Subject-object asymmetries and intervention: the role of case
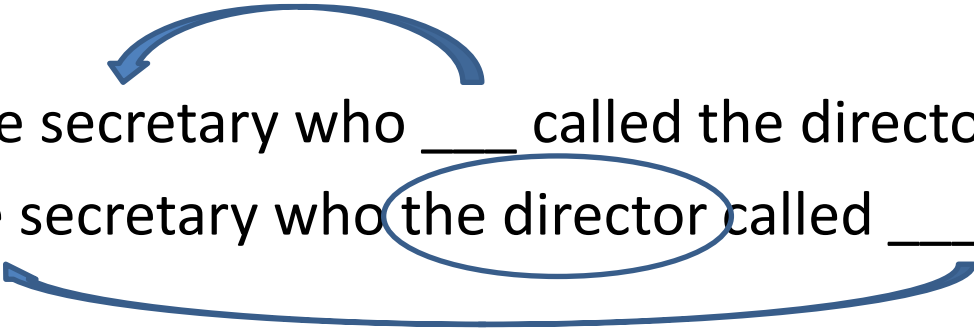
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Handout: http://www.ankelienschippers.com/site/assets/files/1102/tabu-dag_case_intervention.pdf

Introduction

- Object A'-dependencies (wh-questions, relatives, etc.) are more difficult to process than subject A'-dependencies:

1. Subject: That's the secretary who ___ called the director.
2. Object: That's the secretary who the director called ____.

Studies showing this

- L1 acquisition (both typical and a-typical): Brown 1972; Sheldon 1974; Lempert & Kinsbourne 1980; Tavakolian 1981; Corrêa 1982; Roth 1984; McKee et al. 1998; Adams 1990; de Villiers et al. 1994; Corrêa 1995; Berman 1997; Håkansson & Hansson 2000; Friedmann & Novogrodsky 2004; Diessel & Tomasello 2005¸ Novogrodsky & Friedmann 2006; Friedmann et al. 2009; Hamann & Tuller 2015; Schouwenaars, Hendriks & Ruigendijk 2018).

- Adults with aphasia: Caplan & Futter 1986, Grodzinsky 1989, Lukatela et al. 1995; Sanfelici et al. 2014; Hanne et al. 2015).

- Adults without any cognitive impairments: Wanner & Maratsos 1978; King & Just 1991; King & Kutas 1995; Just et al. 1996; Stromswold et al. 1996; Müller et al. 1997; Münte et al. 1997; Caplan et al. 1998; 1999; 2000; 2001; Cooke et al. 2001; Fiebach et al. 2002; Traxler et al. 2002; Constable et al. 2004; Chen et al. 2006; Caplan et. al. 2008).

Why are object A'-dependencies more difficult?

- In an object A'-dependency, the subject interferes (Rizzi 2013).

- Similarity between subject/object increases processing difficulty or results in ungrammaticality altogether:

  1. [*When do you wonder [who left __ ?]]

- Open question: which features are relevant for intervention?

Noun phrase similarity (Gordon et al. 2001)

Taken from Gordon et al. 2002: 1415
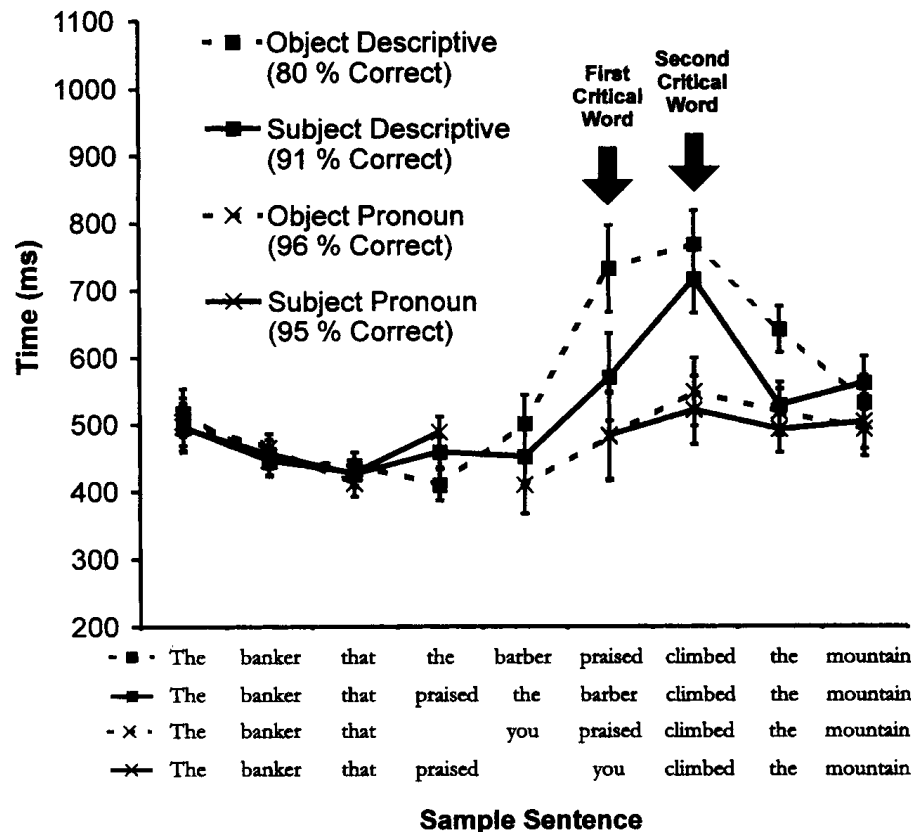
Gender features: Italian vs. Hebrew (Belletti et al. 2012)

Subject relative, same gender

1. Show me **the woman** that draws **the girl**

Subject relative, different gender

2. Show me **the (male) doctor** that draws **the girl**

Object relative, same gender

3. Show me **the girl** that **the woman** draws

Object relative, different gender

4. Show me **the girl** that **the (male) doctor** draws

➢ Gender had a facilitating effect in Hebrew, but not in Italian.

➢ Explanation: Gender features are not movement attracting features in Italian, but they are in Hebrew.

Two different concepts of intervention

- **Relativized Minimality (RM):** only morphosyntactic features, specifically the ones triggering movement cause intervention effects (Rizzi 1990; 2004, Starke 2001).

- **Memory interference**: any cognitively or perceptually salient features cause intervention (Bever 1974; Gordon et al., 2001; 2002; 2004; 2006).

- These approaches make divergent predictions.

- We wanted to test whether similarity in **case features (structural vs. lexical)** induces intervention effects.

Interim

- The more similar subject and object are, the more difficult the object A'-dependency becomes.

- Conversely: feature dissimilarity facilitates processing object A'-dependencies.

  … and the main question: **is intervention a general cognitive constraint, or syntax-specific?**

Previous studies on case intervention

- Friedmann et al. (2017): presence (1) or absence (2) of optional case marking in Hebrew doesn't make object A'-dependencies easier to process.

1. Et   eize   pil   ha-arie   martiv?

   ACC which   elephant   the-lion wets?

2. Eize   pil   ha-arie   martiv?

   Which elephant   the-lion wets?

Explanation

- Case-features do not trigger movement: only those features that attract A'-movement cause intervention.

- However: structural case features may not be relevant to RM: they are assigned automatically.

- Moreover: in the Friedmann et al. study, only the object bore visible case morphology.

- Therefore, it might be more felicitous to look at lexical case marking and cases where both subject and object carry overt case morphology.

- German allows us to do this.

Case marking in German (masc. DPs)

- German overtly case-marks for nominative, accusative, genitive and dative.

- Nominative and accusative are structural cases, assigned to specific positions.

- Dative and genitive are traditionally analyzed as lexical cases, dependent on the lexical properties of the governing head.

- German has a limited set of transitive verbs that assign dative case to their direct object: *helfen* (help), *gratulieren* (congratulate).

  1. Ich helfe *dich/dir

     I help you.ACC/you.DAT

Example

1. Dative verbs

+lex   +struct

Das   ist [der   Dieb, dem]   [der   Detektiv] __   gefolgt   ist.
That   is   the   thief who.DAT the.NOM   detective   followed is
'That the thief, who the detective followed'

2. Accusative verbs

+struct   +struct

Das   ist [der   Dieb, den]   [der   Detektiv] __   erschreckt hat.
That   is   the   thief, who.ACC the.NOM   detective   scared has
'That is the thief who the detective scared'

Our study

- Comparing subject and object A'-dependencies in relative clauses and wh-questions.

- Comparing transitive dative to transitive accusative verbs.

- Predictions:

  RM: case-features do not play a role, no facilitating effect of dative case.

  Memory interference: any type of feature (dis)similarity affects processing, including case.

Table 1: experimental conditions and materials

Relative clauses

Case	Arg	Example
Dat	Sub	Das ist der Detektiv, der dem Dieb gefolgt ist. That is the detective who.NOM the.DAT thief followed is 'That is the detective who followed the thief'
	Obj	Das ist der Dieb, dem der Detektiv gefolgt ist. That is the thief who.DAT the.NOM detective followed is 'That is the thief who the detective followed'
Acc	Sub	Das ist der Detektiv, der den Dieb erschreckt hat. That is the detective who.NOM the.ACC thief scared has 'That is the detective who scared the thief'
	Obj	Das ist der Dieb, den der Detektiv erschreckt hat. That is the thief, who.ACC the.NOM detective scared has 'That is the thief who the detective scared'

Wh-questions

Case	Arg	Example
Dat	Sub	Der Notar weiß, welche-r Manager dem Juristen geschmeichelt hat. The notary knows which-NOM manager the.DAT lawyer flattered has 'The notary knows which manager flattered the lawyer'
	Obj	Der Notar weiß, welche-m Juristen der Manager geschmeichelt hat. The notary knows which-DAT lawyer the.NOM manager flattered has 'The notary knows which lawyer the manager flattered'
Acc	Sub	Der Notar weiß, welche-r Manager den Juristen geächtet hat. The notary knows which-NOM manager the.ACC lawyer respected has 'The notary knows which manager respected the lawyer'
	Obj	Der Notar weiß, welche-n Juristen der Manager geächtet hat. The notary knows which-ACC lawyer the.NOM manager respected has 'The notary knows which lawyer the manager respected'

Method

- Self paced reading, followed by comprehension question

Critical sentence

Das ist der Detektiv, der dem Dieb gefolgt ist.

'That is the detective who followed the thief'

Verification question (answer: yes)

Folgte jemand dem Dieb?

'Did someone follow the thief?'

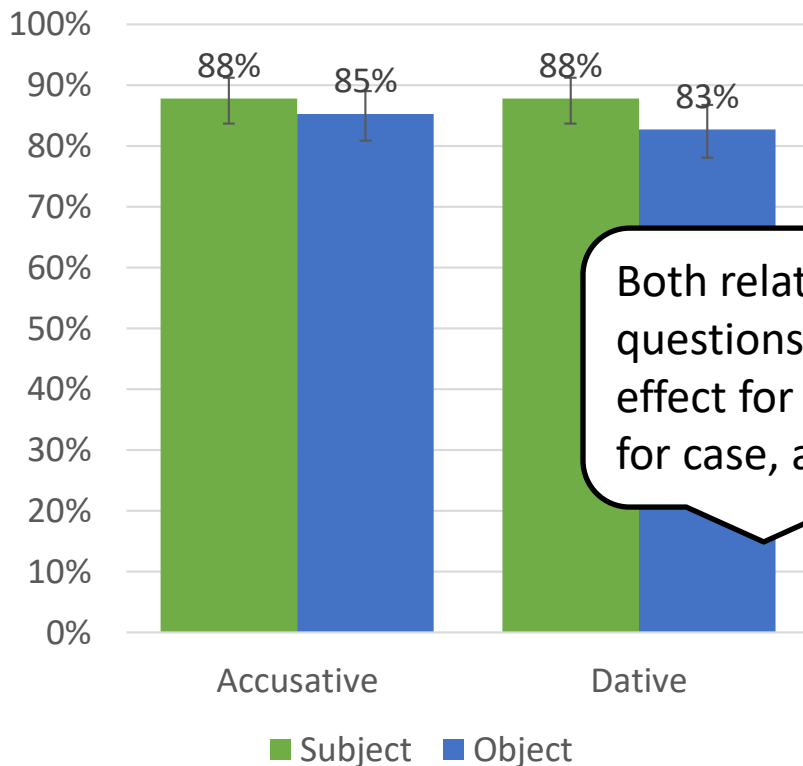Verification question (answer: no)

Folgte der Dieb jemandem?

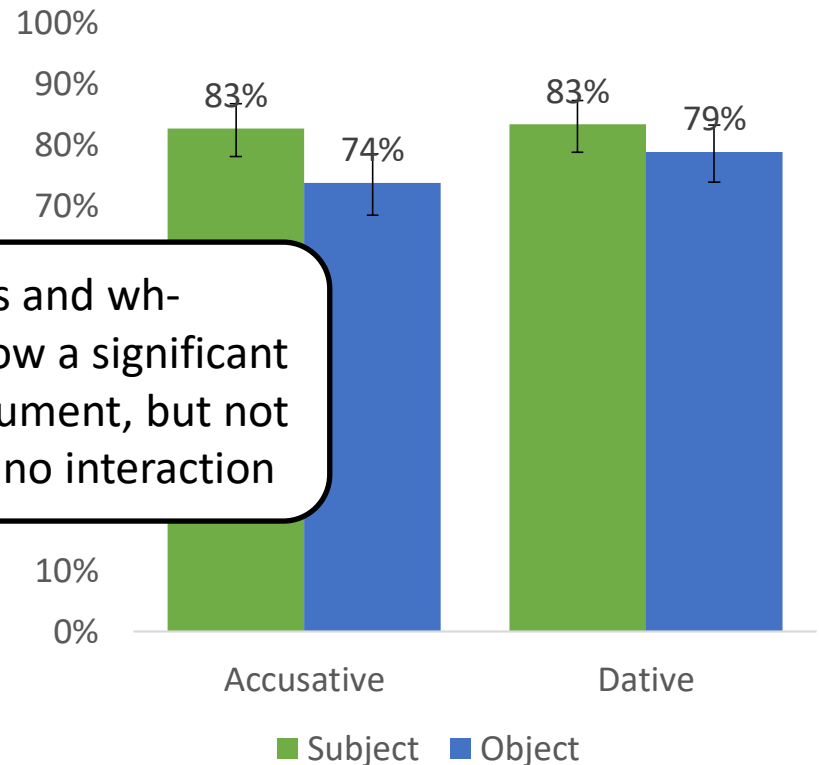'Did the thief follow someone?'

Participants & design

- 39 native speakers of German, mostly students from the University of Oldenburg.

- 28 female.

- Aged between 19-49.

- 16 items per condition, divided over 2 lists.

- 36 filler items (passives)

Results
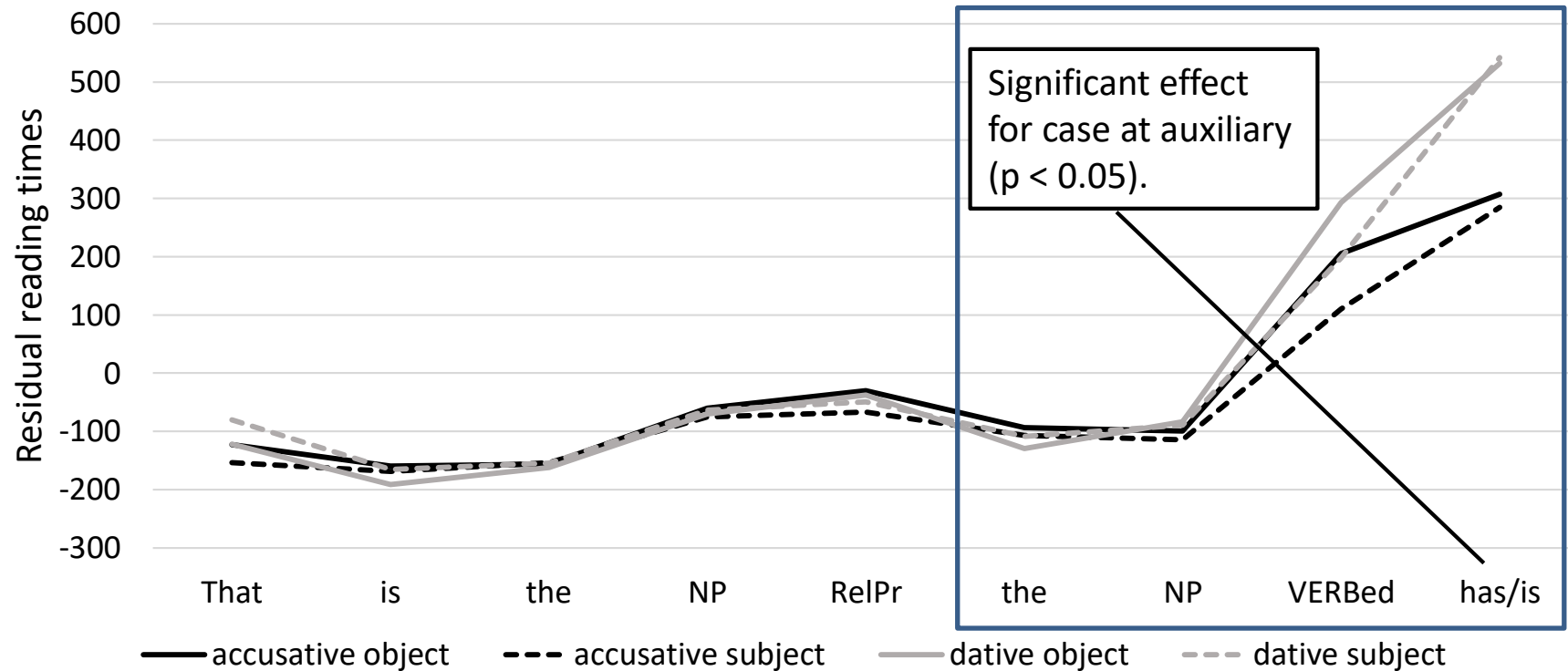

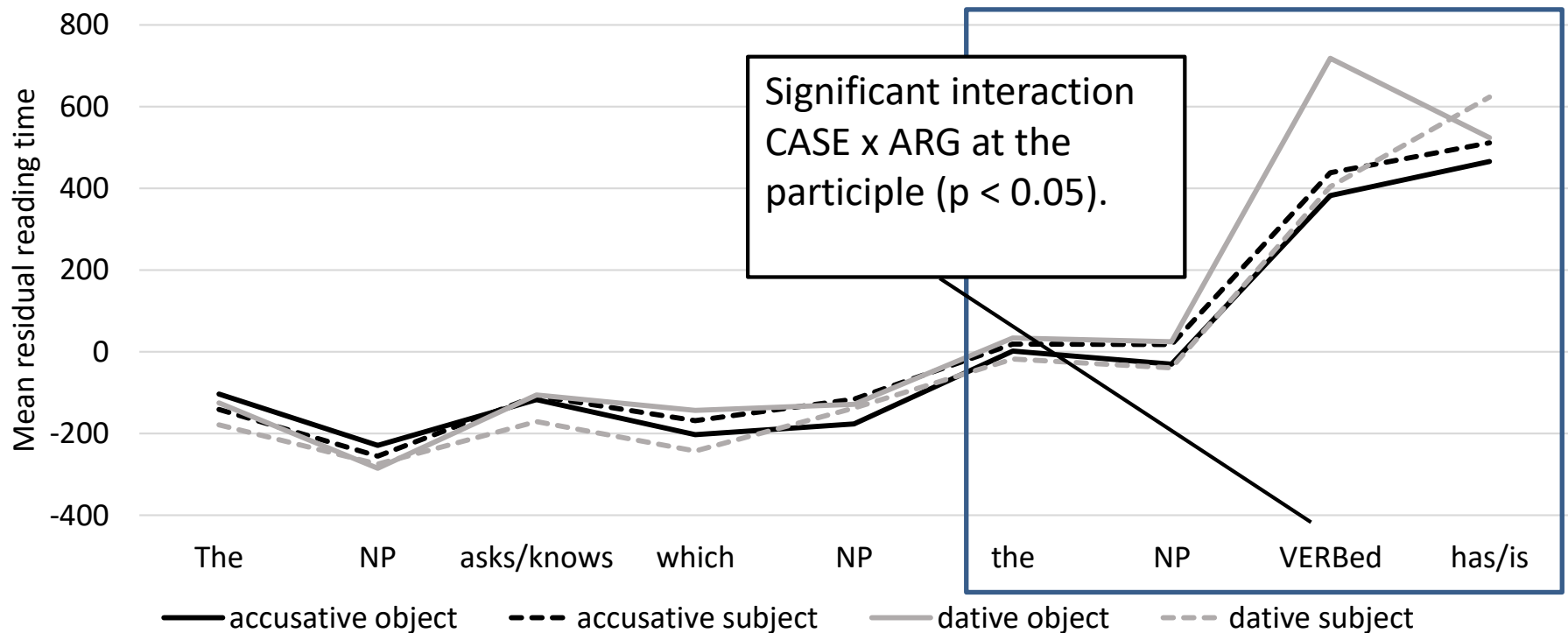Graph 1: Accuracy: relative clauses

Graph 2: Accuracy wh-questions

Both relatives and wh-questions show a significant effect for argument, but not for case, and no interaction

Graph 3: Residual reading times relative clauses

Graph 4: Residual reading times wh-questions

Significant interaction CASE x ARG at the participle ($p < 0.05$).

Y-axis: Mean residual reading time (800, 600, 400, 200, 0, -200, -400)

X-axis: The, NP, asks/knows, which, NP, the, NP, VERBed, has/is

Legend: accusative object, accusative subject, dative object, dative subject

Summary

- No facilitating effect for dative case: if any, dative conditions are more difficult to process, in line with other processing studies (cf. Czypionka & Eulitz 2018).

- No support for memory interference accounts, results in line with RM.

- But: what causes the increased processing difficulty for dative case?

Difficulty of dative case

1. Dative case is a less reliable cue for syntactic role:
   a) Dative objects retain their case under passivization.
   b) Small set of verbs have quirky dative subjects (e.g *mich friert* – 'me freezes'.
   c) Indirect objects also receive dative case.

2. Lexical case assignment is more costly: requires access to the lexical feature specification.

3. Dative case is associated with more syntactic structure, this comes at a higher cost.

Structural analyses of dative case

- Two diverging views:

1. Dative case results in an additional layer around the DP, a Kase Phrase (KP): (Bader et al., 2000), Bayer et al. 2001 & Bader & Bayer 2006).

2. Dative case comes with an additional projection within the VP – an Applicative phrase: (ApplP - cf. McFadden 2006, for German)
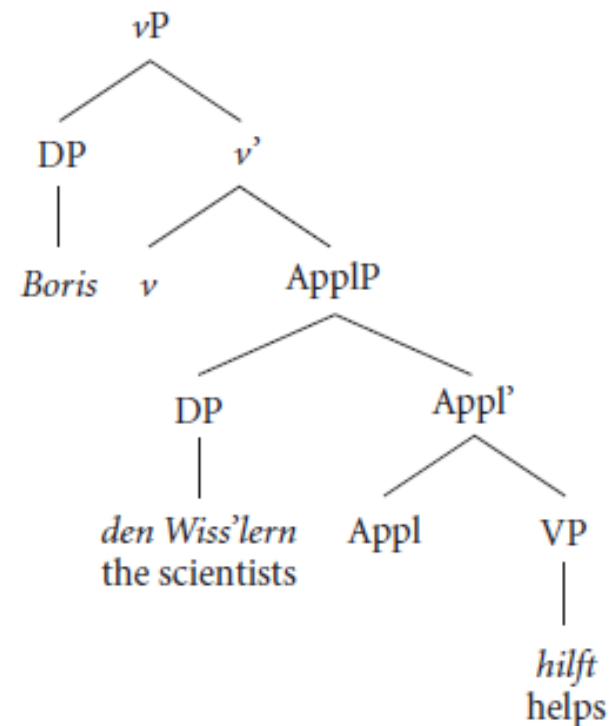
Taken from McFadden 2006: 54

Arguments for ApplP approach

- Processing difficully of dative conditions observed on/right after the verb, not on the DP, as the KP analysis would predict.

- Slowdown on the verb not just a frequency issue: dative and accusative verbs were matched for frequency/length.

Conclusions

- Dative ("lexical") case does not help in processing object A'-dependencies.

- In line with syntactic accounts of intervention (Relativized Minimality).

- RTs show that the difficulty of dative case is associated with the verb, suggesting dative verbs have a more complex VP.

- This is in line with current formal approaches that assume a more elaborate vP for dative verbs.

Acknowledgments

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Further literature

- For more details and the references used in this presentation, please find the manuscript version of this study at:

http://www.ankelienschippers.com/site/assets/files/1096/case_intervention_web_version.pdf