A Self-Paced Reading Benchmark Dataset of German Sentence Processing

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Introduction

- Benchmark data are an important tool for theory development and evaluating model predictions.
- The majority of benchmark data in sentence processing are limited to English (e.g., [6, 1]).

Our Work (in Progress)

- We collect self-paced reading benchmark data for a battery of postulated effects in German.
- So far, 216 out of target 1,100 Prolific subjects have been tested.
- 17 subjects are excluded due to chance-level accuracy on comprehension questions.
- We show the results so far, compared to qualitative and surprisal-based [2, 8] predictions.
- Bayes factors (BF_{10}) are used to evaluate the evidence for an effect being present.

Pre-Registration Protocol

osf.io/wpra9

Results on Spillover Region

osf.io/wtfhx

Predictions and Empirical Estimates

Included Experimental Designs

GPSD (2×2): Garden Paths From Subject-vs.-Direct-Object Ambiguity
Ambiguous/Unambiguous × S–O/O–S — closely replicating [10]

GPSI (2×2): Garden Paths From Subject-vs.-Indirect-Object Ambiguity
Ambiguous/Unambiguous × Active/Passive — loosely replicating [11]

AGAT (2×2): Agreement Attraction in Grammatical Sentences
Singular-/Plural-Controller × Match/Mismatch — closely replicating [4]

LOCO (2×2): Local Coherence
Coherent/Incoherent × Intervener/No-Intervener — closely replicating [12]

SBIN (2×2): Similarity-Based Interference
Subject-Cue [Yes/No] × Animacy-Cue [Yes/No] — closely replicating [13]

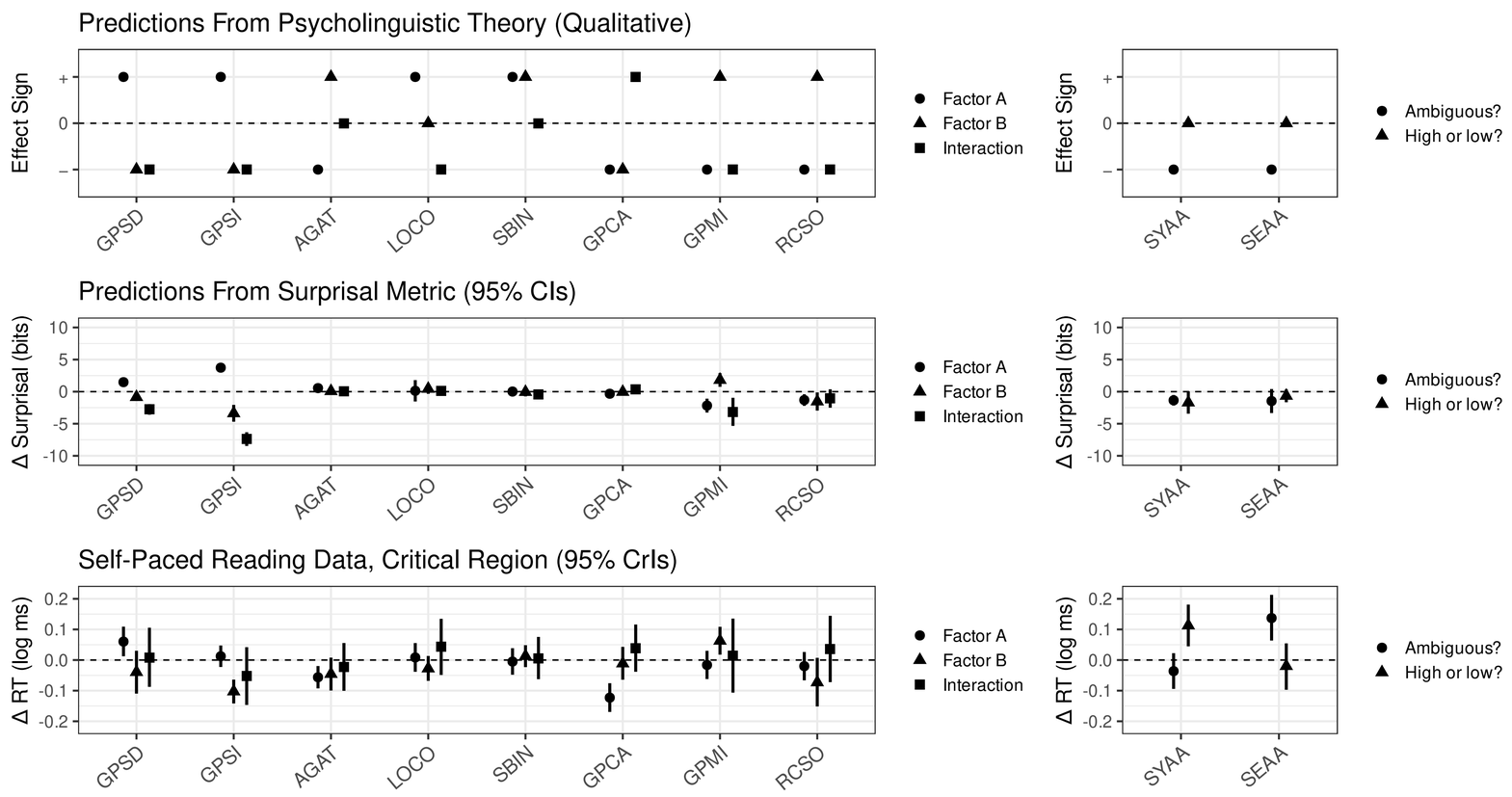
GPCA (2×2): Garden Paths From Coordination Ambiguity
NP-/VP-Coordination × AP-/PP-Modifier — closely replicating [7]

GPMI (2×2): Garden Paths From Modifier-vs.-Indirect-Object Ambiguity
Modifier/No-Modifier × Ambiguous/Unambiguous — closely replicating [3]

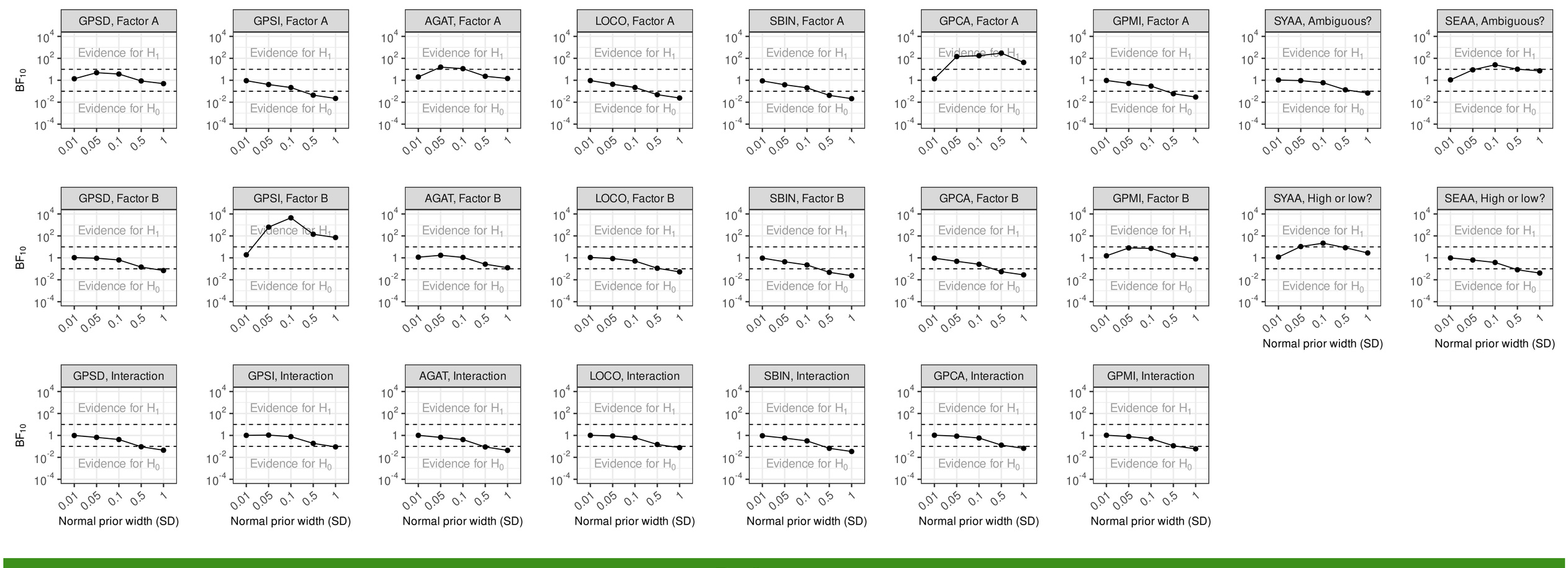
RCSO (2×2): Subject vs. Object Relative Clauses
Subject/Object × Double-/Single-Embedding — German adaptation of [5]

SYAA (3×1): Syntax-Based Attachment Ambiguity
High-/Low-/Ambiguous-Attachment — closely replicating [9]

SEAA (3×1): Semantics-Based Attachment Ambiguity
High-/Low-/Ambiguous-Attachment — German adaptation of [14]



Bayes Factor Analysis (Critical Region)



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