

Easy as 1-2-(3)?

Acquiring verb clusters in Dutch

Caitlin Meyer

c.m.meyer@uva.nl

Sabine van Reijen

sabine.vanreijen@student.uva.nl

Fred Weerman

weerman@uva.nl

1-2-(3) orders are Standard Dutch default

- Answers cluster learnability question
- Explains difference preschoolers & kindergartners
- Early application general rule
- Data: 3 experiments, 120 children (2;8-6;7)
- NOT what previous studies would predict

Verb cluster order in Dutch

(1)	a.	(...)	dat	ik	koekjes	1	2	wil *<i>nu</i> eten. want eat.INF	= 1-2 (or red, or ascending order)
		(...)	that	I	cookies				

	b.	(...)	dat	ik	koekjes	2	1	eten wil. eat.INF want	= 2-1 (or green, or descending order)
		(...)	that	I	cookies				

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

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

Verb raising

<i>Before raising</i>	<i>1-2 order</i>	<i>2-1 order</i>
<pre> graph TD VP1[VP] --- VP2[VP] VP1 --- wil1[wil] VP2 --- koekjes1[koekjes] VP2 --- eten1[eten] </pre>	<pre> graph TD VP1[VP] --- VP2[VP] VP1 --- wil_eten["wil eten_i"] VP2 --- koekjes2[koekjes] VP2 --- ti["t_i"] ti --> i["i"] </pre>	<pre> graph TD VP1[VP] --- VP2[VP] VP1 --- eten_wil["eten_i wil"] VP2 --- koekjes3[koekjes] VP2 --- ti3["t_i"] ti3 --> i3["i"] </pre>

All: koekjes wil eten

cookies 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.’

- (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 don't raise verbs show different behavior than children who do, namely
 - Non-raisers produce fewer clusters successfully;
 - Non-raisers produce fewer 1-2 orders;
 - Non-raisers respond differently to AUX-PART than MOD-INF clusters.
- Raisers produce clusters (fairly) successfully;
- (Early) raisers prefer 1-2 orders;
- (Early) 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

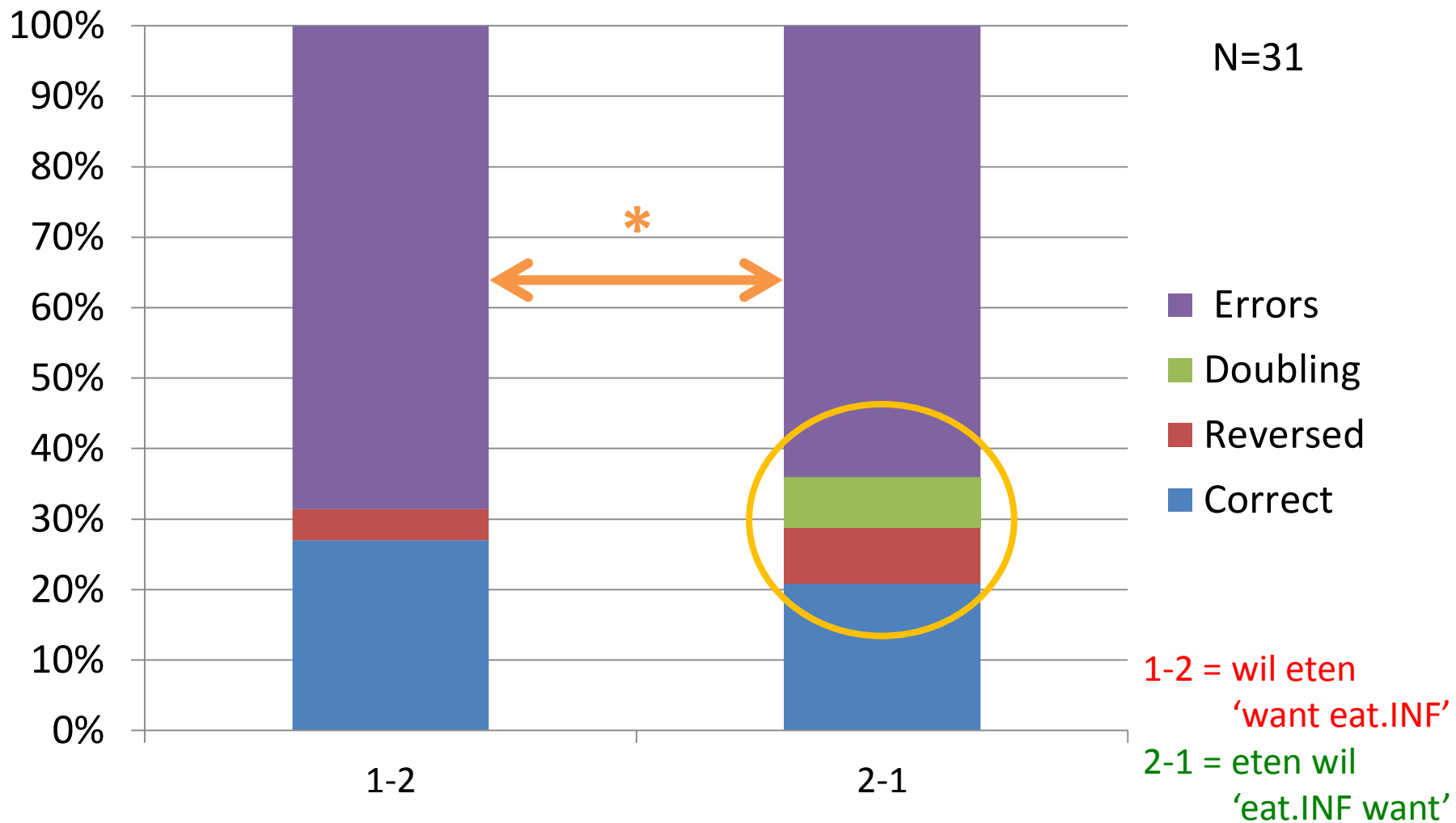


Participants

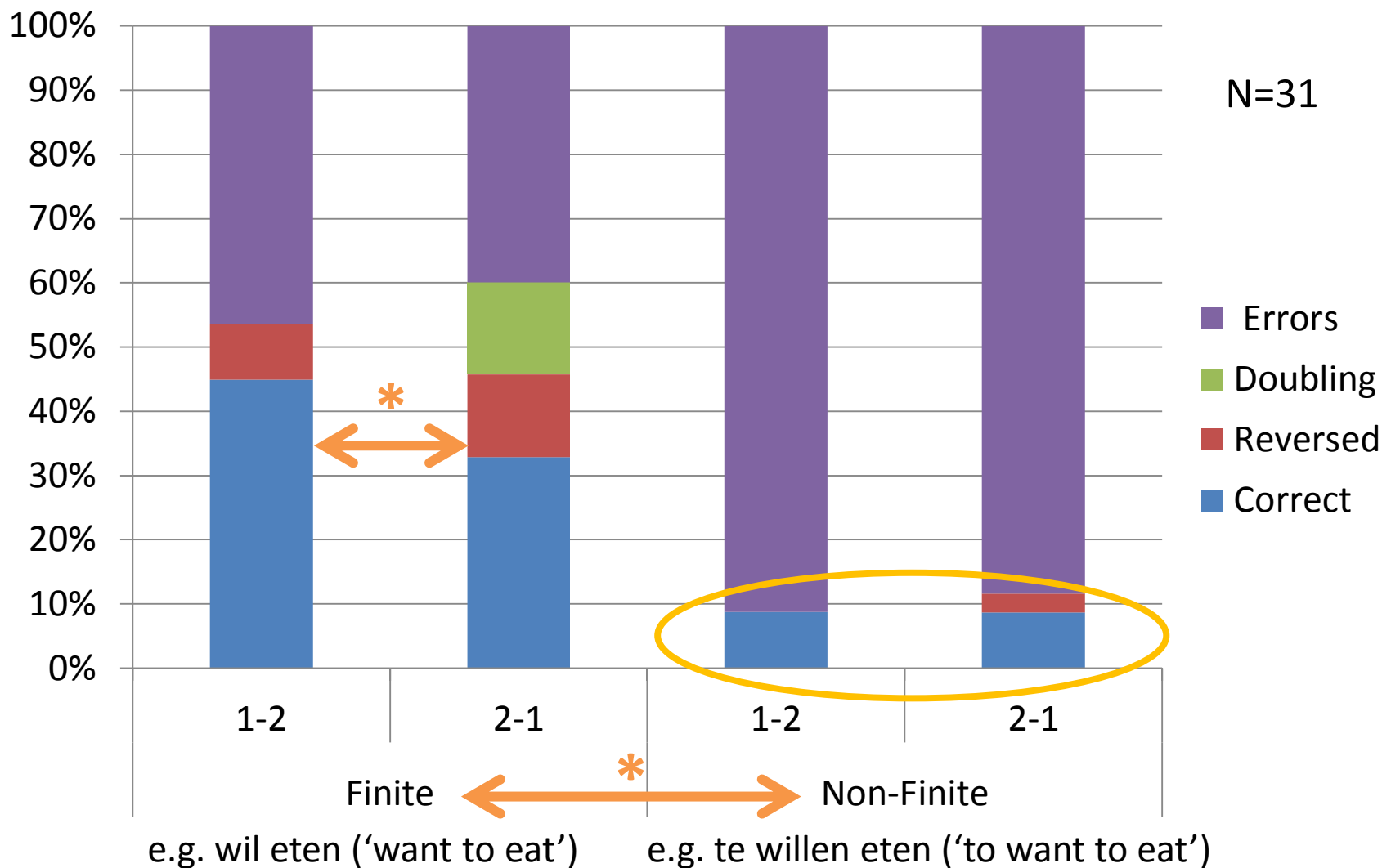
Participants	Bipartite		Tripartite
	1	2	
Preschoolers	31 (2;8 – 4;0, m= 3;7)	---	---
Kindergartners	25 (4;0 – 5;5, m= 4;9)	40 (4;0 – 6;7, m= 5;6)	24 (4;0 – 6;2, m=4;9)

Total: 120 children

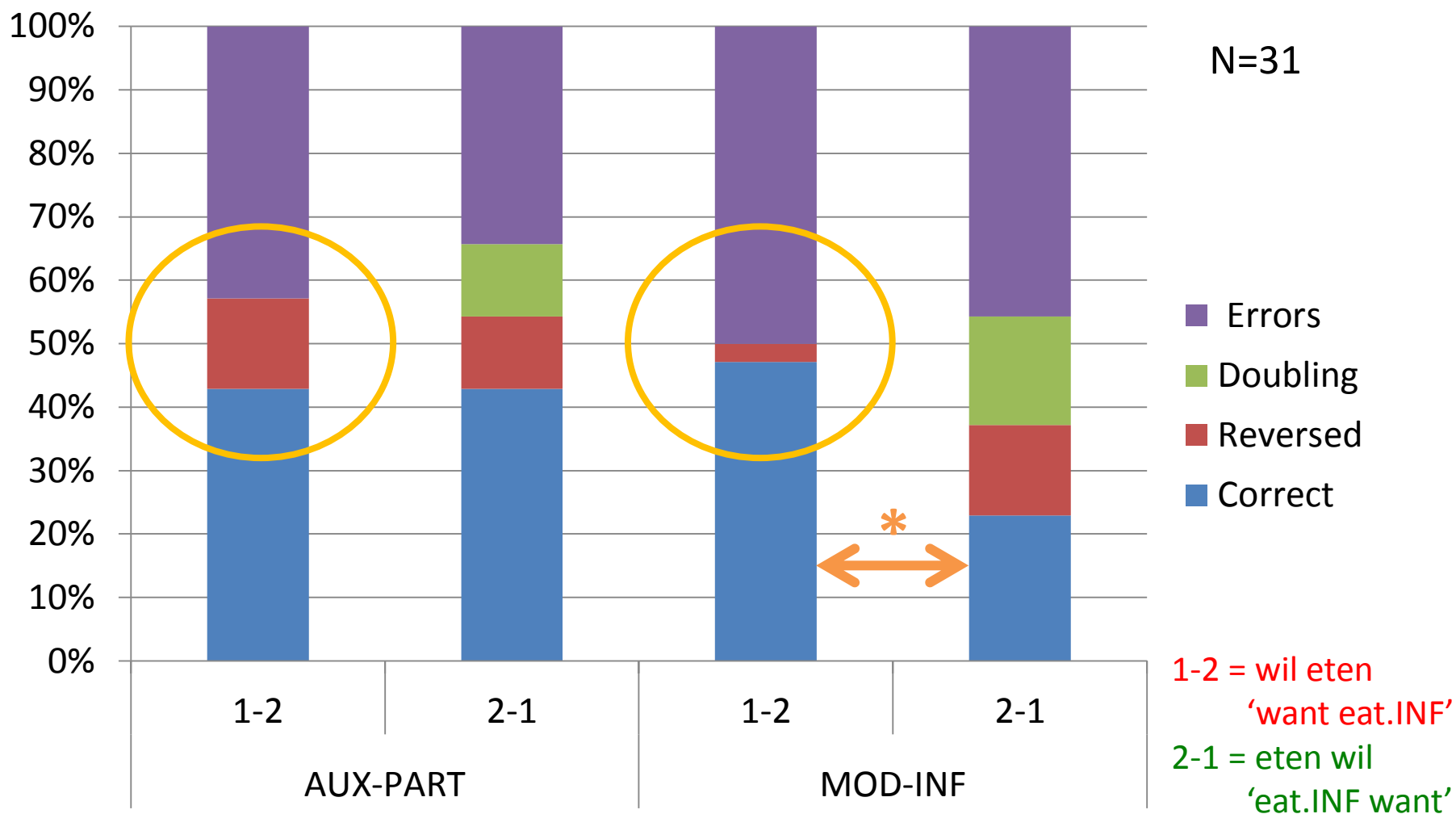
Preschoolers: Bipartite



Preschoolers: Finite vs Non-Finite



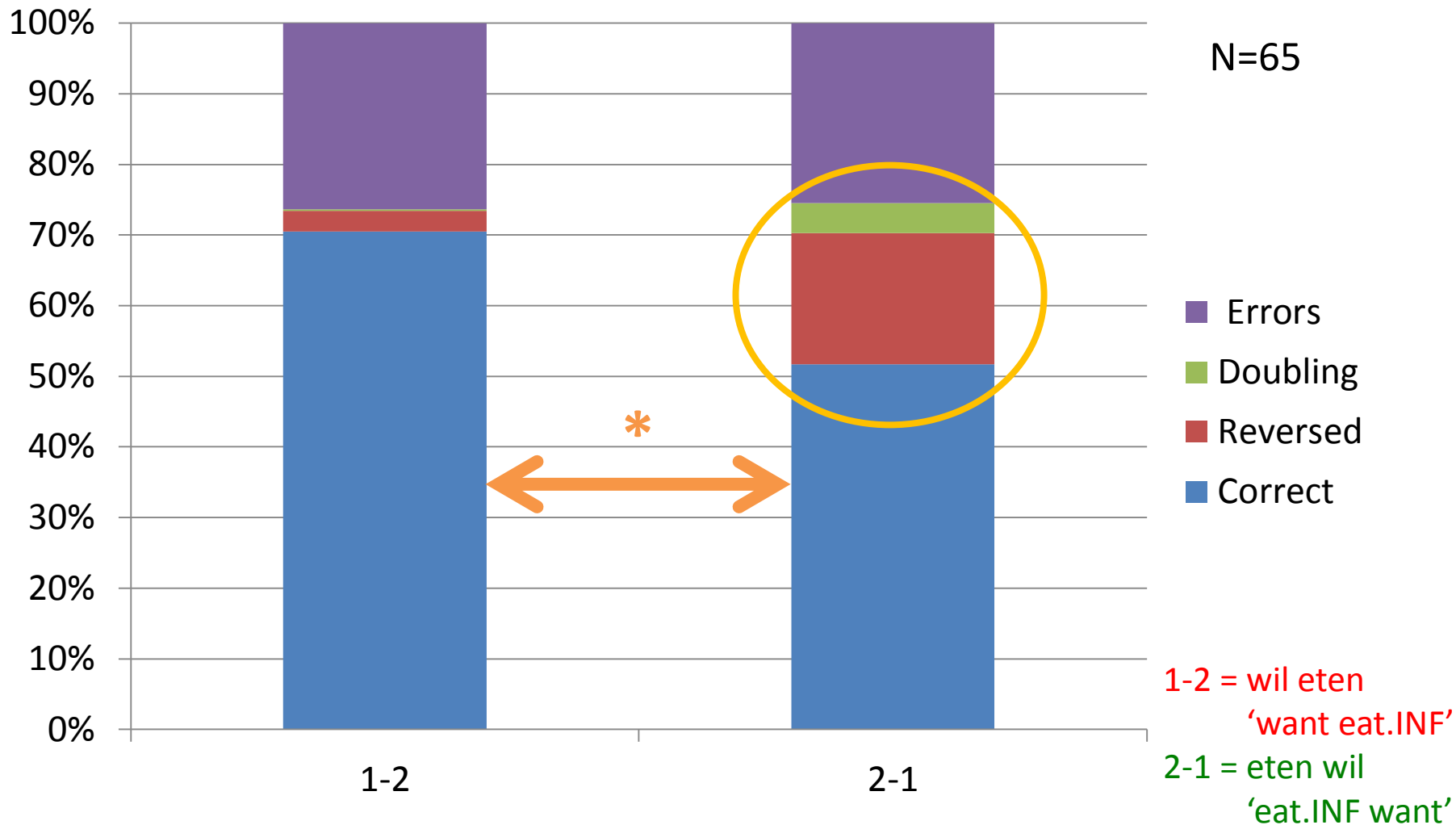
Preschoolers: AUX-PART vs. MOD-INF



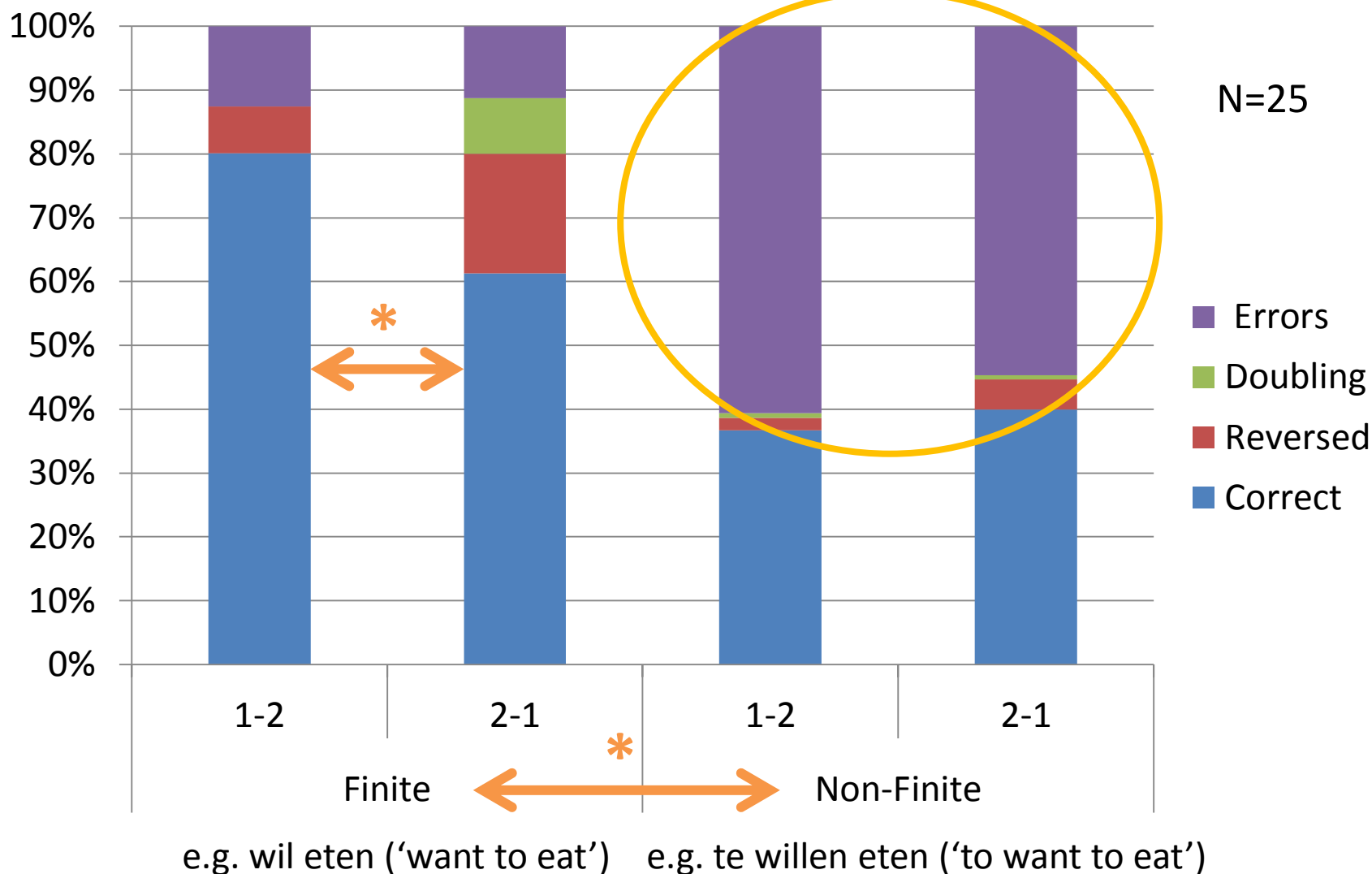
Preschoolers: Bipartite

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

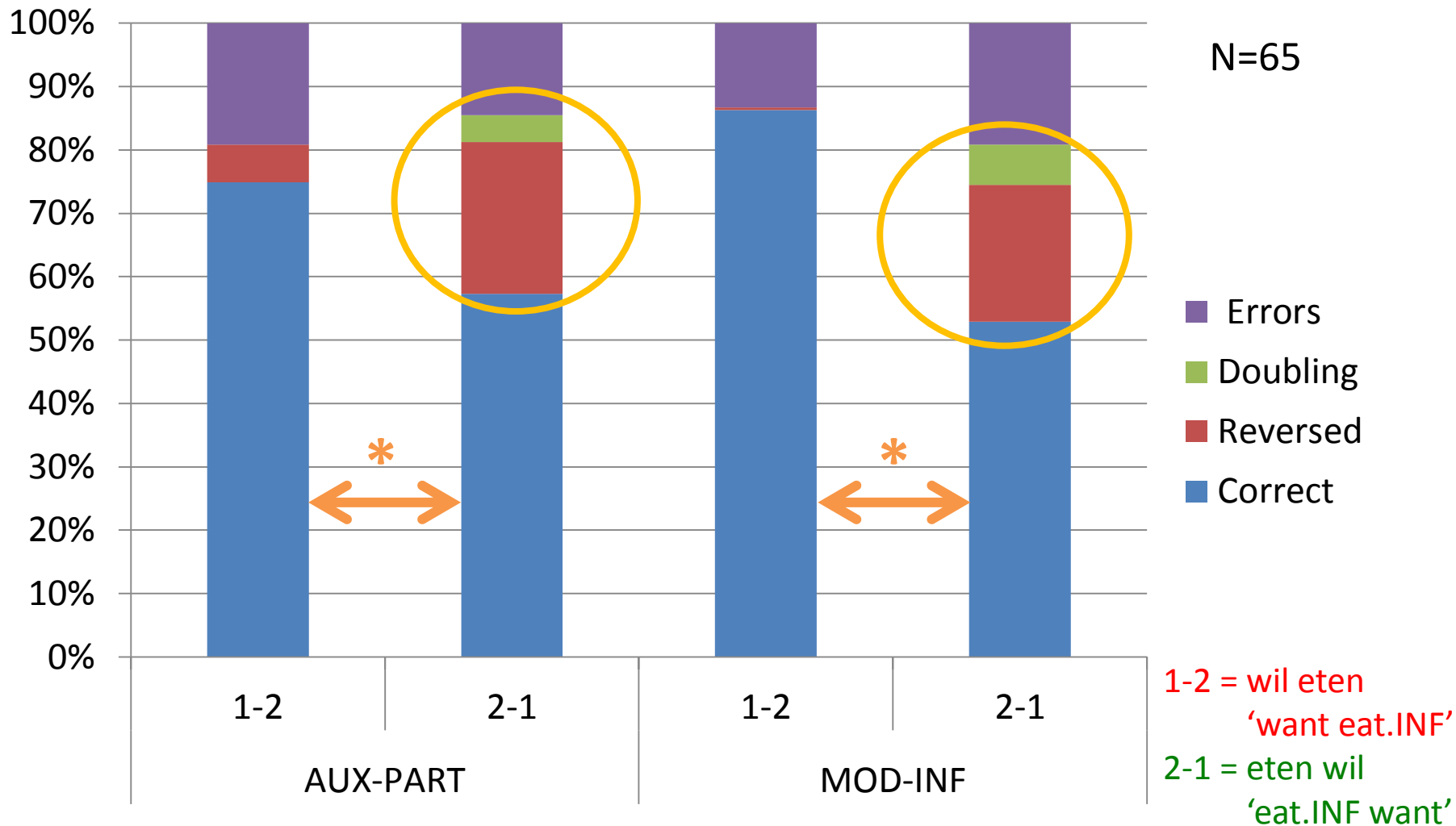
Kindergartners: Bipartite



Kindergartners: Finite vs Non-Finite



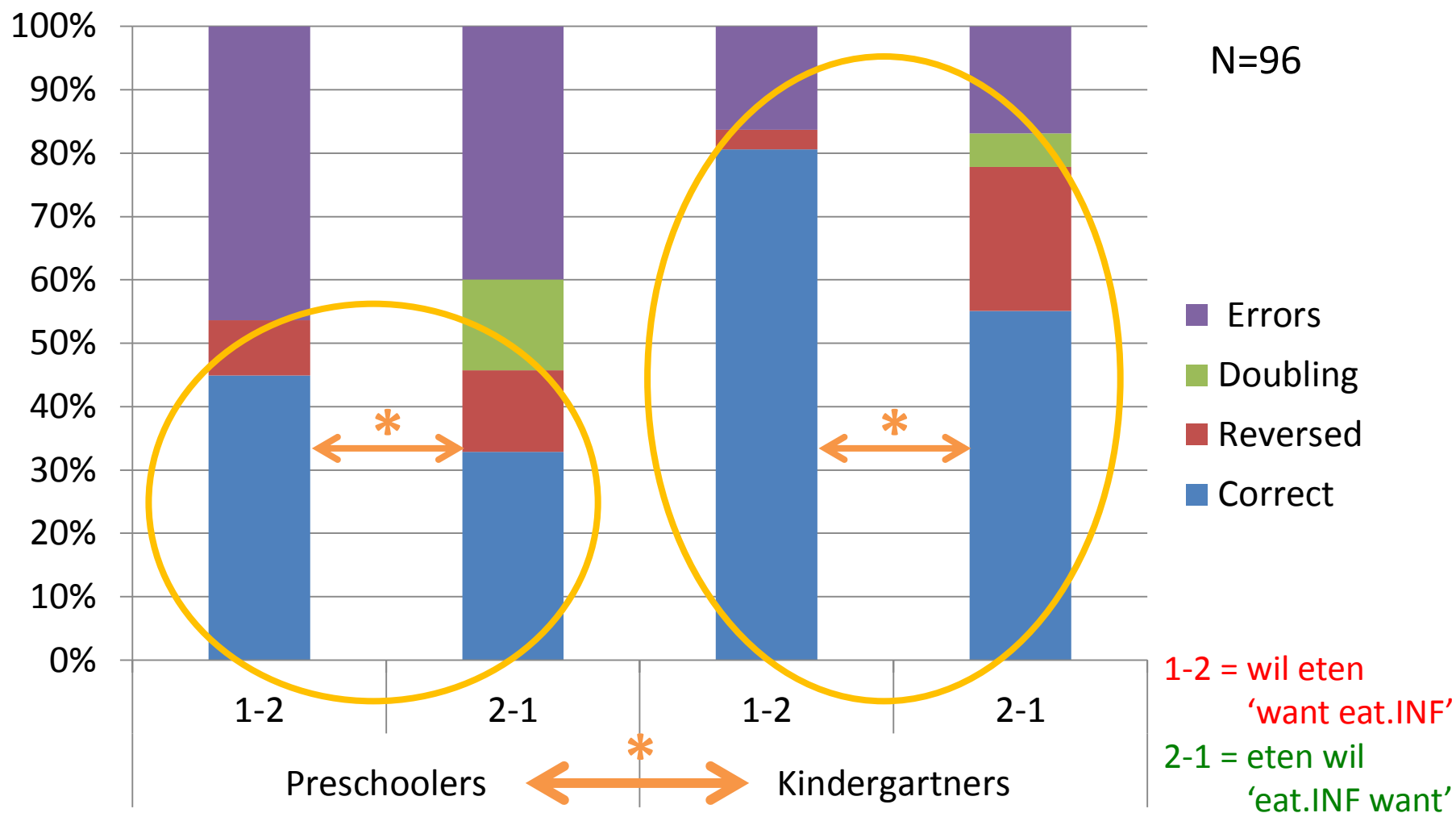
AUX-PART = MOD-INF



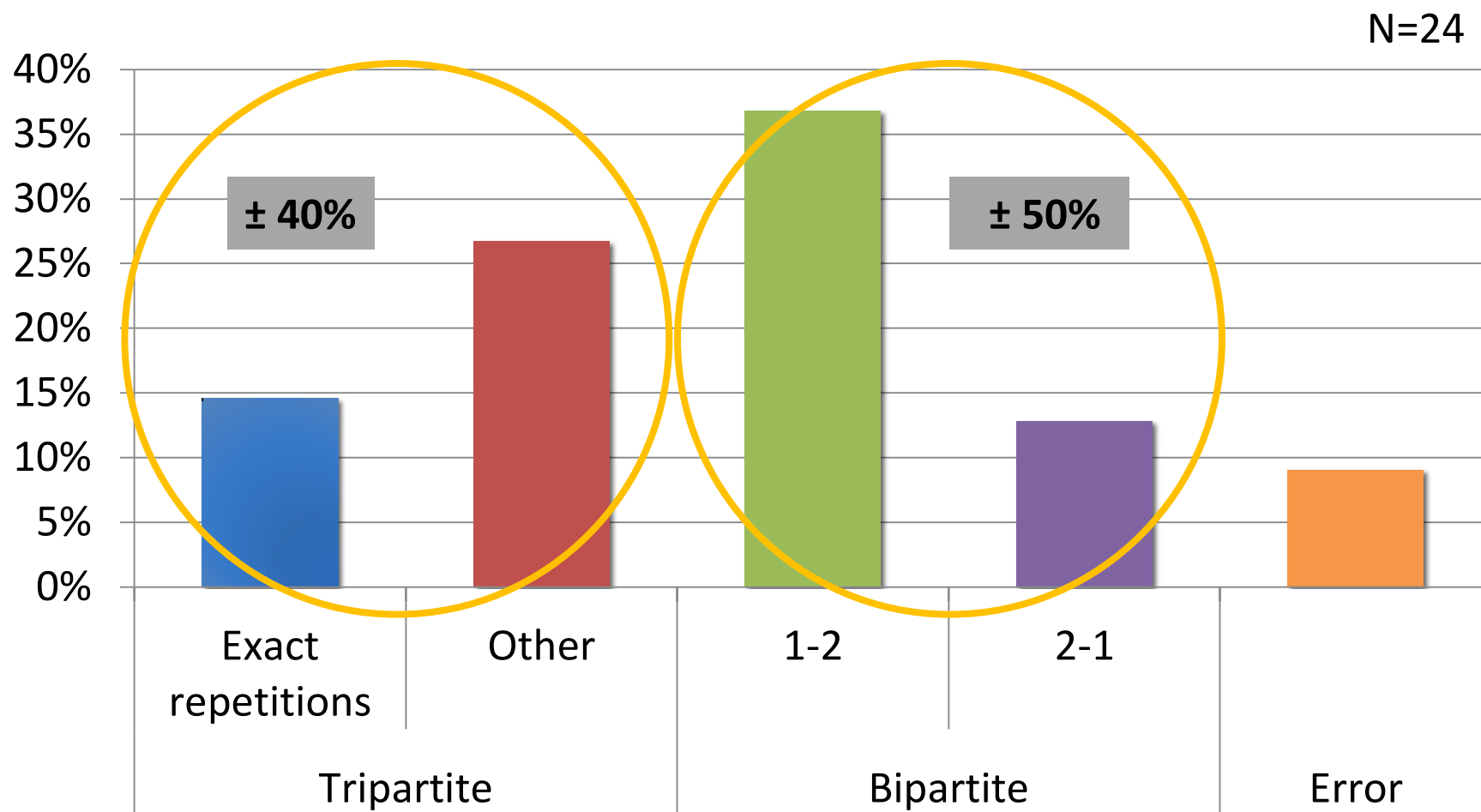
Kindergartners: Bipartite

- 4-to-6-year-olds:
 - Perform much better on verb clusters
 - Perform worst on infinitival 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

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!

Conclusion

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

References

- Buijs, S.J.M. (2013). *Sentence position effects on Dutch verbal inflection*. rMA Linguistics Thesis, UvA.
- Buijs, S.J.M., S.B. van Reijen & F.P. Weerman (in press). 'Verbal inflection errors in main and subordinate clauses: phonology or syntax?' *Linguistics in the Netherlands*, 30, in press.
- Coussé, E., M. Arfs & G. De Sutter (2008). 'Variabele werkwoordsvolgorde in de Nederlandse werkwoordelijke eindgroep. Een taalgebruiksgebaseerd perspectief op de synchronie en diachronie van de zgn. rode en groene woordvolgorde.' In: G. Rawoens (ed.), *Taal aan den lijve. Het gebruik van corpora in taalkundig onderzoek en taalonderwijs*, 29-47. Gent: Academia Press.
- De Sutter, G. (2009). 'Towards a multivariate model of grammar: the case of word order variation in Dutch clause final verb clusters'. In: A. Dufter, J. Fleischer & G. Seiler (eds.), *Describing and Modeling Variation in Grammar*. Trends in Linguistics. Studies and Monographs. Berlin: Mouton, 2009, pp. 225-254.
- Evers, A. (1975). *The Transformational Cycle in Dutch and German*. PhD dissertation, Utrecht University.
- MacWhinney, B. (2000). 'The CHILDES project: Tools for analyzing talk: Vol. 2. The database.' London: Lawrence Erlbaum Associates, Inc.
- Meyer, C.M. (2012). *Easy as 1-2-(3)? The acquisition of verb cluster orders in Dutch*. rMA Linguistics Thesis, UvA.
- Reijen, S.B. van (2013). *Order preferences in the acquisition of verb clusters*. rMA Linguistics Thesis, UvA.
- Stroop, J. (2009). 'Twee- en meerledige werkwoordsgroepen in gesproken Nederlands.' In: *Fons Verborum*. (eds. Egbert Beijk et al.), Leiden, pp. 459-469.
- Wurmbrand, S. (2005). 'Verb clusters, verb raising, and restructuring.' In: M. Everaert & H. van Riemsdijk (eds), *The Blackwell Companion to Syntax*, Volume V, Article 75, 227-341. Oxford: Blackwell.
- Zuckerman, S. (2001). *The Acquisition of "Optional" Movement*. PhD dissertation, RU Groningen (Groningen: Grodil).

Thank You!

Caitlin Meyer

Sabine van Reijen

Fred Weerman

c.m.meyer@uva.nl

sabine.vanreijen@student.uva.nl

weerman@uva.nl



UNIVERSITY OF AMSTERDAM

Amsterdam Center for Language and Communication