

To squeam or not to squeam: On (asserted?) DP presuppositions

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Introduction and Main Issues

Definite determiners are often taken to be presuppositional.

The most prominent ones are existence and uniqueness presuppositions for singular definites and the homogeneity effect for definite plurals, (1) and (6)

The proposals in the literature, especially when it comes to singular definite DPs, differ; for an overview, see Coppock & Beaver (2015) and (3)

We ran an experiment using the design in (7) to test whether

- different kinds of determiner inferences are treated differently by experimental participants; i.e., whether undefinedness is a homogenous category
- the **presuppositional proposals for singular definites** can be teased apart experimentally
- as argued by Strawson (1950) and others, **information structure affects truth-value intuitions**, contra von Fintel (2004)

- (1) Das Dreieck steht links neben dem Quadrat. Existence Presupposition
-
- true undefined false

Generally the debate for singular definite descriptions centers around the presuppositional component, a violation of which, illustrated in the **undefined** scenario above, is said to trigger ‘squeamishness’. The following presuppositions are discussed:

- (2) \pm Existence/Familiarity $[\text{the heart}]^s = \# / 0$ if $[\text{symbols}]^s = \{\text{anchor, heart, umbrella}\}$
 \pm Uniqueness $[\text{the heart}]^s = \# / 0$ if $[\text{symbols}]^s = \{\text{anchor, heart, heart}\}$

These choices lead to a variety of views on the **<presuppositions of the singular definite article>**:

- (3) ‘Russellian’ \emptyset –Existence; –Uniqueness,
‘Fregean’ $|P| = 1$ +Existence; +Uniqueness; see Elbourne (2013)
‘Weak Familiarity’ $|P| \leq 1$ –Existence; +Uniqueness; see Coppock & Beaver (2015)

But it has been noticed that sometimes, instead of feeling squeamish about assigning a truth value, speakers will readily judge a sentence as true or false, especially in the presence of context:

- (4) CONTEXT: *You are compiling a list of noteworthy people who own a Volkswagen to send promotional material to. A colleague says:*
The king of France owns a Volkswagen. (false)

The accounts add to the picture in (3) by postulating a **<pragmatic influence on truth values>**:

- (5) **Topicality**: Influence of information structure/the QUD may lead to falsity judgments for presupposition failure when trigger is in the comment/not part of the topic (Strawson 1950, Partee 1996, Schoubye 2009)

Verification: Transformation of semantic truth-values, $\{1, 0, \#\}$, into pragmatic ones, $\{\text{TRUE}, \text{FALSE}\}$, when truth value is identifiable independently of the presupposition (Lasnik 1993, von Stechow 2004)

These complicate the theoretical picture further, especially when homogeneity inferences associated with definite plurals are taken into account:

- (6) Die Dreiecke stehen links neben dem Quadrat. Homogeneity Inference
-
- true undefined false

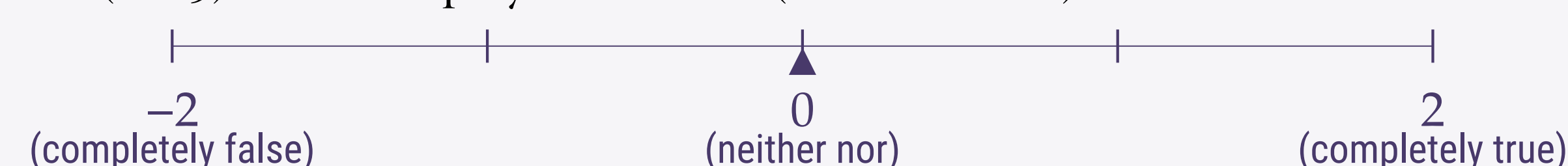
The Experiment

We carried out a continuous trivalent truth-value judgment task:

- (7) $2 \times 2 \times 3$ -Design (within-within; 72 items, 24 participants)
- TRIGGER-TYPE (DP_{SG} vs. DP_{PL}), (1) and (6)
 - WORD ORDER (sentence-initial vs. sentence-medial)
 - TRUTH-VALUE SCENARIO (**true** vs. **undefined** vs. **false**), see (1) and (6)

Though we additionally tracked various indices related to processing by recording the slider movements in the real-time, we will not discuss these data here.

The ternary judgment task is inspired by the work on homogeneity effects in Križ & Chemla (2015), which employed the same (albeit discrete) scale.



Filler and Control Items 84 items, 7 conditions, 5 shown below; just like the critical items, in two syntactic permutations (not shown below)

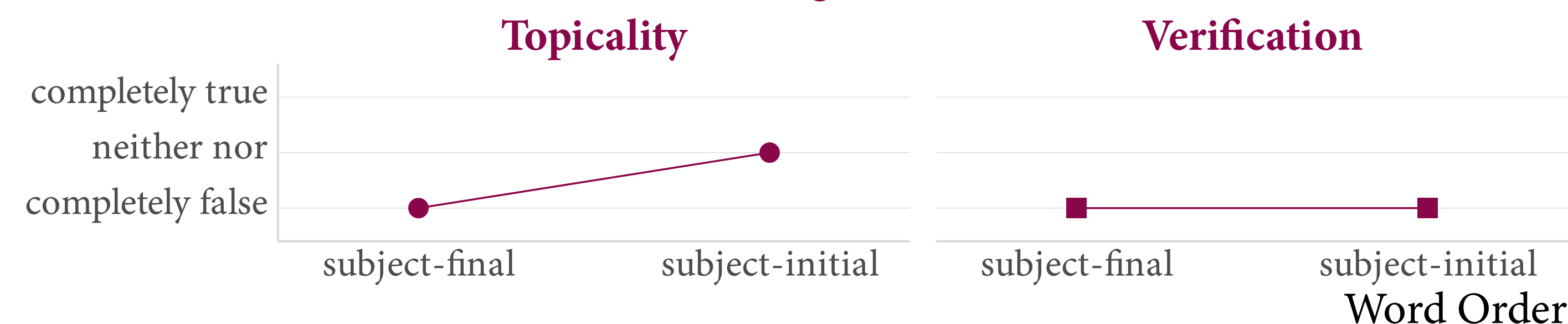
Scalar Implicature₍₊₎ Einige der Wolken stehen links neben der Rakete. Scalar Implicature₍₋₎ Einige der Halbmonde stehen rechts neben dem Anker. Uniqueness₍₋₎ Die Wolke steht links neben dem Schild.

Indefinite₍₋₎ Eine Wolke steht links neben der Kamera. Double Plural Ein Schild steht direkt links neben der Wolke.

Predictions: Presuppositions of DP_{SG} ; see (3)



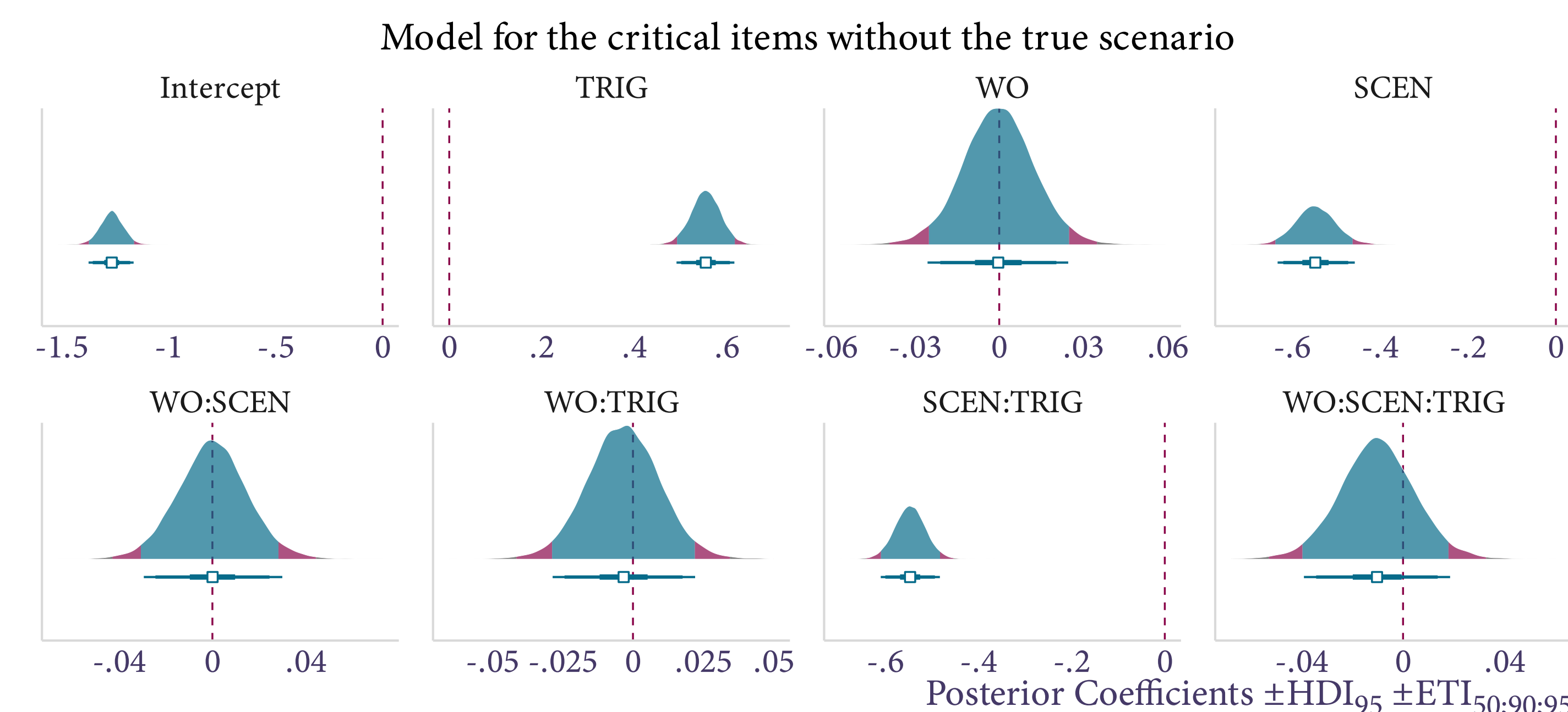
Predictions: Pragmatic Truth Values; see (5)



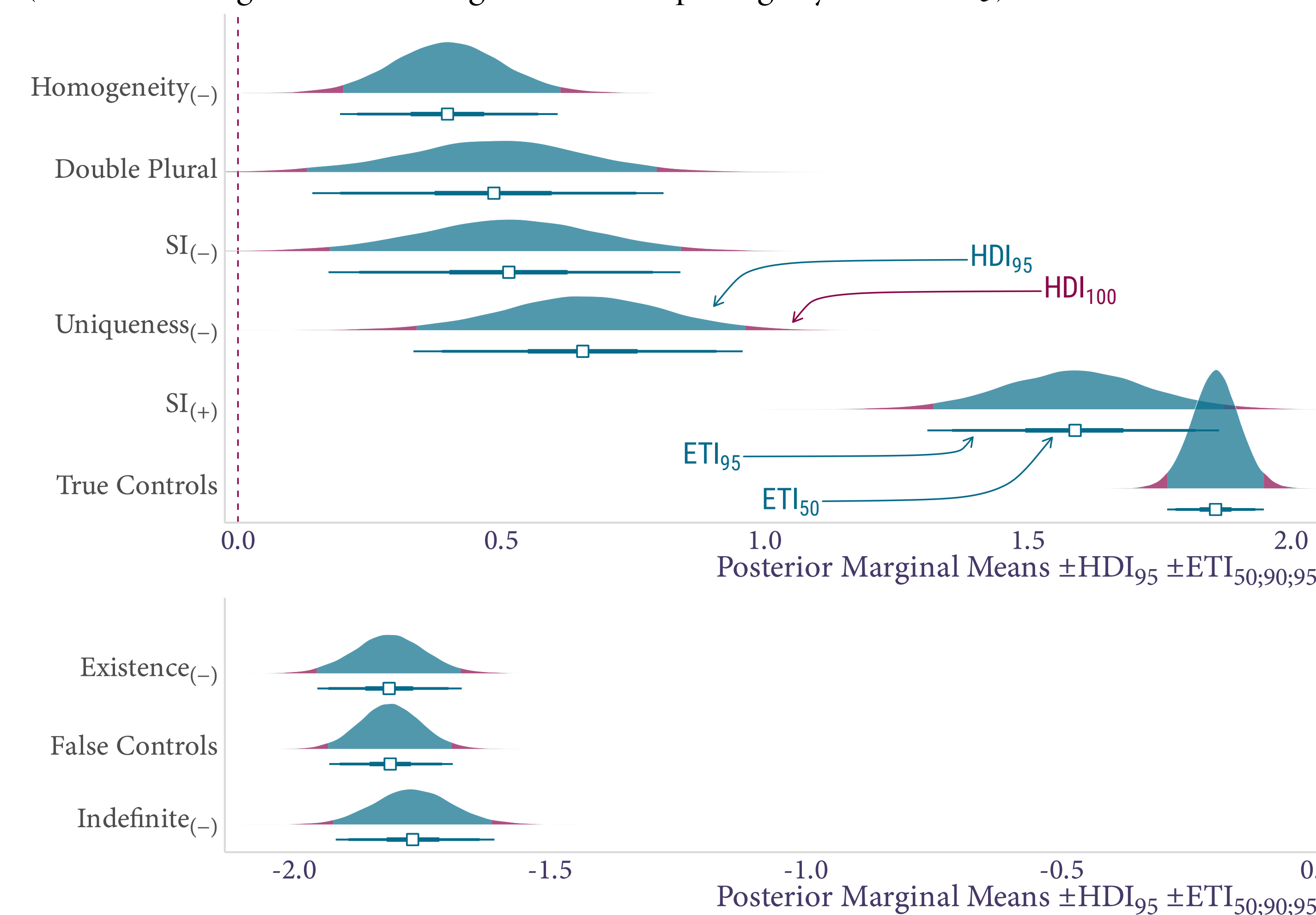
Data Analysis We fit the following maximal (Barr et al. 2013) Bayesian linear mixed models with sum-coded predictors in R (4.3.0; R Core Team 2023) using **brms** (Bürkner 2021) with 10k iterations, 4 chains, weakly informative $t(0, .25, 3)$ slope and default priors otherwise:

$$M_{\text{CRR}}: y \sim 1 + \text{SCEN} * \text{TRIG} * \text{WO} + (1 + \text{SCEN} * \text{TRIG} * \text{WO} \mid \text{ITEM}) + (1 + \text{SCEN} * \text{TRIG} * \text{WO} \mid \text{ID})$$

$$M_{\text{FILL}}: y \sim 1 + \text{COND} + (1 + \text{COND} \mid \text{ITEM}) + (1 + \text{COND} \mid \text{ID})$$



Now, let's compare the posterior distributions for the different item types in the two models (estimated marginal effects using the **emmeans** package by Lenth 2023):



Conclusions and a Follow-Up

- Partial replication of the results in Križ & Chemla (2015) for definite plurals
- The syntactic manipulation had no effect, indicating either that word order has no effect or that it was a poor operationalization for testing the **Topicality** view.
- The results appear to align with the **Weak Familiarity** view of definite singular DPs, where existence is not presupposed, but uniqueness is.
- With this in mind, it would be interesting to follow up on these results with an experiment that also includes:

- the weak-strong determiner difference in German (Schwarz 2009)
- negation to test the projective properties of existence/uniqueness

- (8) Das Dreieck steht $\left\{ \begin{array}{c} \emptyset \\ \text{nicht} \end{array} \right\}$ links $\left\{ \begin{array}{c} \text{vom} \\ \text{von dem} \end{array} \right\}$ Quadrat.