Cracking the cluster: The acquisition of verb clusters in Dutch

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Verb clusters in Dutch

(1) a. (…) dat ik koekjes **wil** **snel* **eten.**
(…) that I cookies want eat.INF

1 ***2***

= 1-2 (or red, or ascending order)

b. (…) dat ik koekjes **eten** **wil.**
(…) that I cookies eat.INF want

2 ***1***

= 2-1 (or green, or descending order)

Both: '(…) that I want to eat cookies.'

! ***Note: the higher the number, the deeper the verb is embedded.***

Claim: 1-2-(3) is default in Standard Dutch

- Answers cluster learnability question
- Explains different response patterns preschoolers & kindergartners
- Early application general (i.e. not construction-specific) rule

- Data: 3 experiments, 120 children (2;8-6;7)
- NOT what previous studies would predict

Verb cluster order in Dutch

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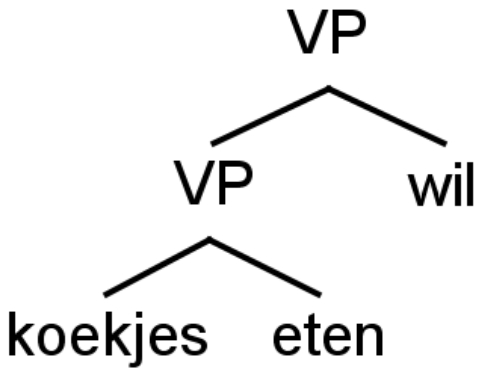
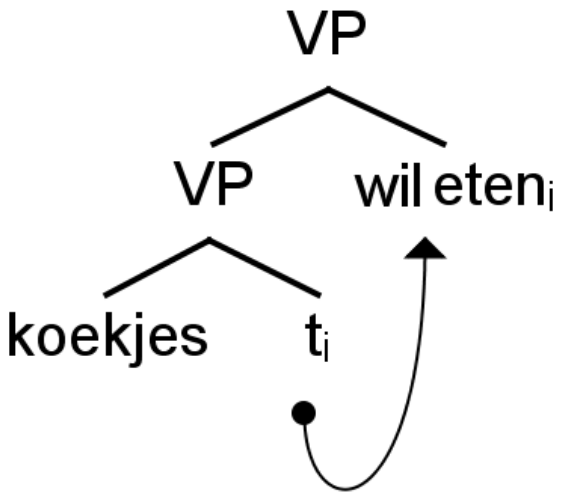
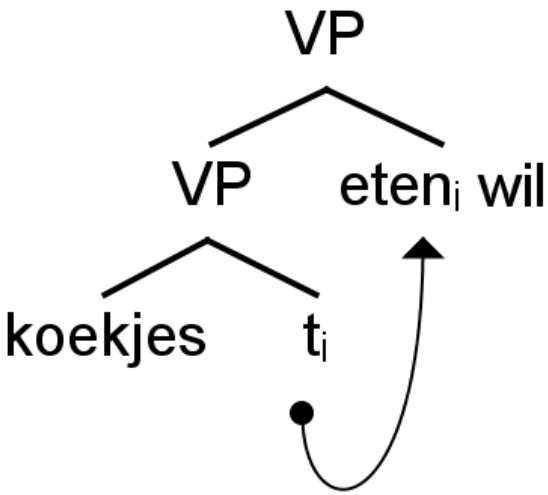
Verb raising

Before raising	*1-2 order*	*2-1 order*
		

koekjes eten wil / wil eten

cookies eat.INF want / want eat.INF

'want to eat cookies'

(Evers 1975)

Varieties and variation (1)

- Variables: order, verb type, finiteness, length

Bipartite	1-2	2-1
MOD-INF, Finite	wil eten 'want to eat'	eten wil
AUX-PART, Finite	heeft gegeten 'has eaten'	gegeten heeft
MOD-INF, Non-Fin	te willen eten 'to want to eat'	*eten te willen
AUX-PART, Non-Fin	te hebben gegeten 'to have eaten'	gegeten te hebben

Varieties and variation (2)

Tripartite clusters:	moet	hebben	verstopt	(1-2-3)
	must	have.INF	hide.PART	
	moet	verstopt	hebben	?(1-3-2)
	hebben	moet	verstopt	*(2-1-3)
	hebben	verstopt	moet	*(2-3-1)
	verstopt	moet	hebben	(3-1-2)
	verstopt	hebben	moet	?(3-2-1)

All: ‘must have hidden’

What's learned first?

1. Asymmetry in use (Standard Dutch)
   - Spoken Dutch: 2-1 orders ('eat want')
   - Written Dutch: 1-2 orders ('want eat')

     (cf. De Sutter 2005, Arfs 2007, Coussé 2008, Stroop 2009)
   - Construction-specificity
   - Prediction: 2-1 is acquired first/is default.

2. Language acquisition: Zuckerman (2001)
   - L1 Dutch children first prefer 2-1, later switch to 1-2

We say: Reinterpret Z's data, 2-1 is NOT default.

2-1 or OV?

(2) (…) dat die gestolen fiets **groen was** / ***was groen.**
(…) that that stolen bike **green was** / **was green**
'(…) that stolen bike was green.'

2-1 **1-2**

(3) (…) dat die groene fiets **gestolen was** / **was gestolen.**
(…) that that green bike **stolen was** / **was stolen**
'(…) that green bike was stolen.'

- Learnability problem:
- (2) and (3) first seem the same.
- 2-1 follows from OV word order; 1-2 does not.
- Thus: 1-2 orders necessarily evidence for verb raising, 2-1 orders aren't.
- Note difference 'adjectival' participles and clearly verbal infinitives.

Claim: 1-2-(3) is default in Dutch

- Early 2-1 orders are not clusters, but 'OV'
- First construction-based:
  1-2 orders trigger clusterhood; starting with MOD-INF
- Then general rule: 1-2 orders are (default) clusters
- Later 2-1 orders become clusters
- Consequence:
  most frequent order in spoken Dutch acquired last!

Predictions

- Children who have acquired verb raising show different behavior than those who haven't, namely:
  - Non-raisers produce fewer 1-2 cluster orders;
  - Non-raisers respond differently to AUX-PART than MOD-INF clusters.
  - (Early) verb raisers prefer 1-2 cluster orders;
  - (Early) verb raisers respond similarly to AUX-PART and MOD-INF clusters.

Experiments (1)

- 3 Sentence Repetition Tasks (SRTs)
- 9-10 words; 10-14 syllables
- Pre-recorded stimuli, picture support

(4) Loes is blij Tim taart **te** **hebben** **gegeven**

Loes is happy Tim cake **to** **have** **given**

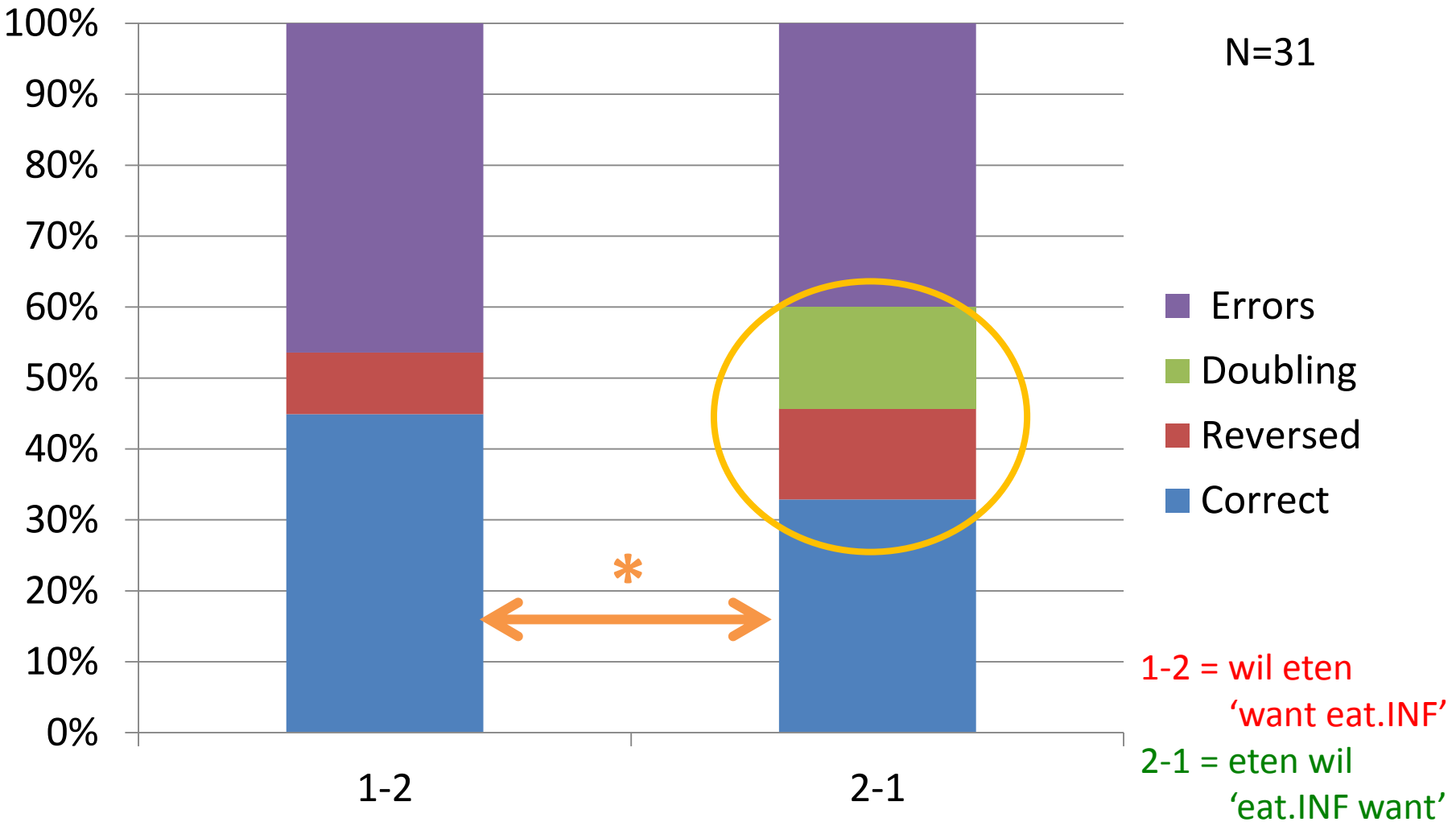
'Loes is happy to have given Tim cake.'

Participants

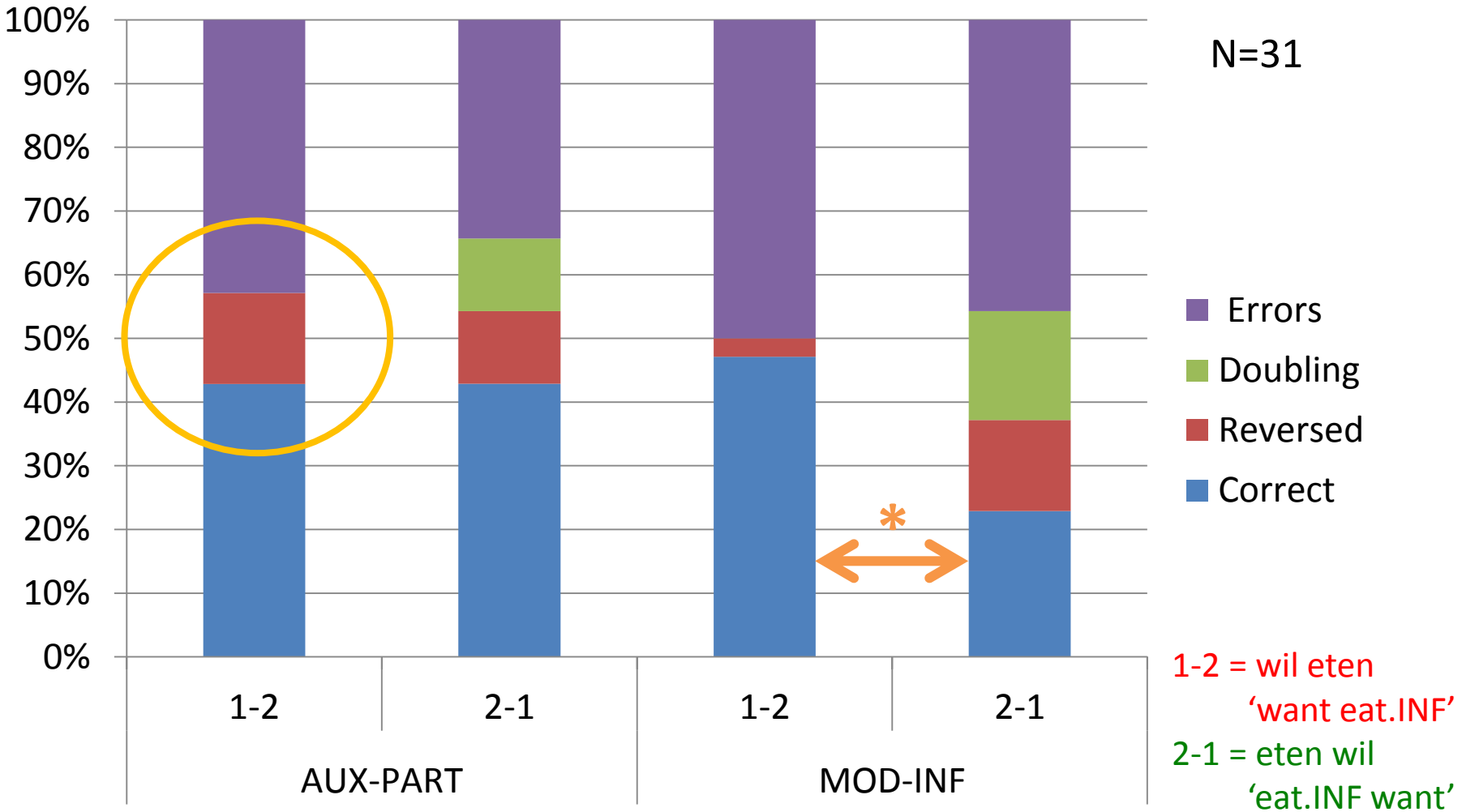
Participants	Bipartite		Tripartite
	1	2	
Preschoolers	31 (2;8 – 4;0, m= 3;7)	---	---
Kindergartners	25 (4;0 – 5;5, m= 4;9)	40 (4;0 – 6;7, m= 5;6)	24 (4;0 – 6;2, m=4;9)

Total: 120 children

Preschoolers: Bipartite



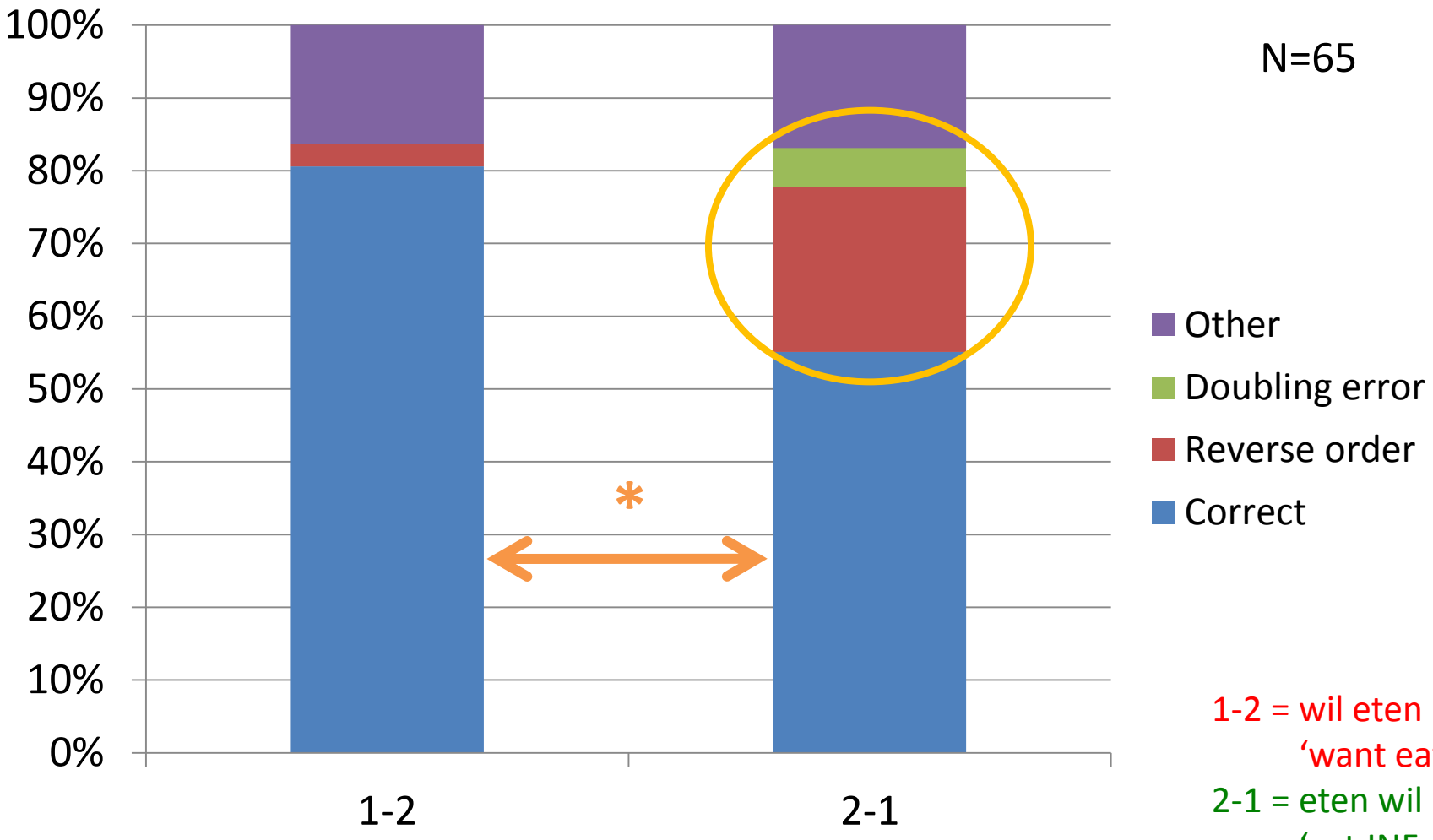
Preschoolers: AUX-PART vs. MOD-INF



Preschoolers: Bipartite

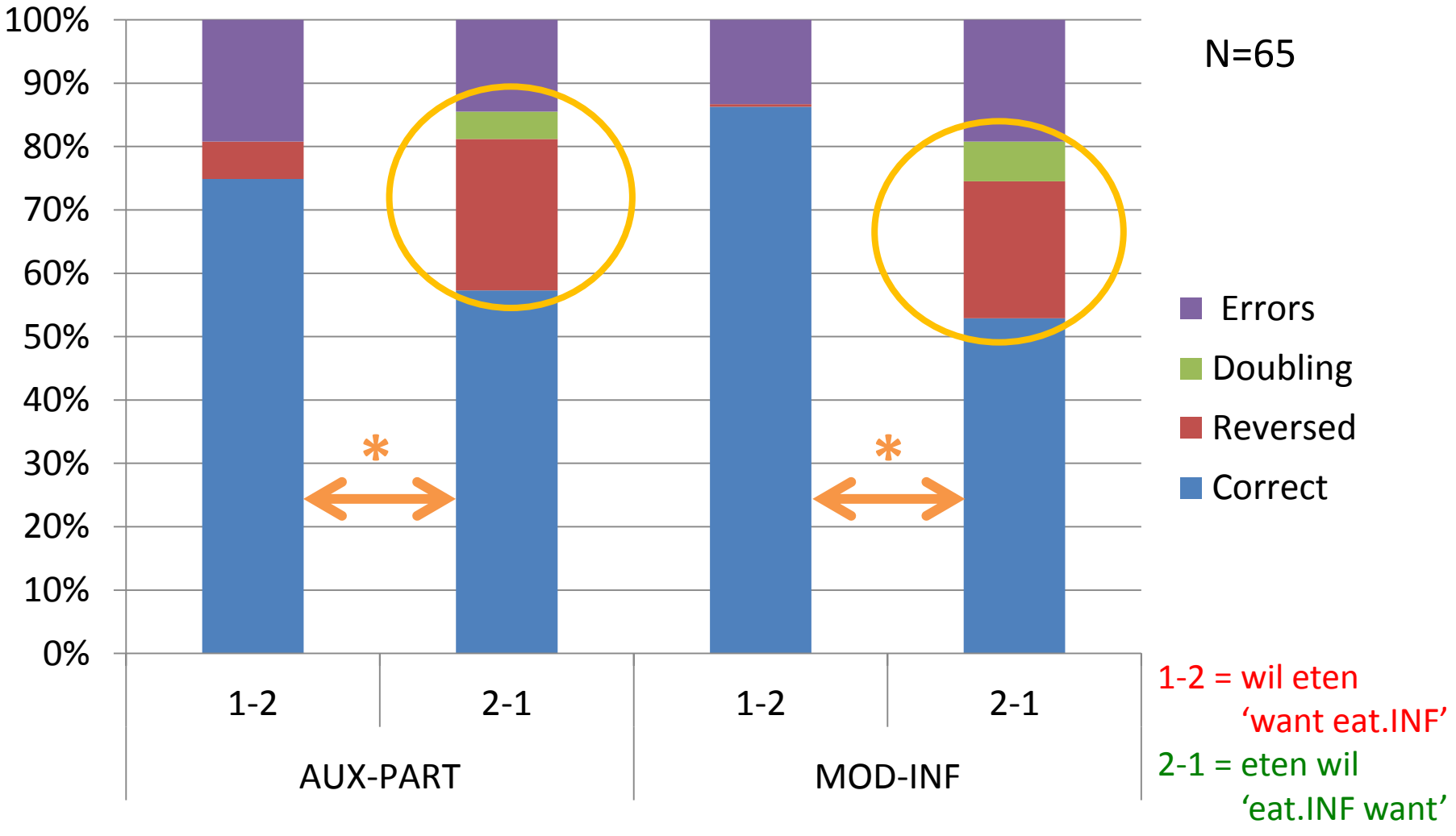
- 3-year-olds
  - do not do well on clusters in general;
  - show different behavior on AUX-PART stimuli than MOD-INF.

Kindergartners: Bipartite



1-2 = wil eten
'want eat.INF'
2-1 = eten wil
'eat.INF want'

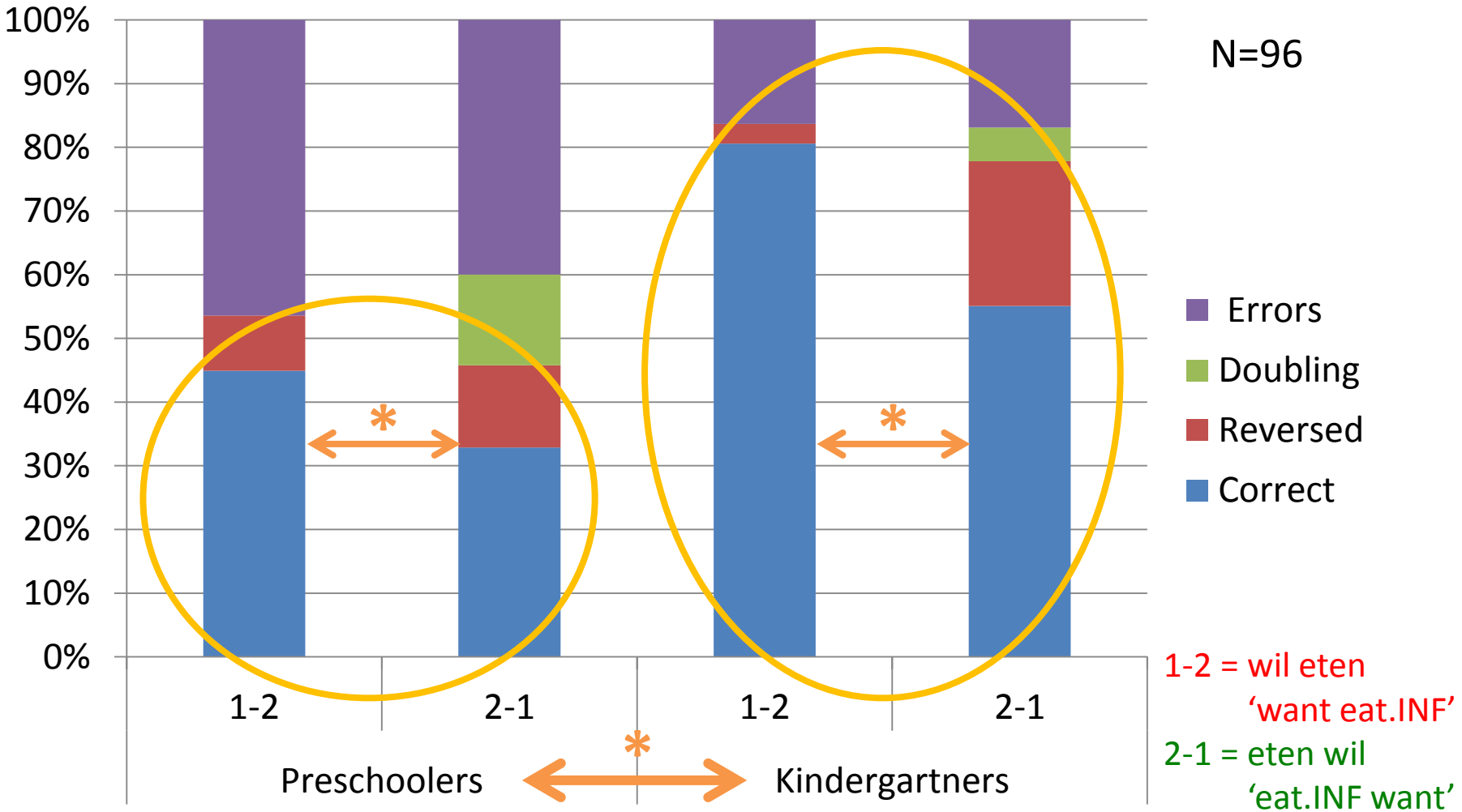
AUX-PART = MOD-INF



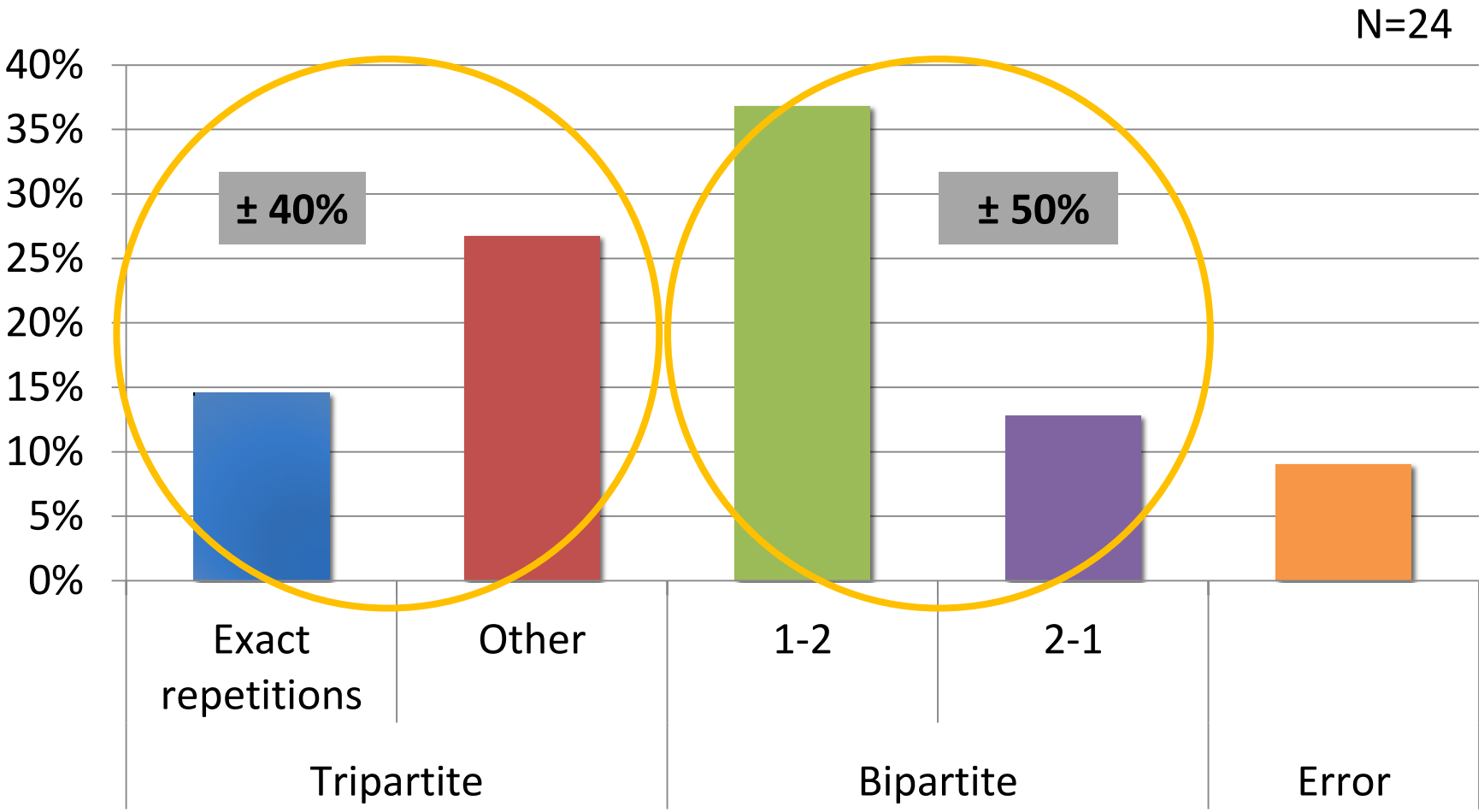
Kindergartners: Bipartite

- 4-to-6-year-olds:
  - Perform much better on verb clusters
  - Performance AUX-PART and MOD-INF similar

Preschoolers vs Kindergartners



Responses to Tripartite Stimuli



Predictions and Findings

- Preschoolers:
  - No clear order preference in AUX-PART clusters
  - Preference for **1-2 in MOD-INF** clusters
- Kindergartners:
  - Preference for **1-2 in all conditions** in bipartite clusters
  - Preference for ascending orders in tripartite clusters
- Exact opposite from what literature would predict
- In line with what we predict

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Conclusion

- Our hypothesis
  - answers cluster learnability question;
  - explains difference preschoolers & kindergartners;
  - strongly suggests early application general rule.

References

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Thank You!

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Discussion

What about…

- (Spoken) adult Dutch?
- Frisian or German children?
- Larger clusters?