

Pronoun accentuation produces interference effects in memory for alternatives

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Background

Memory effects of prosodic prominence of nouns

- Better recall of **denoted referent** and associated information:
 - ▶ **FOCUS** [1–5] → richer semantic representation (more specific memory trace for focussed referent)
 - ▶ **Contrastive TOPIC** [1, 6] → topic referent as anchor in structured discourse representation [6]
- Better recall also for **alternatives** [2–4]
- Effects may be **long-lasting**: up to a day [2]

Pronouns

- Use of pronoun → access of **antecedent referent** in memory
- Accent on pronoun → contrastive interpretation → access also of **alternatives in discourse** [7–9]
- **d-pronouns**: used in colloquial speech [10]; more easily accented than regular personal pronouns

Hypothesis

Pronoun accentuation enhances memory for denoted referent and alternatives.

Recall study: German

- **Procedure**: 96 participants
 - ▶ listened to 60 stories containing a sentence with a *d*-pronoun (target sentence)
 - ▶ verified a true or false statement, which was modelled on the target sentence
- **Design**: 2x2x3
 - ▶ **Pronoun accent**: **Unaccented** vs. **Accented (L+H*)**
 - ▶ **Delay of verification**: none vs. 24 hours (between participants)
 - ▶ **Statement type**: subject referent as in original (**TrueRef**) vs. mentioned alternative (**ContAlt**) vs. plausible unmentioned alternative (**NewAlt**)
- 30 items, 30 fillers

Sample Item: Listening phase

The results from the animal breeding contest in Altdorf have just come in. A few of our people were there, remember. For example, our **rabbit breeder** and our **horse breeder** took part. Our **pigeon breeder** had the most beautiful animals.

Am Ende hat **DER/der** echt viele Preise gewonnen.

at.the end has he really many prizes won

‘At the end he really won lots of prizes.’

That was really impressive.

Sample Item: Verification phase

Der **Taubenzüchter** hat echt viele Preise gewonnen.

Der **Kaninchen-/Pferdezüchter** hat echt viele Preise gewonnen.

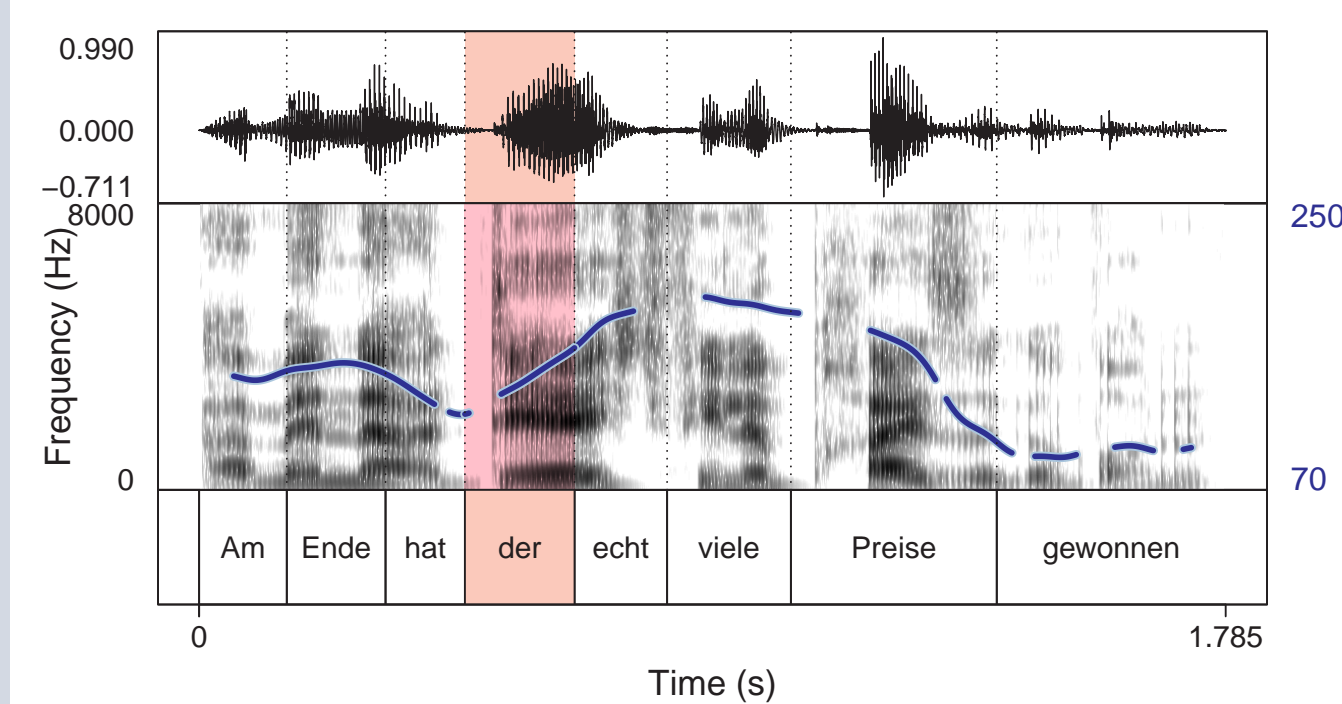
Der **Hühnerzüchter** hat echt viele Preise gewonnen.

the **TrueRef** / **ContAlt** / **NewAlt** has really many prizes won

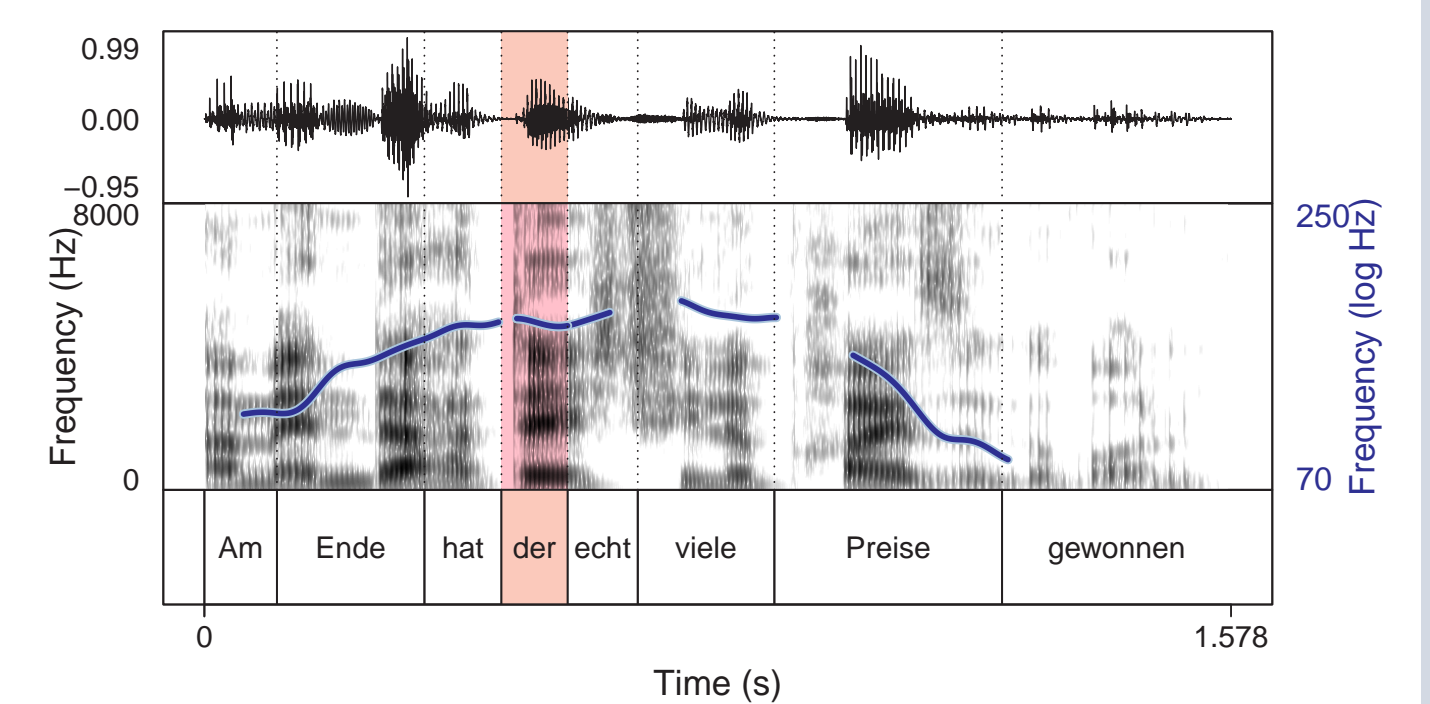
‘The **pigeon** / **rabbit** / **horse** / **chicken** breeder has won really many prizes.’

Sample Item: Prosody

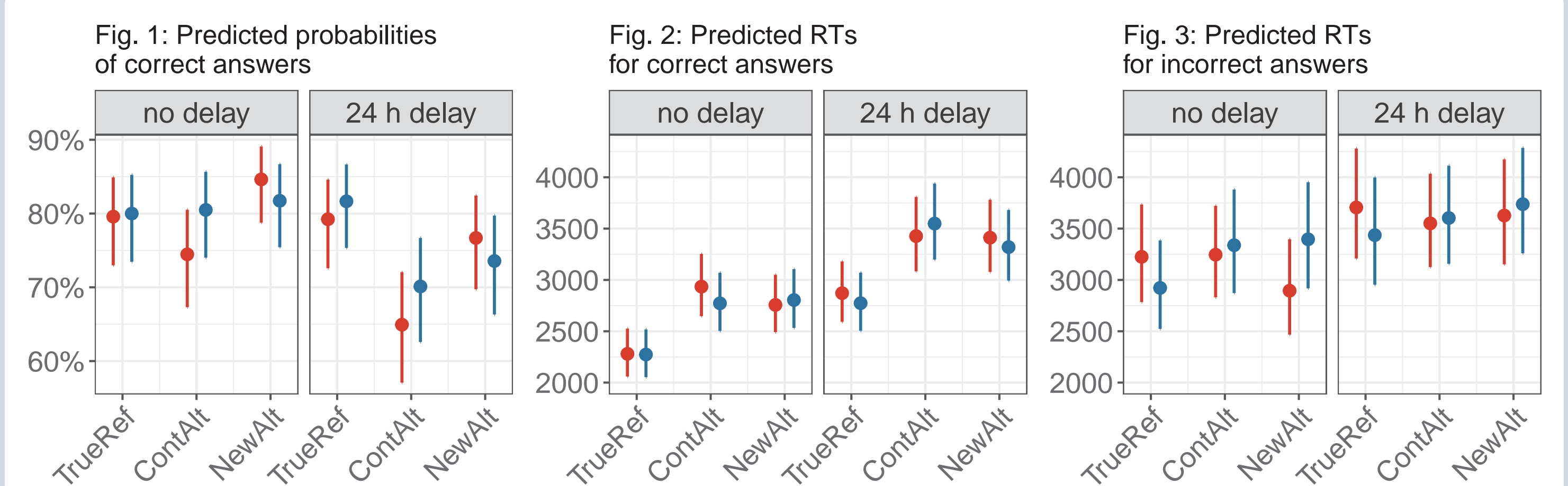
Accented *d*-pronoun



Unaccented *d*-pronoun



Results



Recall accuracy (Fig. 1)

- **TrueRef** > **NewAlt** > **ContAlt**
 - ▶ True propositions are remembered best
 - ▶ Mentioned referential alternatives are also stored → lures for illusory recall
 - ▶ Unmentioned alternatives are safer rejects
- **ContAlt: Unaccented** > **Accented**
 - ▶ Accent enhances lure quality of mentioned alternatives
- **No delay** > **24h** (except for **TrueRef**)
 - ▶ Long term advantage for true propositions

Reaction times for correct answers (Fig. 2)

- **TrueRef** < **NewAlt** = **ContAlt**
 - ▶ Overall advantage for true propositions
- **24h** > **No delay**

Reaction times for incorrect answers (Fig. 3)

- **TrueRef: Accented** > **Unaccented**
NewAlt/ContAlt: Unaccented > **Accented**
 - ▶ Accent slows down incorrect rejection of true proposition, speeds up incorrect acceptance of both types of alternatives → Prosodic prominence makes mentioned alternatives more prominent & activates likely unmentioned alternatives

Discussion

Memory effects of pronoun accentuation

- Similar to nominals for true propositions: better recall
- Opposite effects for contextual alternatives: worse recall
- **Pronoun interpretation**: Pronouns are interpreted with reference to previous discourse
- Accent on pronoun induces *re*-activation of, i.e. access to, antecedent referent *and* alternatives (see Background)
- Arguably greater competition from alternatives in search space due to reduced cue informativity (only gender and number)

References

- [1] Sanford/Sanford/Molle/Emmott (2006) Shallow processing and attention capture in written and spoken discourse. *DiscourseProcesses* 42, 109–130 [2] Fraundorf/Watson/Benjamin (2010) Recognition memory reveals just how CONTRASTIVE contrastive accent really is. *JMemLang* 63, 367–386 [3] Gotzner/Spalek (2019) The life and times of focus alternatives: Tracing the activation of alternatives to a focused constituent in language comprehension. *Lang&LingCompass* 13(2) [4] Yan/Calhoun/Warren (2019) The role of prominence in activating focused words and their alternatives in Mandarin: Evidence from lexical priming and recognition memory. *Lang&Speech* 66, 678–705 [5] Kember/Choi/Yu/Cutler (2019) The processing of linguistic prominence. *Lang&Speech* 64(2), 413–436 [6] Repp/Drenhaus (2015) Intonation influences processing and recall of left-dislocation sentences by indicating topic vs. focus status of dislocated referent. *Lang&CognNeurosc* 30, 324–346 [7] Venditti/Stone/Nanda/Tepper (2002) Discourse constraints on the interpretation of nuclear accented pronouns. *ProcSpeechPros*, 675–678. [8] Brown-Schmidt/Byron/Tanenhaus (2005) Beyond saliency: Interpretation of personal and demonstrative pronouns. *JMemLang* 53.2, 292–313. [9] Kaiser (2011) Saliency and contrast effects in reference resolution: The interpretation of Dutch pronouns and demonstratives. *Lang&CognProc* 26, 1587–1624. [10] Hinterwimmer (2019) Prominent protagonists. *JPragma* 154, 79–91