more expected than *transmitter*; Kutas & Hillyard 1980). There is also evidence that speakers mention atypical content where they would omit typical content (speakers are more likely to produce *stab with an icepick* over *stab with a knife*; Brown & Dell 1987) and that comprehenders are sensitive to this (Rohde, Futrell, & Lucas, 2021; Kravtchenko & Demberg 2015). These complementary findings are taken to reflect constraints on cooperative communication whereby speakers' contributions are expected to be appropriately informative and relevant (Grice 1975). Comprehenders' guesses about upcoming words thus depend on (at least) two kinds of predictions - one is about the real world (what situations are probable) and one is about the speaker's goals (what content do we expect cooperative speakers to mention). Depending on comprehenders' sensitivity to the speaker having communicative intentions, comprehenders' estimate of whether a particular situation will be worth mentioning may vary. Here we elicit sentence completions via a Cloze task as an index of comprehenders' expectations about upcoming material (Taylor 1953). We manipulate the salience of the speaker and show that the more aware participants are of the speaker, the more informative they expect the speaker's contribution to be.

Participants (N=400) read sentences about one of 20 locations, as in (1), and wrote the word or words that they expected as the completion. We varied the salience of the speaker in a between-participants design: the **bare condition** only mentions the location; the **third person condition** invokes a speaker talking about someone at the location; the **first person condition** directly mentions the speaker; and the **communicative condition** adds a photograph of a person speaking (Fig.1). If comprehenders are made increasingly aware across conditions of an intentional speaker behind the utterance - one whose contribution ought to be subject to the constraints of cooperative communication - they should show an increase in informative completions across conditions. We measure the informativity of participants' responses with three measures: variability of responses (entropy score per location to measure predictability of responses), inclusion of modifiers (which may make otherwise typical content like a 'train' more newsworthy: 'steam train'), and typicality of objects mentioned (via an independent elicitation task, N=22, to establish which objects appear most plausibly in each location).

The results in Table 1 confirm that the communicative condition elicited the most variability (i.e., more unpredictability; main effect of condition in a mixed-effect linear regression with RE location,  $p < 0.001$ ; higher entropy for communicative/1<sup>st</sup>/3<sup>rd</sup> than baseline bare and also communicative > 1<sup>st</sup>), the highest modification rates (logistic regression with RE location and Participant;  $p < 0.001$ ; same pattern as entropy), and the lowest typicality (linear regression,  $p < 0.001$ ; same pattern).

In sum, we show that guesses about upcoming words in a sentence-completion Cloze task are malleable, based not on changing features of the situation that the sentence describes but on changing emphasis on the speaker and their intentions. Beyond the methodological point that Cloze task completions should not be treated as static measures of expectancy, the results highlight the importance of characterizing comprehenders' model of speakers and their communicative intentions in theories of expectation-driven processing.

1) **Example trial for the train station location**

- [bare] At the train station, there's \_\_\_\_\_
- [third person] They're at the train station, and there's \_\_\_\_\_
- [first person] I'm at the train station, and there's \_\_\_\_\_
- [communicative] I'm at the train station, and there's \_\_\_\_\_  
[photograph of person on phone, utterance in speech bubble]



Fill in the blank:

Figure 1 Example trial for the cinema location in the communicative condition

	<b>Communicative</b>	<b>First Person</b>	<b>Third Person</b>	<b>Bare</b>
<b>Entropy</b>	4.06	3.30	3.33	3.00
<b>Modification</b>	0.64	0.30	0.25	0.13
<b>Typicality</b>	0.03	0.06	0.05	0.06

Table 1 Mean scores for entropy, use of modification and typicality of responses per condition. Entropy and modification were calculated over all the responses for any one location, and then a mean was calculated for each condition. Typicality means were calculated via an independent elicitation task, N=22.

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