Hierarchy effects in copular constructions: The PCC corner of German

Jessica Coon[†], Stefan Keine[‡] & Michael Wagner[†] ([†]McGill University, [‡]University of Southern California)

Main claims

- German copula constructions show **hierarchy effects** similar to: PCC effects (e.g. Romance, Basque), inverse constructions (e.g. Algonquian), Agent Focus (e.g. Mayan), and DAT−NOM patterns (e.g. Icelandic)
- What these have in common: **multiple accessible NPs in the domain of a single agreement probe** (see e.g. Béjar & Rezac 2003; Anagnostopoulou 2005; Adger & Harbour 2007; Nevins 2007; Preminger 2014)

  (1) GOOD: 1≫3
       [Probe⁰ [NP$_{[+PART]}$ …[…NP$_{[−PART]}$]]]

  (2) BAD: 3≫1
       [Probe⁰ [NP$_{[−PART]}$ …[…NP$_{[+PART]}$]]]

A Hierarchy Effect in German

(3) **Person:**   (4) **Number:**

a. Ich bin er.   a. Sie sind er.
    I   am he   they are him
b. *Er ist ich.   b. *Er ist sie.
    he is I   he is them

➤ **Hypotheses tested in our experiment:**

  ❶ *3 > Participant, ✓Participant > 3

  ❷ *SG > PL, ✓PL > SG

- No parallel restriction in English

Why German? Why copulas?

- In German copulas, both NPs are nominative (default case) and accessible to *Agree* (see Heycock 2012)
- In English, the predicate NP is inaccessible to agreement because it is accusative (see Bobaljik 2008)

An alternative

- **Heycock (2012)**: The copula agrees with **the more marked NP**, through inversion if it's the predicate:

(5) Das bist Du.   (6) *Das ist Du.
     that are you   that is you

- **Our account:** True 3>2 is ineffable in German (6); (5) is 2>3 with a topicalized predicate:

(7) Das bist [du ~~bist das~~]

- Heycock: "Assumed identity sentences" like (3,4) are semantically asymmetric. **Her Claim:** Inversion is impossible here; (3b,4b) should be fine.

➤ **Our claim:** Agreement is always with non-predicate Hierarchy violations are bad. (3b,4b) should be out. (contra inversion as in Heycock 2012 & refs. there).

Experiment: Design

- **Sentence rating experiment:** English (23 participants) and German (15 participants) 6-point Likert scale (1 – *completely unacceptable*; 6 – *completely acceptable*)
- **Design:** manipulated person and number of both NPs in copula constructions
- **Stimuli:** Background story on role-playing game; each individual trial consisted of rating one assignment:

  (8) *(pointing at you, then at your friend John)*   (9) *(zeigt auf dich, dann auf deinen Freund Karl)*
       You are him.   Du bist er.

- **Control condition:** verb agreement inconsistent with either argument (*You am him; *Du bin er)

Experiment: Results

Person hierarchy effects: **Number hierarchy effects:**
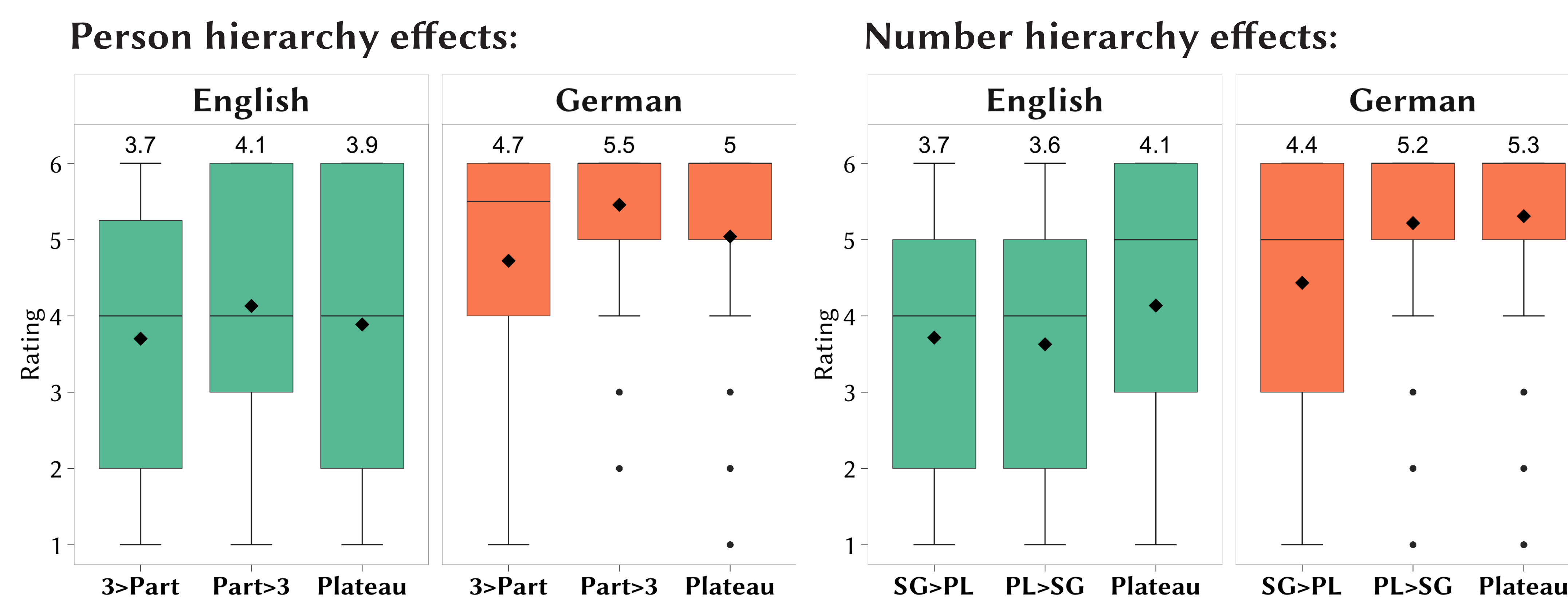
- **Analysis:** Cumulative link mixed model with *Language*, as well as *Person hierarchy*, *Number hierarchy* and their interaction with *Language* as fixed effects, and random intercept and slopes by participant (including interactions)
- **Crosslanguage differences:**

  ❶ significant interaction between Language and 'Part > 3'–'3 > Part' comparison ($z = 2.4$)

  ❷ significant interaction between Language and 'SG > PL'–'PL > SG' comparison ($z = 4.2$)

  ➤ **German:**
    ❶ '3 > Participant' was rated significantly worse than 'Participant > 3'   ($z = 3.8$)
    ❷ 'SG > PL' was rated significantly worse than 'PL > SG'   ($z = 5$)

  ➤ **English:**
    ❶ no difference between '3 > Part' and 'Part > 3'   ($z = 1.1$)
    ❷ no difference between 'SG > PL' and 'PL > SG'   ($z = 0.2$)

➤ **German copula sentences show person and number hierarchy effects. English copula sentences do not.**

Discussion

- The interactions support the view that agreement is always with the subject (cf. Adger & Ramchand 2003), and the claim that German but not English shows hierarchy effects.
- However: hierarchy violations are acceptable (e.g. mean 4.4 above) compared to controls (mean: 1.4, not in figure). This is in line with Heycock's (2012) claim, but could be a grammaticality illusion (Wagers, Lau & Phillips, 2009).
- No effect for 1>2 vs. 2>1. This is parallel to 'weak PCC' patterns, where only [+/− participant] matters (Nevins 2007), but not not [+/− author].

Account

- Nevins' (2007) account of PCC effects can be extended to German copulas.
- 1st/2nd person: [+participant]; 3rd: [−participant]
- '+' values are marked, all NPs must be **licensed** through Agree (Béjar & Rezac 2009)
- **Multiple Agree:** One probe can license more than one NP

  (10) **Contiguous Agree**
        Agree in a marked feature across an unmarked intervener is prohibited.

  (11) **Good: Participant > 3**
        [Probe⁰ [NP$_{[+PART]}$ … [… NP$_{[−PART]}$]]]

  (12) **Bad: 3 > Participant**
        [Probe⁰ [NP$_{[−PART]}$ … [… NP$_{[+PART]}$]]]

Number in PCC vs Copulas

- **Puzzle:** There are no "Number Case Constraint" effects in double-object constructions (Nevins 2011)— but we find a number effect in German copulas.

  (13) **Good: PL > SG**
        [Probe⁰ [NP$_{[+PL]}$ … [… NP$_{[−PL]}$]]]

  (14) **Bad: SG > PL**
        [Probe⁰ [NP$_{[−PL]}$ … [… NP$_{[+PL]}$]]]

- **Proposal:**
  ❶ Person and number are separate probes (e.g. Béjar & Rezac 2003)
  ❷ #⁰ universally higher than π⁰ (Preminger 2011)
  ❸ Clitic doubling renders an NP invisible to agreement, removing the IO as an intervener (Anagnostopoulou 2003, Preminger 2009)—**but not in German copulas**.

  (15) **Ditransitive PCC:**
        [$_{vP}$ #⁰ [π⁰ [$_{ApplP}$ NP$_{IO}$ [$_{vP}$ NP$_{DO}$]]]]
        clitic-double

  (16) **German copula:**
        [$_{TP}$ #⁰ [π⁰ [$_{PredP}$ NP$_{SUB}$ [NP$_{PRED}$]]]]