

Bare plurals, prosody and the interpretation of German relative clauses*

Background

Relative clauses (RCs) can be ambiguous between two kinds of interpretation, the restrictive relative clause (RRC) in (i), and the appositive relative clause (ARC) in (ii):

(i) *Robbie adores the man who wrote 'Rob Roy'.*

(ii) *Robbie adores Scott, who wrote 'Rob Roy'.*

In the RRC, the RC acts as a predicate (type <e,t>) restricting the denotation of the head noun via Predicate Modification (Heim & Kratzer 1998). In the ARC reading, the RC is propositional (type t) and expresses an assertion about the referent of the head noun (Del Gobbo 2007). In every-day contexts, lexical indicators (e.g., *that* → restrictive; *by the way* → appositive), and/or prosodic cues usually resolve this ambiguity (cf. Lehmann 1984). Theoretical accounts claim that prosody determines the interpretation as RRC or ARC (Truckenbrodt 2015). However, empirical evidence on the influence of prosody on the interpretation is mixed (cf. Birkner 2008, Schubö et al. 2015, Trabant 2016 for German). Therefore, the present study tests for RC interpretation preferences and the influence of prosody, using bare plurals as head nouns. It exploits the fact that RCs attached to bare plurals co-vary in their interpretation with the reading of the bare plural: The ARC interpretation corresponds to a kind-referential reading, and the RRC interpretation to a predicate reading (cf. Design). As the kind reading of bare plurals is the default (Chierchia 1998), ARC interpretation should be preferred.

Research Questions

- (Q1): How do adult speakers of German interpret ambiguous RCs?
(Q2): Does prosody influence the interpretation of ambiguous RCs?

Design

Method: Truth-value judgement task

- 12 ambiguous RC items as in (1), differing only in prosodic realisation: 6x **integrated** + 6x **non-integrated**, divided in 2 blocks (balanced order)
- 12x 'no' and 12x 'yes' controls to ensure responses are based on linguistic form (2)+(3)

Participants: 24 adult monolingual native speakers of German (age 18-31; non-linguists)

Procedure: After hearing a report on Robbie the robot's visit to an alien planet with fictional animals, the participant is asked to confirm or reject a puppet's interpretation of the stimuli w.r.t. whether all exemplars have a certain property.

Recording: Robbie really likes felkos_(i) which have green arms.
Puppet: Aha, so all felkos have green arms.
Experim.: Is that right?
Participant: No (→ RRC interpretation)
Yes (→ ARC interpretation)

Conditions:

RCs (differing only in prosody, see Fig. 1a + 1b))

(1) *Robbie mag sehr gerne Felkos, die grüne Arme haben.*
'Robbie really likes felkos_(i) which have green arms.'

NO (control targeting 'no' response)

(2) *Robbie mag nur solche Hewos, die goldene Nasen haben.*
'Robbie only likes those hewos that have golden noses.'

YES (control targeting 'yes' response)

(3) *Rob. mag sehr gerne Burdies, und die haben blaue Ohren.*
'Robbie really likes burdies, and those have blue ears.'

Prosodic realisation

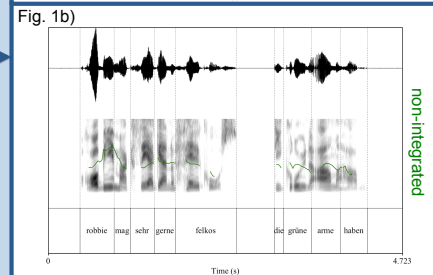
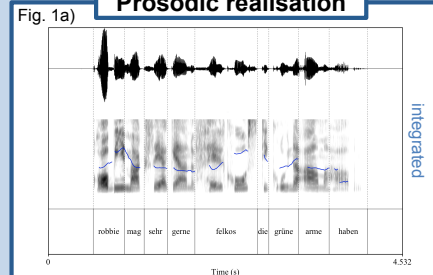
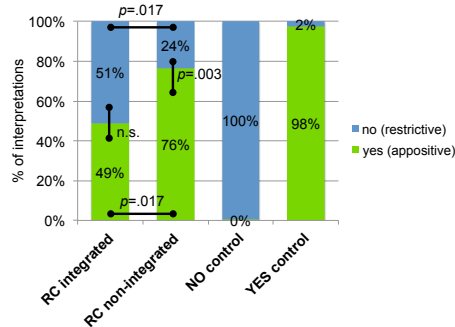


Fig. 2: Interpretation of ambiguous RCs + controls



Wilcoxon test for related samples

Results

- Control conditions target-like, no "don't know" responses
- (Q1): Across conditions, no significant preference for either type of interpretation in ambiguous RCs.
- (Q2): Prosody affects interpretation
 - Within the **non-integrated** prosody condition significantly more **ARC** than **RRC** interpretations ($p=.003$)
 - Significantly more **ARC** interpretations with **non-integrated** than with **integrated** prosody ($p=.017$)
 - Significantly more **RRC** interpretations with **integrated** than with **non-integrated** prosody ($p=.017$)
- No effect of order of prosody blocks

Conclusion

The setting of this experiment does not reveal an overall preference for either RRC or ARC interpretation of ambiguous German RCs (Q1). However, prosody plays a crucial role in determining the interpretation, such that **non-integrated prosody** increases the proportion of **ARC** interpretations significantly as compared to **integrated prosody** (Q2). These results suggest that the type of head noun, the matrix predicate, as well as prosody influence RC interpretation in a complex interaction (see also Trabant 2016). In addition, the pragmatics of the task may have contributed to the **ARC** preference because new fictional species are introduced into the discourse. All these aspects should be considered in future RC research.

Deriving the ARC vs. RRC interpretation

The object position of the matrix verb MÖGEN ('to like') selects for a kind-level argument (Glasbey 2006), which is readily available on the (default) kind interpretation of the bare plural (Chierchia 1998). Thus, the argument grid of the matrix verb can be saturated immediately and the ARC's anaphoric pronoun can directly pick up the kind term. The pause after the bare plural, present only in **non-integrated** prosody, supports this parse. In contrast, deriving the RRC interpretation requires the parser to re-analyse the bare plural as a predicate (<e,t>). Only then can the NP denotation combine with the RC via Predicate Modification. For the modified NP to saturate the matrix verb, the complex predicate ('green-armed felkos') needs to be (re-)converted into a (sub-)kind (type e) denotation via Chierchia's (1998) Ω operator ("down").

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