

# Perspective-dependent constraints on bound readings of demonstrative pronouns and definite descriptions in German and English

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# Introduction

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

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- Personal pronouns can be bound by quantifiers c-commanding them on the surface or at LF
- Bound readings of German demonstrative pronouns of the *der/die/das*-series (DPros) and of definite descriptions (in both English and German) much more constrained
- Topic of this talk: Closer look at role of perspective for availability of bound readings for two types of expressions
- Presentation of two pilot studies comparing English personal pronouns and definite descriptions, on the one hand, and German personal pronouns, DPros and definite descriptions, on the other

# Background: Bound readings of German DPros

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

- Hinterwimmer (2015) and Hinterwimmer & Brocher (2018) (see also Patel-Grosz & Grosz 2017): **Bound readings of DPros** possible (contra Wiltschko 1998) if **binder not subject** of sentence
- (1) [Jeder Mann]<sub>i</sub> glaubt, dass er<sub>i</sub>/<sup>\*</sup>der<sub>i</sub> klug ist.  
*[Every man]<sub>i</sub> believes that he<sub>i</sub>/<sup>\*</sup>he(DPro)<sub>i</sub> is smart.*
- (2) a. Martha<sub>i</sub> glaubt von [jeder Kollegin]<sub>j</sub>, dass die<sub>j</sub> klüger ist als sie<sub>i</sub>.  
*Martha<sub>i</sub> believes of [every colleague]<sub>j</sub> that she(DPRO)<sub>j</sub> is smarter than her.*
- b. Anna<sub>i</sub> stellte [jedem Studenten]<sub>j</sub> mindestens eine Frage, die der<sub>j</sub> nicht beantworten konnte.  
*Anna<sub>i</sub> asked [every student]<sub>j</sub> at least one question that he(DPro)<sub>j</sub> could not answer.*

# Background: Bound readings of German DPros

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- According to Hinterwimmer (2015) and Hinterwimmer & Brocher (2018) contrasts due to the fact that **DPros avoid maximally prominent DPs as antecedents or binders**
- In (potential) binding configurations **subject DPs maximally prominent** and hence unavailable as binders for DPros
- Evidence, however, that DPros sometimes can be bound by subject DPs (Hinterwimmer & Bosch 2016, 2017)

# Background: Bound readings of German DPros

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

(3) [Jede Mathematikerin]<sub>i</sub> wirkte auf Paul<sub>j</sub>, als wäre die<sub>i</sub> klüger als er<sub>j</sub>.  
*[Every mathematician]<sub>i</sub> gave Paul<sub>j</sub> the impression that she(Dpro)<sub>i</sub> was smarter than him<sub>j</sub>.*

(4) [Jeder Politiker]<sub>i</sub> wurde schon einmal beschuldigt, dass der<sub>i</sub> korrupt sei.

*[Every politician]<sub>i</sub> has been accused that he(DPro)<sub>i</sub> was corrupt.*

- In all examples (2-4) where DPro can bound, **individuals quantified over not attitude holders**, while in (1), where binding is impossible, **individuals quantified over** at the same time **attitude holders**
- In line with observation that DPros can pick up referents of subject DPs as long as they are not at the same time perspectival centers (Hinterwimmer & Bosch 2016)

# Background: Bound readings of German DPros

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- (1) [Jeder Mann]<sub>i</sub> glaubt, dass er<sub>i</sub>/<sup>\*</sup>der<sub>i</sub> klug ist.  
*[Every man]<sub>i</sub> believes that he<sub>i</sub>/<sup>\*</sup>he(DPro)<sub>i</sub> is smart.*
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*Martha<sub>i</sub> believes of [every colleague]<sub>j</sub> that she(DPRO)<sub>j</sub> is smarter than her.*  
b. Anna<sub>i</sub> stellte [jedem Studenten]<sub>j</sub> mindestens eine Frage, die der<sub>j</sub> nicht beantworten konnte.  
*Anna<sub>i</sub> asked [every student]<sub>j</sub> at least one question that he(DPro)<sub>j</sub> could not answer.*
- (3) [Jede Mathematikerin]<sub>i</sub> wirkte auf Paul<sub>j</sub>, als wäre die<sub>i</sub> klüger als er<sub>j</sub>.  
*[Every mathematician]<sub>i</sub> gave Paul<sub>j</sub> the impression that she(Dpro)<sub>i</sub> was smarter than him<sub>j</sub>.*
- (4) [Jeder Politiker]<sub>i</sub> wurde schon einmal beschuldigt, dass der<sub>i</sub> korrupt sei.  
*[Every politician]<sub>i</sub> has been accused that he(DPro)<sub>i</sub> was corrupt.*

# Background: Bound readings of German DPros

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

- Finally, in examples in (5-7), individuals quantified over/referred to by DP binding DPro attitude holders, but, crucially, there are either **explicit** or **implicit attitude holders** that are **more prominent**:

(5) Maria<sub>i</sub> behauptet, dass [jeder von ihren<sub>i</sub> Kollegen]<sub>j</sub> glaubt, der<sub>j</sub> könne besser Schach spielen als sie<sub>i</sub>.

*Maria<sub>i</sub> claims that [every colleague of hers<sub>i</sub>]<sub>j</sub> believes he(Dpro)<sub>j</sub> could play chess better than her<sub>i</sub>.*

(6) Otto<sub>i</sub> ist wirklich unglaublich blöd. [Dieser Idiot]<sub>i</sub> glaubt, der<sub>i</sub> kann mich öffentlich beleidigen und sich dann Geld von mir ausleihen.

*Otto<sub>i</sub> is really incredibly stupid. [This idiot]<sub>i</sub> believes that he(DPro)<sub>i</sub> can insult me in public and then borrow money from me.*

(7) Meine neuen Kollegen sind alle fürchterlich arrogant. [Jeder von diesen Angebern]<sub>i</sub> glaubt, der<sub>i</sub> sei der Schlaueste.

*My new colleagues are all terribly arrogant. [Everyone of these showoffs]<sub>i</sub> believes that he(DPro)<sub>i</sub> is the smartest.*

# Background: Bound readings of German DPros

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

- In case of (5), more prominent attitude holder subject of matrix propositional attitude verb, in (6) and (7) respective speaker:

(5) Maria<sub>i</sub> behauptet, dass [jeder von ihren<sub>i</sub> Kollegen]<sub>j</sub> glaubt, der<sub>j</sub> könne besser Schach spielen als sie<sub>i</sub>.

*Maria<sub>i</sub> claims that [every colleague of hers<sub>i</sub>]<sub>j</sub> believes he(DPro)<sub>j</sub> could play chess better than her<sub>i</sub>.*

(6) Otto<sub>i</sub> ist wirklich unglaublich blöd. [Dieser Idiot]<sub>i</sub> glaubt, der<sub>i</sub> kann mich öffentlich beleidigen und sich dann Geld von mir ausleihen.

*Otto<sub>i</sub> is really incredibly stupid. [This idiot]<sub>i</sub> believes that he(DPro)<sub>i</sub> can insult me in public and then borrow money from me.*

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*My new colleagues are all terribly arrogant. [Everyone of these showoffs]<sub>i</sub> believes that he(DPro)<sub>i</sub> is the smartest.*



# Background: Bound readings of German DPros

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

Based on these and related observations, Hinterwimmer & Bosch (2017) propose lexical entries along the lines of the sample entry for *der* in (8):

(8) a.  $[[\text{der}]]^{g,C,c} = \lambda s. \lambda P_{\langle e, \langle s, t \rangle \rangle}. \iota \{x: \text{male}(x)(s) \wedge P(x)(s) \wedge \exists Y[\text{PersProm}(Y) > \text{PersProm}(x) \wedge \text{distinct\_from}(x)(Y)]\}$

b.  $[[ [\text{der}_{s_n} \text{NP}_m ] ] ]^{g,C,c} = \iota \{x: \text{male}(x)(g(s_n)) \wedge g(P_m)(x)(g(s_n)) \wedge \exists Y[\text{PersProm}(Y) > \text{PersProm}(x) \wedge \text{distinct\_from}(x)(Y)(g(s_n))]\}$ ,

where  $g$  is the assignment function,  $C$  is the context of utterance,  $c$  is the context of some prominent protagonist,  $Y$  is a variable ranging over objects of type  $e$  as well as ones of type  $\langle e, t \rangle$ ,  $P_m$  is a free predicate variable bearing the index  $m$ ,  $s_n$  is a free situation/world variable bearing the index  $n$  and  $\text{PersProm}(Y) > \text{PersProm}(x)$  iff  $Y$  is perspectively more prominent than  $x$ .

If  $Y$  is of type  $e$ ,  $Y$  is distinct from  $x$  iff  $Y$  and  $x$  are not identical. If  $Y$  is of type  $\langle e, t \rangle$ ,  $Y$  is distinct from  $x$  iff  $x \notin Y$ .

**Perspectival Prominence** is determined by the following hierarchy:

Author( $C$ ) (if salient in virtue of being instantiated), Author( $c$ ) > highest anchor / restrictor set of highest anchor

# Background: Bound readings of definites

- Evidence that definite descriptions can sometimes be bound by quantifiers (Wilson 1984, Schlenker 2005, Elbourne 2013):
  - (9) Mary talked to no senator before the senator was lobbied.
  - (10) Every scientist who was fired from the observatory at Sofia was consoled by some one who knew the scientist as a youth.
  - (11) John fed no cat of Mary's before the cat was bathed.

# Background: Bound readings of definites

- Sentences in (12a-b) where quantifiers are not subjects also seem to allow (at least marginally) bound readings of definite descriptions:

- (12) a. ?Martha<sub>i</sub> glaubt von [jeder Kollegin]<sub>j</sub>, dass [die Kollegin]<sub>j</sub> klüger ist als sie<sub>i</sub>.  
*?Martha<sub>i</sub> believes of [every colleague]<sub>j</sub> that [the colleague]<sub>j</sub> is smarter than her.*
- b. Anna<sub>i</sub> stellte [jedem Studenten]<sub>j</sub> mindestens eine Frage, die [der Student]<sub>j</sub> nicht beantworten konnte.  
*Anna<sub>i</sub> asked [every student]<sub>j</sub> at least one question that [the student]<sub>j</sub> could not answer.*

- But is there evidence that perspective plays a role in the availability of bound readings of definite descriptions, too?

# Background: Bound readings of definites

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

## Role of perspective in expressions that refer

- In the pronominal domain *Dpro* vs. *Dpro*
  - *Dpro* resists referring to perspectively more prominent antecedents
  - *Dpro* is anti-logophoric (Grosz)
- In the reflexives domain *ta-ziji* vs. *ziji*
  - *Ta-ziji* resists referring to perspective holder (Chen & Ahn 2023)
- General pattern: the more marked the form, the less likely to refer to the perspective holder
  - What this requires:
    - Expressions with similar semantic content that can be compared for relative markedness

# Background: Bound readings of definites

- pronouns vs. definite descriptions
  - Often treated to be different kinds of expressions
    - $[[she]]^g = g(i)$ , if  $g(i)$  is female
    - $[[the\ linguist]]^g = \iota x. Linguist(x)$
  - Definite descriptions also allow anaphoric uses (Schwarz 2009)
  - Definite descriptions and pronouns have similar semantic structures:
    - D-Type theories (Evans 1980, Heim 1990, Neale 1988, Elbourne 2005, a.o.)  
 $[[she]] = [[the\ linguist]]$
    - Pronouns as simple descriptions (von Heusinger 2002, Schlenker 2005, Royer 2022, a.o.)
- Prediction: Definite descriptions should show similar sensitivity to perspective

# Background: Bound readings of definites

## [RQ] Are definite descriptions also sensitive to perspective?

### Study 1: Source of information

- [RQ1] Do speakers allow bound-variable readings of definite descriptions when the antecedent is (not) the source of the information?
- TVJ and Ratings

### Study 2: Ratings on epithets

- [RQ2] Do speakers allow bound-variable readings of definite descriptions when the NP restriction is (not) an epithet?
  - **Epithets are anti-logophoric** (Dubinsky & Hamilton 1998, Schlenker 2005, Patel-Grosz 2014, Charnavel 2020, a.o.)
- Ratings (pilot)

{PRO, DEF, PPRO, DPRO, DEM}

# **STUDY 1**

# Study 1

## Two factors

- PERSPECTIVE

- [+pers] the antecedent is the source of information (attitude holder)

- **Every girl<sub>i</sub> thinks that James likes the girl<sub>i</sub>**

- [-pers] the antecedent is *not* the source of information (recipient)

- **Every girl<sub>i</sub> was told that James likes the girl<sub>i</sub>**

- EXPRESSION

- English: pronoun vs. definite description

2 X 2

- ...{her<sub>i</sub>, the girl<sub>i</sub>}

- German: Ppro vs. Dpro vs. Def

2 X 3

- ...{si<sub>i</sub>, die<sub>i</sub>, das Mädchen}



# Study 1

## TVJ

- Given a sentence where the antecedent is either a source of information or the recipient, do speakers accept sentences with {ppro, dpro, def} to be true?
  - Context given to ensure a bound-variable reading
  - Sentence shown with TVJ prompt
  - Fillers: with sentences not involving definite expressions

## Rating

- How do speakers rate sentences with {ppro, dpro, def}?
  - Same context and fillers
  - Likert scale 1 – 10

# Study 1

## Sample trial (English - TVJ)

[+pers, pro]

*context*

James is from a family who owns a local chocolate store. Every Friday, he brings chocolate to class. Students in his class, including all of the girls, are under the impression that James likes them.

**Every girl thinks that James likes her.**

True

False

# Study 1

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

## Sample trial (English - TVJ)

[+pers, def]

*context*

James is from a family who owns a local chocolate store. Every Friday, he brings chocolate to class. Students in his class, including all of the girls, are under the impression that James likes them.

**Every girl thinks that James likes the girl.**

True

False

# Study 1

## Sample trial (English - TVJ)

[-pers, pro]

*context*

James is from a family who owns a local chocolate store. Every Friday, he brings chocolate to class. Because he always gives chocolate to the girls, the guys in class told every girl that James likes her.

**Every girl was told that James likes her.**

True

False

# Study 1

## Sample trial (English - TVJ)

[-pers, def]

*context*

James is from a family who owns a local chocolate store. Every Friday, he brings chocolate to class. Because he always gives chocolate to the girls, the guys in class told every girl that James likes her.

**Every girl was told that James likes the girl.**

True

False

# Study 1

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

## Sample trial (German - TVJ)

[-pers, dpro]

*context*

James stammt von einer Familie ab, die ein lokales Schokoladengeschäft besitzt. Jeden Freitag bringt er Schokolade mit in die Klasse. Weil er immer den Mädchen Schokolade gibt, sagten die Jungen aus der Klasse jedem Mädchen, dass James sie mag.

**Jedes Mädchen denkt, dass James die mag.**

Wahr

Falsch

# Study 1

## Sample trial (English - Ratings)

[-pers, def]

*context*

James is from a family who owns a local chocolate store. Every Friday, he brings chocolate to class. Because he always gives chocolate to the girls, the guys in class told every girl that James likes her.

**Every girl was told that James likes the girl.**

Please rate the naturalness of the sentence (1 = least natural, 10 = most natural).

Least natural                 Most natural  
                         1   2   3   4   5   6   7   8   9   10

# Study 1: English TVJ Results

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

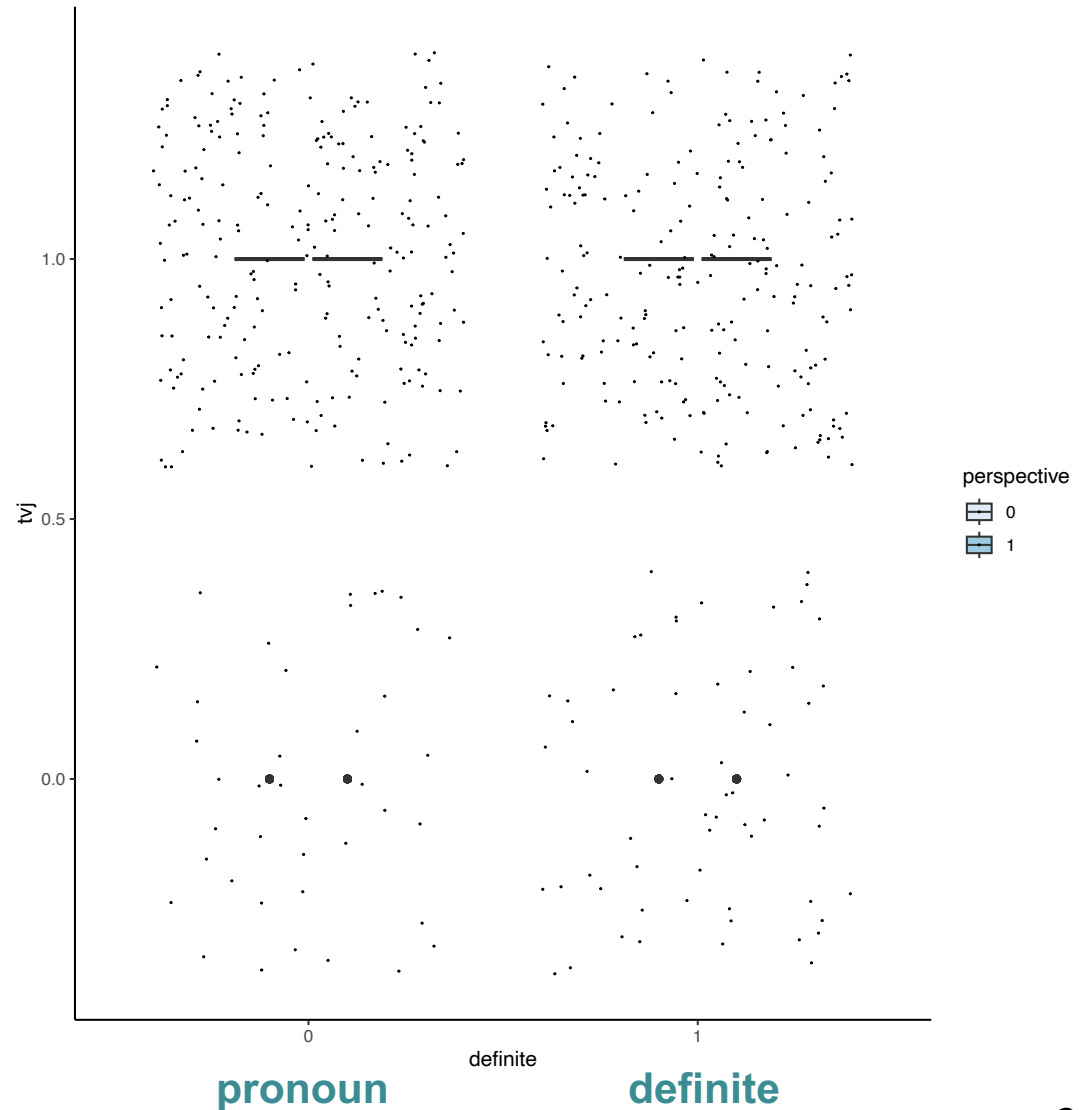
[ENGLISH] n=48, recruited over Prolific

Perspective | Expression | Interaction

## TVJ

- at-ceiling for both pronouns and definite descriptions
- No notable effect of perspective

English speakers take sentences involving bound-variable interpretation of PRO and DEF to be true.





# Study 1: English Rating Results

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

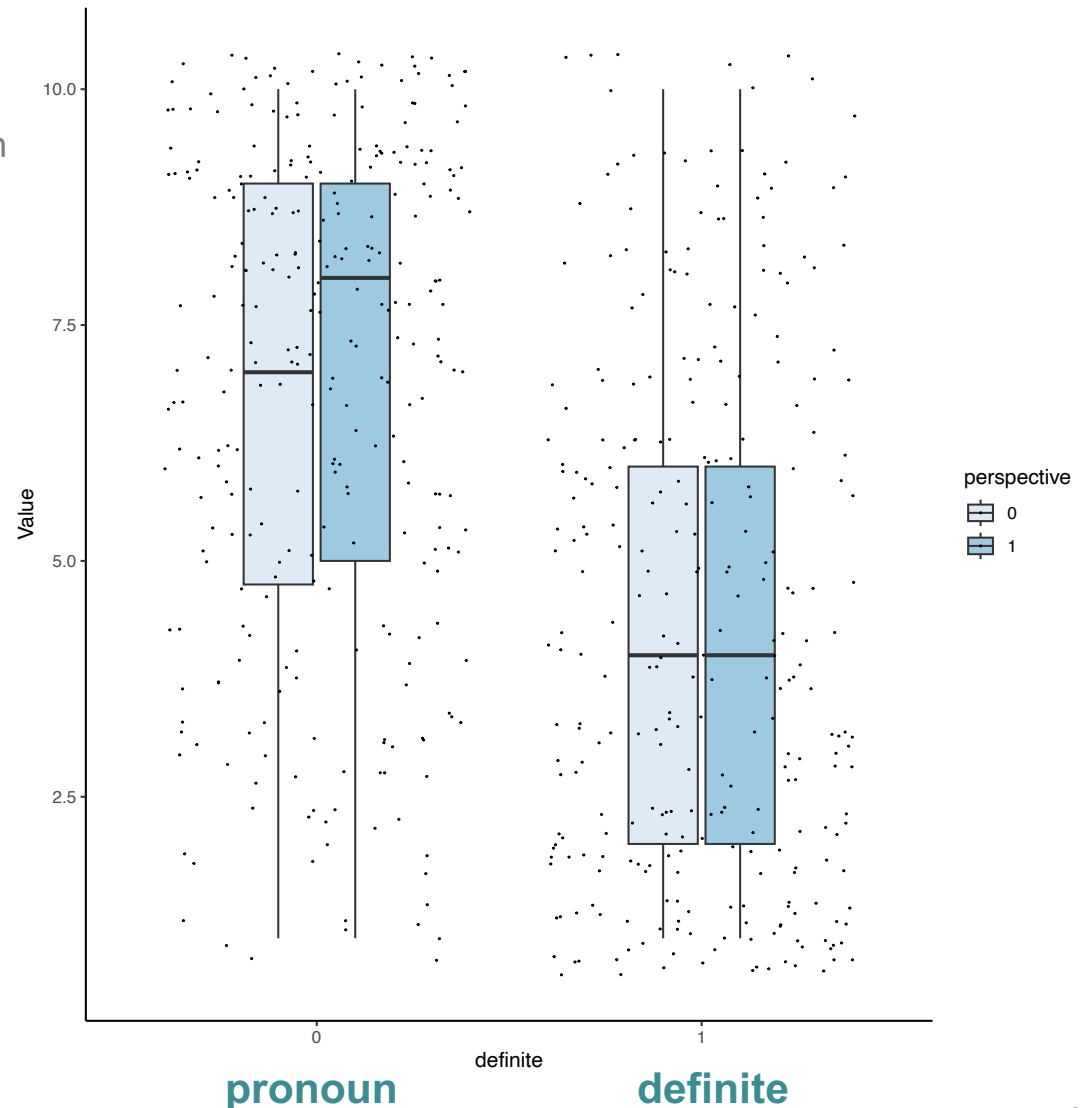
[ENGLISH] n=48, recruited over Prolific

Perspective | \*\*\*Expression | \*\*\*Interaction

## Rating

- No significant effect of perspective
- DEF rated lower than PRO
- DEF: no effect of perspective
- PRO: [+perspective] is more highly rated (*not significant*)

No detectable effect of perspective on the rating of bound-variable reading of definite descriptions.



# Study 1: German TVJ Results

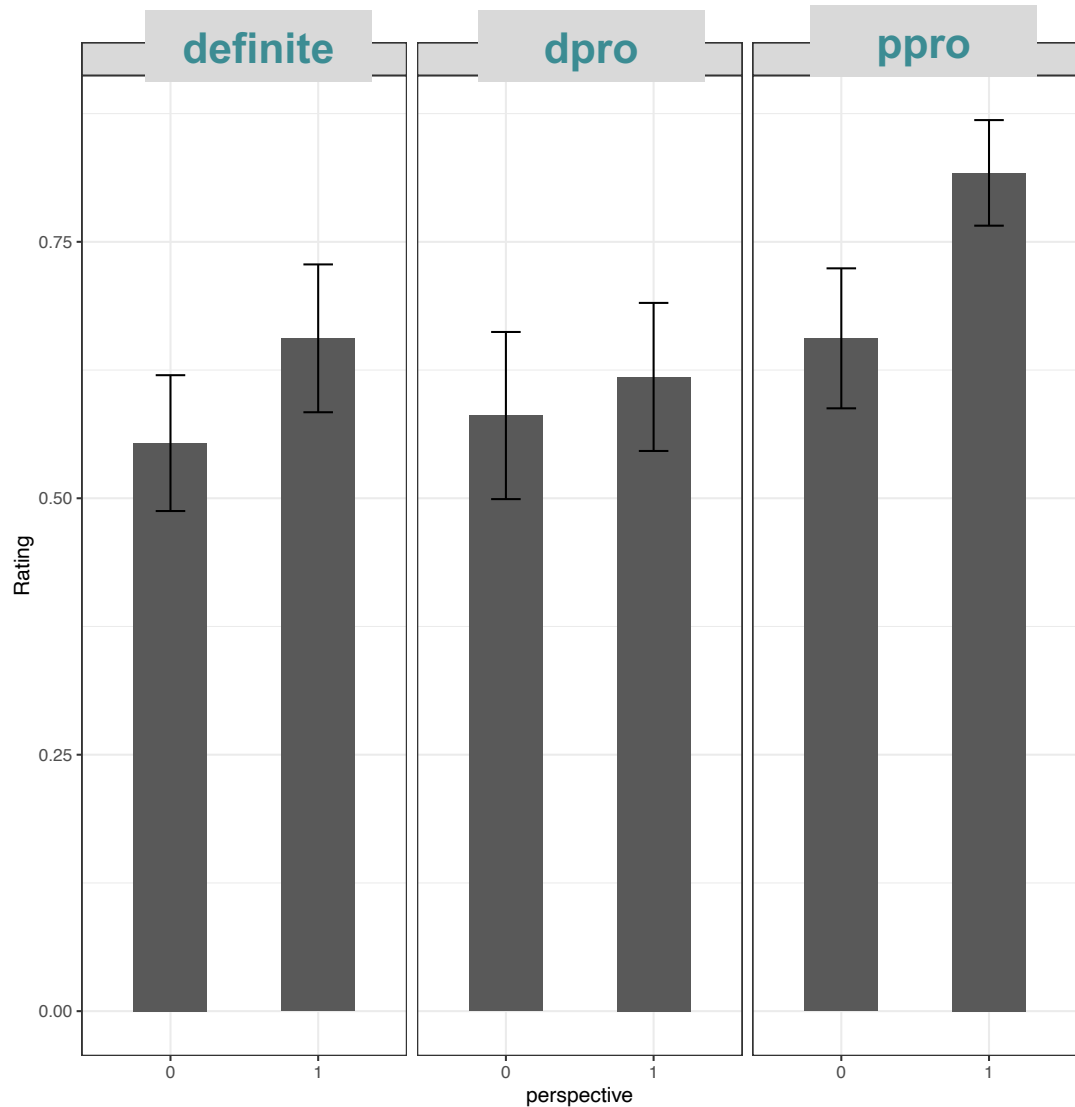
Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

[GERMAN] n=30, recruited over Prolific

[Perspective | \*Expression | Interaction]

## TVJ

- Overall, above chance
- PPRO: [+pers] higher than [-pers] (*not* significant)
- No obvious effect of perspective in DEF and DPRO



# Study 1: German Rating Results

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

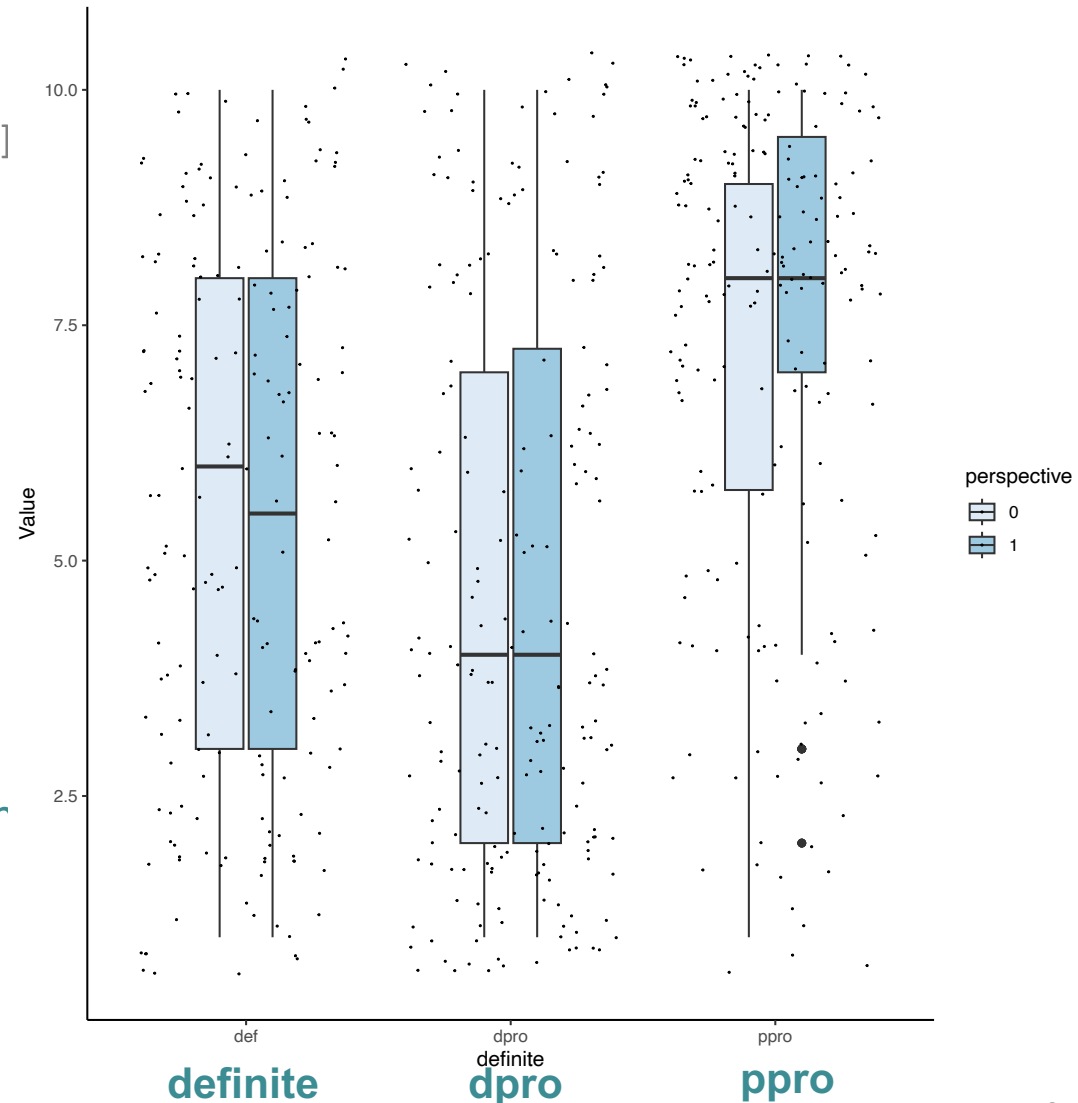
[GERMAN] n=49, recruited over Prolific

[Perspective | \*\*\*Expression | \*\*\*Interaction]

## Rating

- PPRO generally rated higher
- DEF rated higher than DPRO
- PPRO: [+pers] is higher (*not* significant)

No obvious effect of perspective or bound-variable reading of definite descriptions.



# Study 1: Discussion

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

Bound-variable reading is possible for definite descriptions

- TVJ at-ceiling for English
- TVJ shows a range for German, but all above chance

Some effect of perspective on (less-marked) pronouns

- [+pers] is higher for PRO in English
- [+pers] is higher for PPRO in German

No obvious effect of perspective

- Possible reasons: maybe [+/-pers] was not actually [+/-pers]
- Even in [-pers], the narrative can be from the antecedent's perspective

# **STUDY 2**

# Study 2

## Two factors

- EPITHET

- [+epithet] the NP restriction is an epithet
- [-epithet] the NP restriction is a regular noun

- EXPRESSION

- English: pronoun vs. definite desc vs. dem desc 2 X 3
  - ...{her<sub>i</sub>, the girl<sub>i</sub>, that girl<sub>i</sub>}
- German: Ppro vs. Dpro vs. Def 2 X 3
  - ...{si<sub>i</sub>, die<sub>i</sub>, das Mädchen}

# Study 2

## Two factors:

- EPITHET X EXPRESSION
- English:

|  |
|--|
| Peter, the idiot, believes that he is smart.               |
| Peter, the idiot, believes that that idiot is smart.       |
| Peter, the idiot, believes that the idiot is smart.        |
| Peter, the linguist, believes that he is smart.            |
| Peter, the linguist, believes that that linguist is smart. |
| Peter, the linguist, believes that the linguist is smart.  |

# Study 2

## Two factors

- EPITHET X EXPRESSION
- German:

|  |
|--|
| Peter, der Idiot, glaubt, dass er schlau ist.              |
| Peter, der Idiot, glaubt, dass der schlau ist.             |
| Peter, der Idiot, glaubt, dass der Idiot schlau ist.       |
| Peter, der Linguist, glaubt, dass er schlau ist.           |
| Peter, der Linguist glaubt, dass der schlau ist.           |
| Peter, der Linguist, glaubt, dass der Linguist schlau ist. |



# Study 2

## Sample trial (English)

[+epithet, def]

**Peter, the idiot, believes that the idiot is smart.**

Please rate the naturalness of the sentence (1 = least natural, 10 = most natural).

Least natural                 Most natural  
                         1   2   3   4   5   6   7   8   9   10

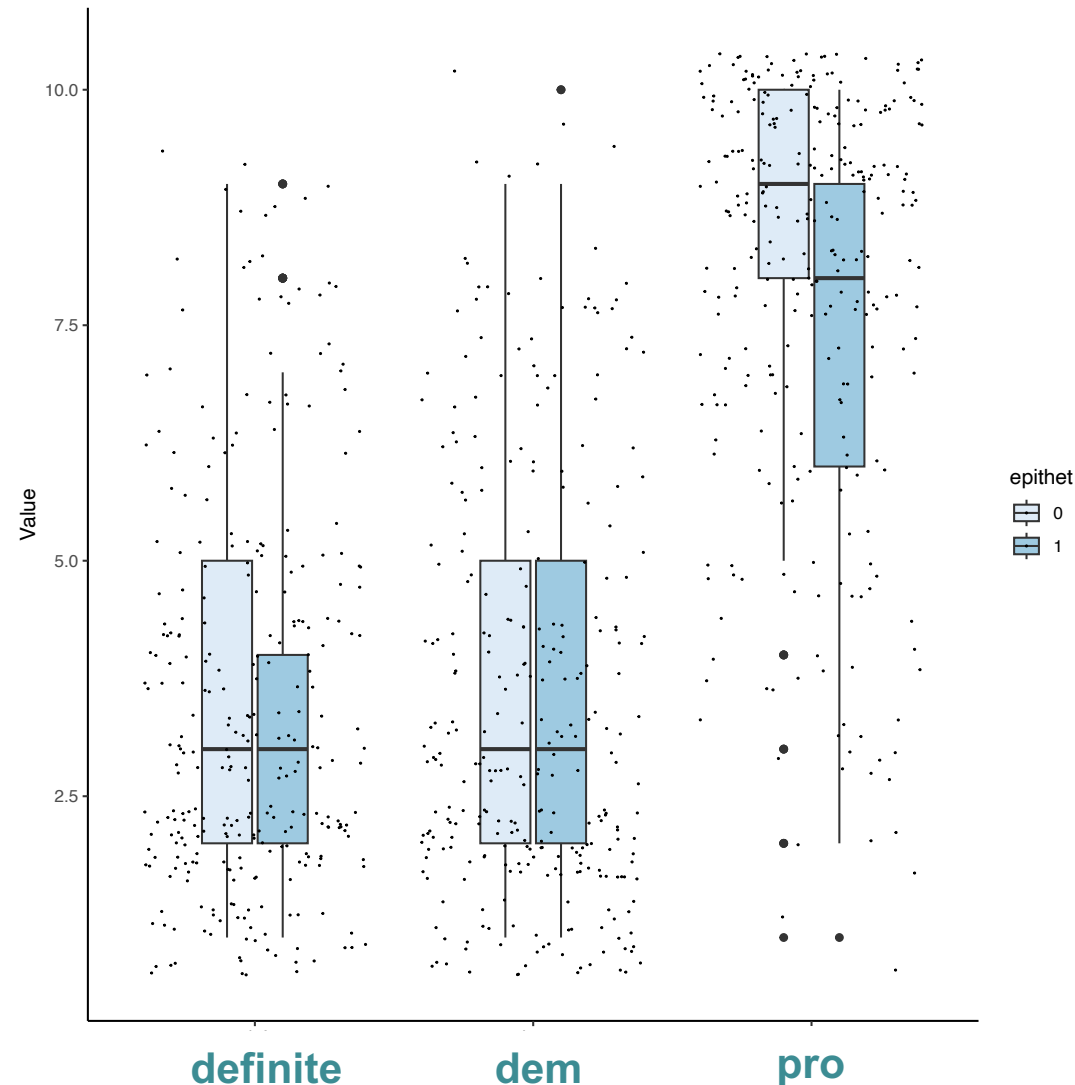
# Study 2: English Results

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

[ENGLISH] n=30, recruited over Prolific

- For pronouns, [+epithet] has lower rating
- No obvious effect of [+/- epithet] on DEF or DEM (for DEF, [+epithet] is slightly lower)

No obvious effect of [epithet] on definite descriptions.



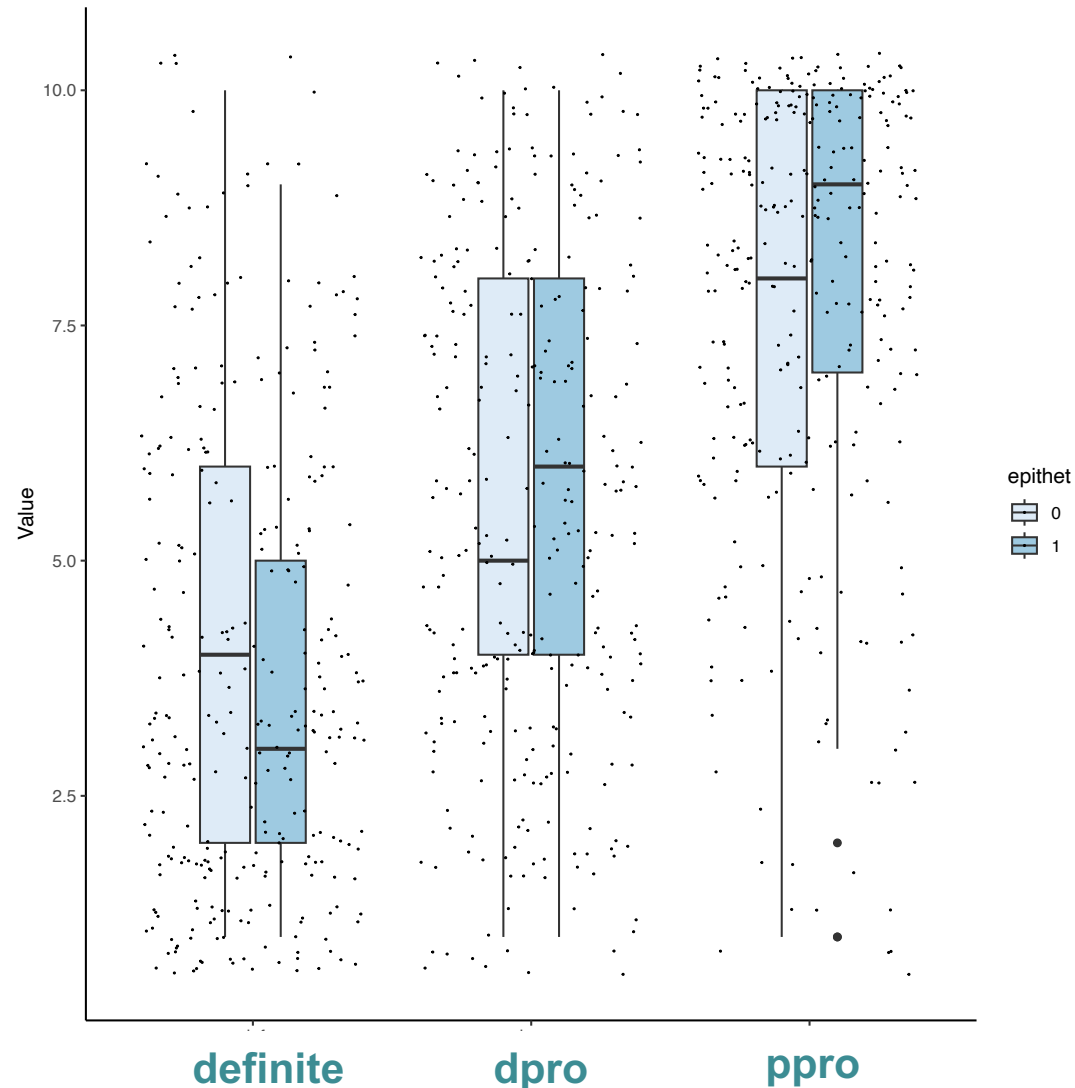
# Study 2: German Results

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

[GERMAN] n=30, recruited over Prolific

- For both PPRO and DPRO, [+epithet] receive higher rating
- For DEF, [+epithet] lower than [-epithet]

Confirms Hinterwimmer & Bosch argument for dpro.



# Study 2: Discussion

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

## Prediction of Hinterwimmer & Bosch confirmed for DPRO

- DPRO: [+epithet] makes rating of bound-variable reading better
- Questions:
  - Same effect for PPRO
  - Opposite effect for DEF

Effect of epithet not visible for DEF or DEM in English

Variation across items

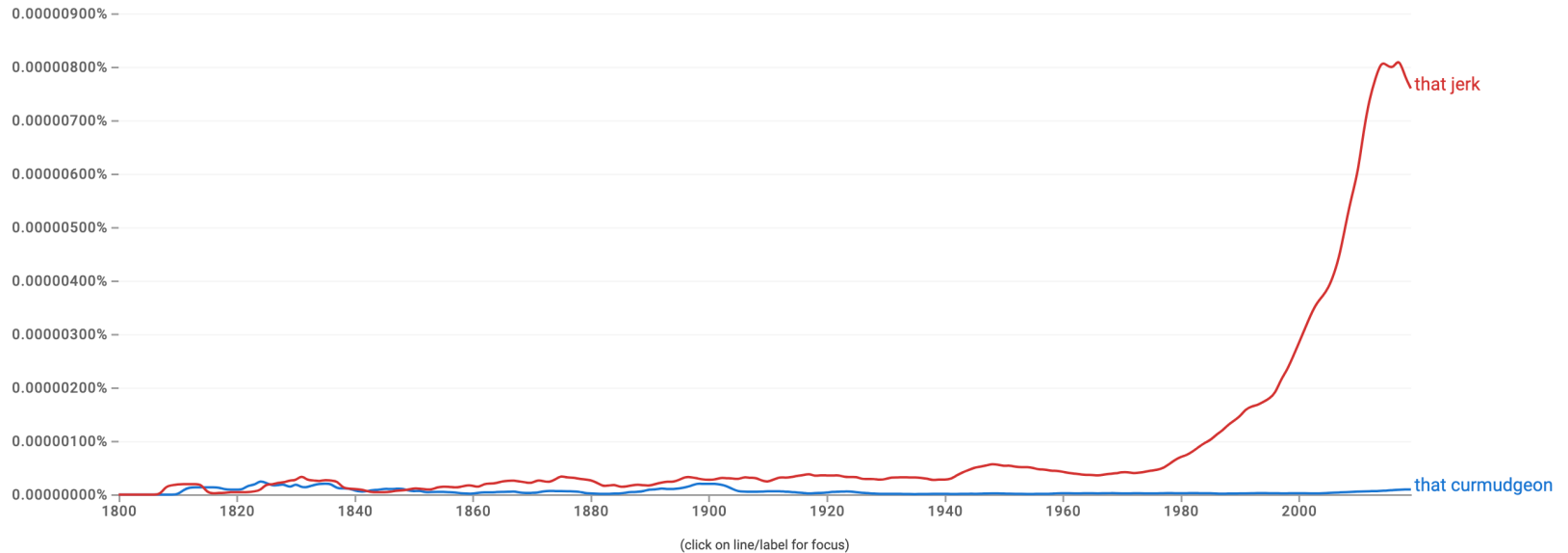
- Epithets: *the jerk* vs. *the cow* vs. *the curmudgeon*



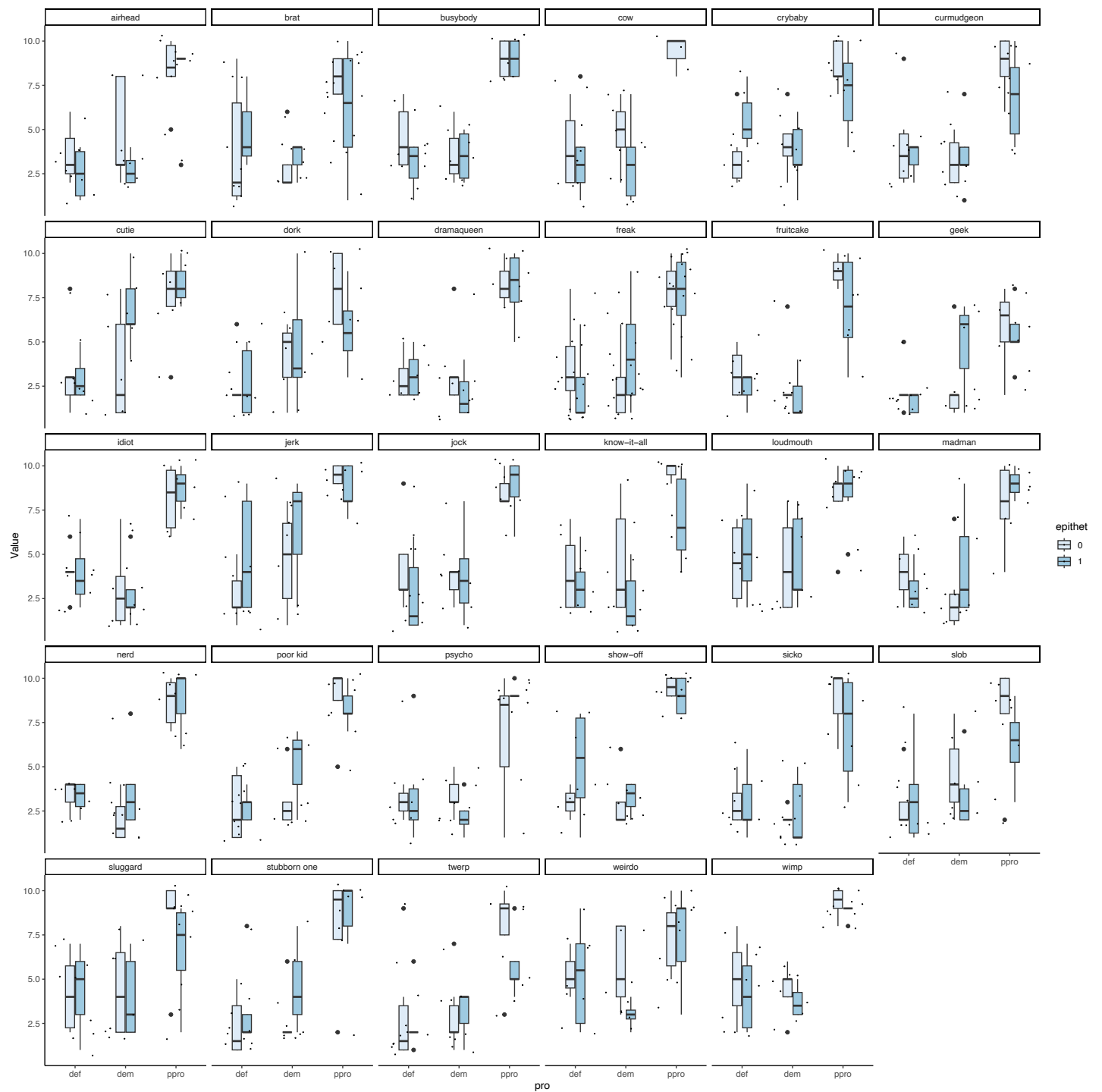
# Study 2: Discussion

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

## *the jerk vs. the curmudgeon*

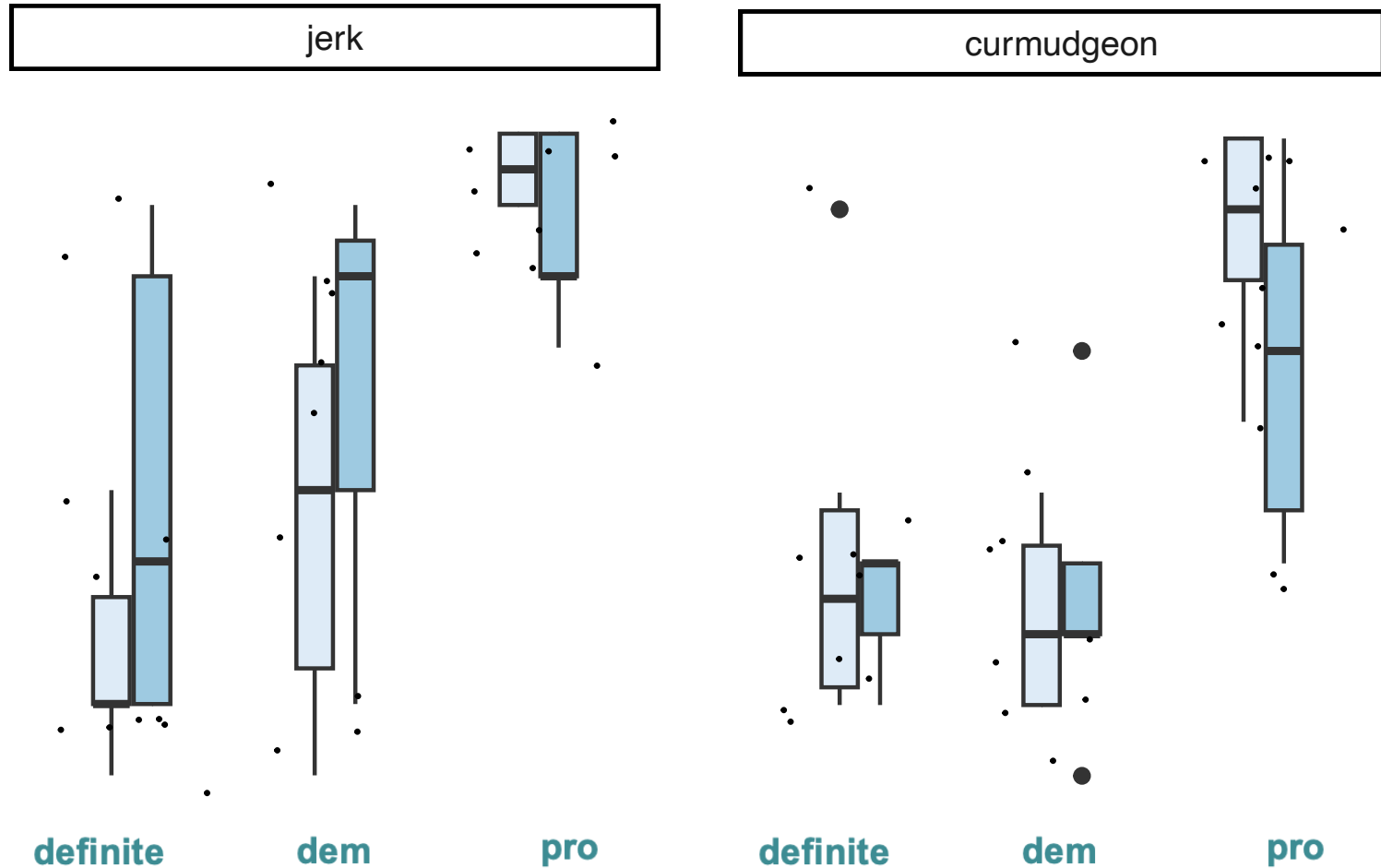


# English plot by item



# Study 2: Variation across items

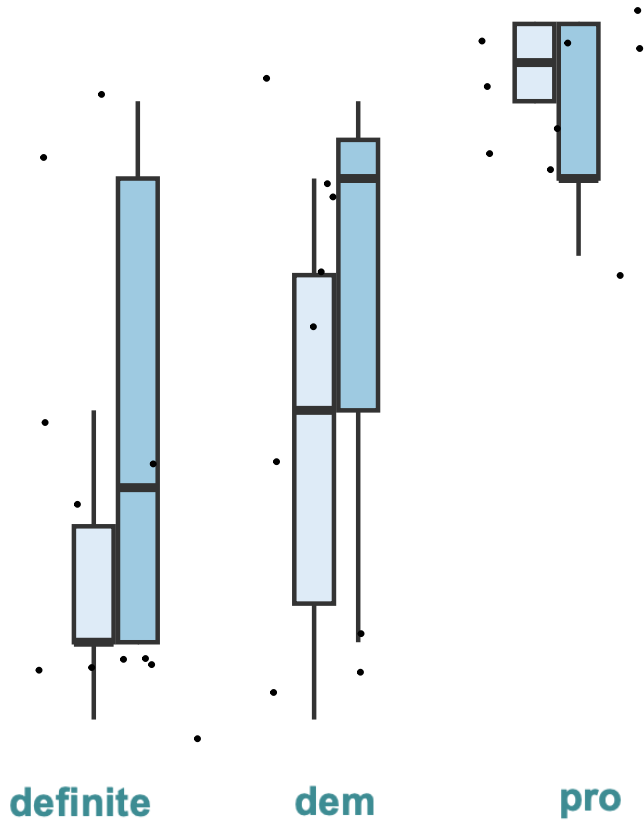
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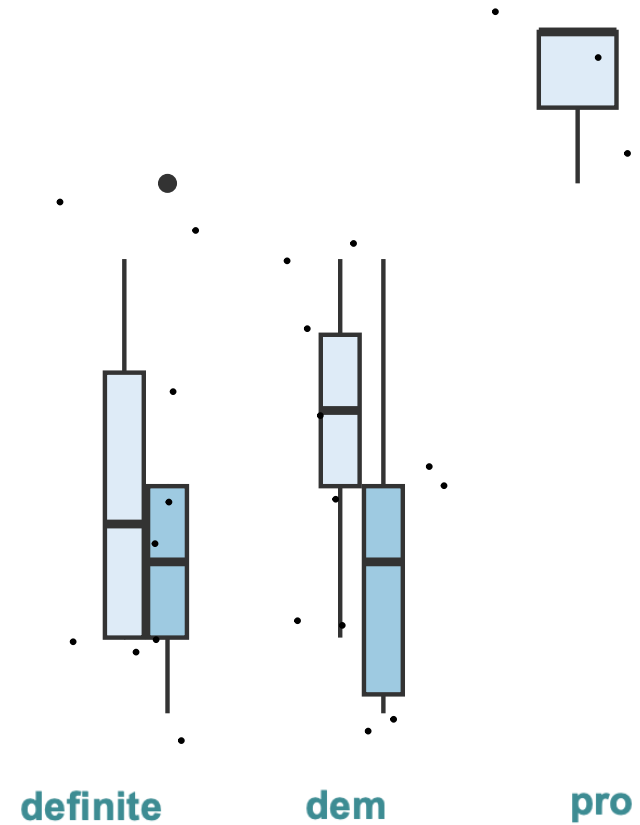
# Study 2: Variation across items

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

jerk

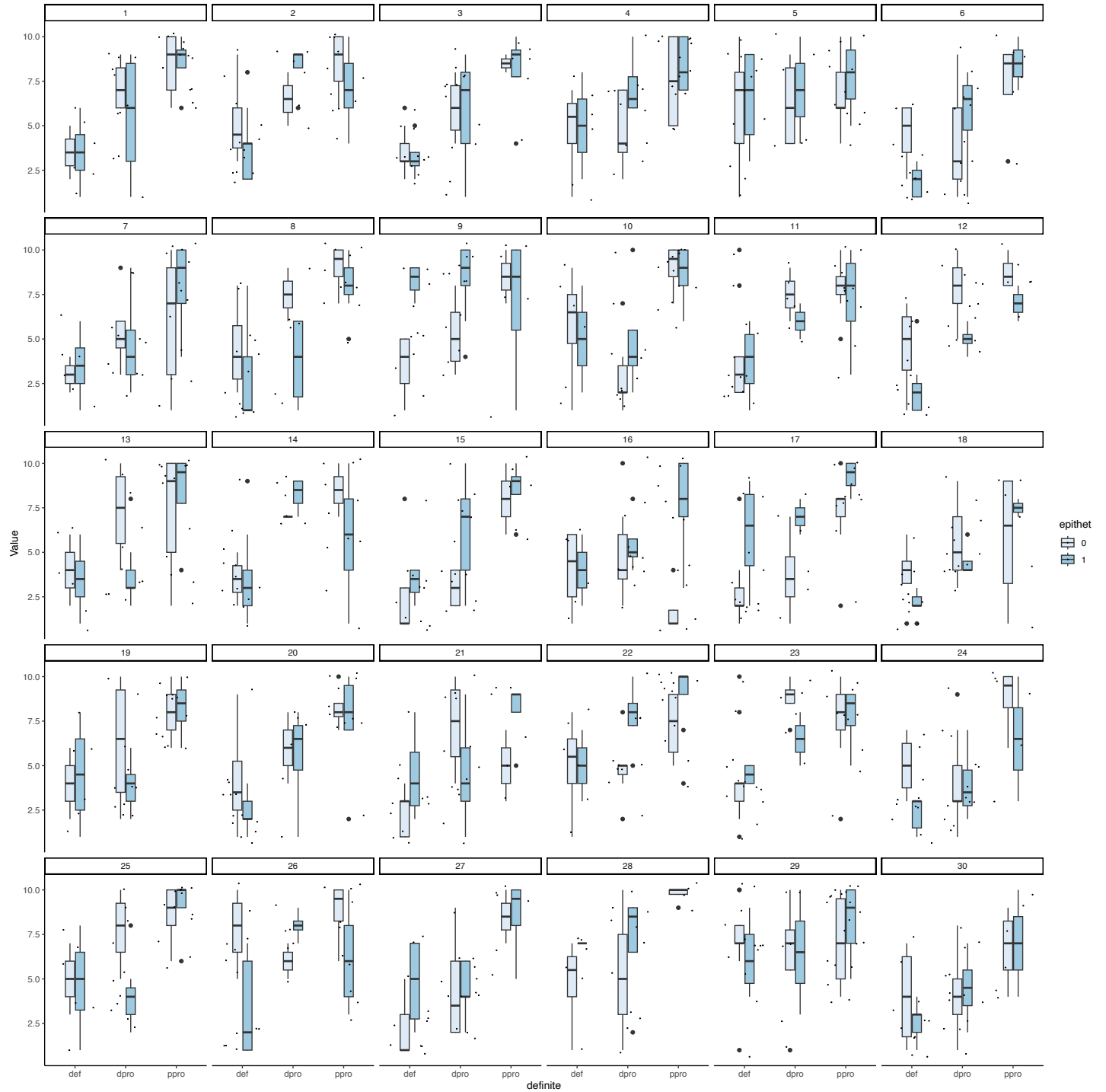


cow





# German plot by item



# Study 2: Future Directions

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

## A more systematic study

- Higher N
- Norming ‘epithet-ness’
- Focusing on fewer items
- Context to ensure an epithet reading?



# General Discussions

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

## [pre-RQ] Do definite descriptions allow bound-variable reading?

Yes (based on TVJ), but not rated so highly

## [RQ] Are definite descriptions also sensitive to perspective?

- [Study 1] Do speakers allow bound-variable readings of definite descriptions when the antecedent is (not) the source of the information?
- [Study 2] Do speakers allow bound-variable readings of definite descriptions when the NP restriction is (not) an epithet?

No clear evidence; more systematic testing needed

# Appendix: Demo links

Introduction – Background: Bound readings of German DPros – Background: Bound readings of definites – Experiments

## Study 1

- English TVJ: <https://farm.pcibex.net/r/WjvxMa/>
- English Ratings: <https://farm.pcibex.net/r/CppDIH/>
- German TVJ: <https://farm.pcibex.net/r/ccMmjb/>
- German Ratings: <https://farm.pcibex.net/r/RckWeQ/>

## Study 2

- English: <https://farm.pcibex.net/r/dxljoN/>
- German: <https://farm.pcibex.net/r/BAZuKy/>