

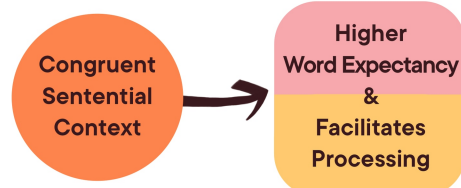
# The Impact of Predictive Validity on Anticipatory Processing During Sentence Comprehension

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## BACKGROUND

(e.g., also known as *cloze probability*; Taylor, 1953)

(e.g., Brothers et al., 2017)



(Brothers et al., 2015, 2017; Huettig, 2015)



## AIM

- may be metabolically costly
- and readers may suppress it when unfavorable.

(e.g., Cevoli et al., 2022; Heyman et al., 2015; Ito et al., 2016; Kuperberg & Jaeger, 2016)

→ with a constraining context, pre-activation occurs even at the phonological/orthographic level.

(e.g., Huettig, 2015; Nieuwland, 2019; Pickering & Gambi, 2018)

## Need for Clarification

But other findings support the automatic-activation.

(e.g., DeLong et al., 2018)

## METHOD AND RESULTS

Participants were randomly allocated to **high** or **low** validity conditions.

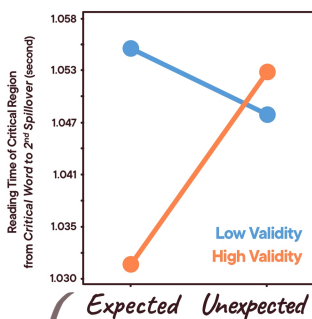


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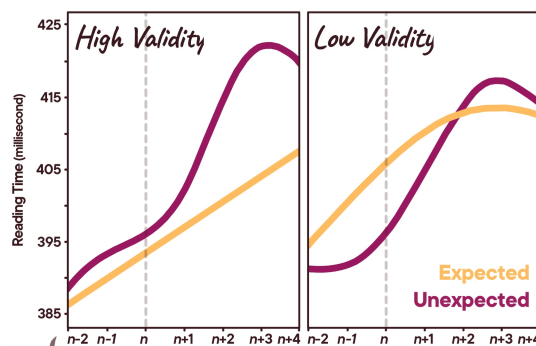
ton presses

**Expected:** Antes de cozinhar a Antónia vestia sempre um avental **que foi bordado** à mão.  
**Unexpected:** Como ficou em segundo lugar também recebeu um avental **que foi bordado** à mão.



**Prediction Validity** had a significant effect on reading time ( $b = -12\text{ms}$ ,  $t(3503) = -2.10$ ,  $p = .036$ ). Participants from the low validity condition took longer to read the critical region compared to those from high validity.

**Participants from the high validity condition read expected words significantly faster than those from the low validity condition ( $b = -13\text{ms}$ ,  $t(1765) = -2.36$ ,  $p = .018$ ).**



Given that all smooth terms were significant ( $p < .001$ ), it can be concluded that the effects of Word Expectancy and Prediction Validity on reading time cannot be completely explained by a linear relationship.

The **Reading Time** in the Critical Region **varies significantly** depending on the conditions of **Word Expectancy** and **Prediction Validity**.



- (1) Readers strategically modulate their anticipatory processing according to their validity environment,
- (2) anticipatory processing can become costly in high validity environments, and
- (3) predictive validity alone may not fully explain these effects. Other factors may play a role!

**Limitations:** We did not consider other factors such as sentence complexity and reading proficiency.