

Production and comprehension of case marking after local two-case prepositions in German-speaking preschoolers



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Background



1) Das Küken läuft **in die** Box. (canonical)
'The chick walks **into** the-ACC box.'



Das Küken läuft **in der** Box. (canonical)
'The chick walks **inside** the-DAT box.'

2) Die Eule läuft **zu der** Kiste. (canonical)
'The owl walks to the-DAT box.'

Zu der Kiste läuft die Eule. (non-canonical)
'To the-DAT box walks the owl.'

- word order: canonical vs. non-canonical
- preposition: **one-case prepositions** (assign one single case) vs. **two-case prepositions** (can assign two cases)
- case: **accusative** vs. **dative**
- Acquisition of German case system is challenging for children [3, 4, 6]
- Processability Theory (PT): case alternation first emerges after one-case prepositions and then after two-case prepositions [1]
- Order of acquisition: accusative or dative first, one-case before two-case prepositions, comprehension preceding production [1, 2, 3, 4, 6]
- Marking dative case is posing children challenges up to school age [7]
- Non-canonical sentences are generally more difficult [5]

Research questions and predictions

- Does accusative precede dative?
 - Does marking case after one-case prepositions precede marking case after two-case prepositions?
 - Do canonical sentences precede non-canonical sentences?
 - Does comprehension precede production?
- Accusative** > **Dative**
 - One-case prepositions > Two-case prepositions
 - Canonical sentences > Non-canonical sentences
 - Comprehension > Production

Methods

Participants

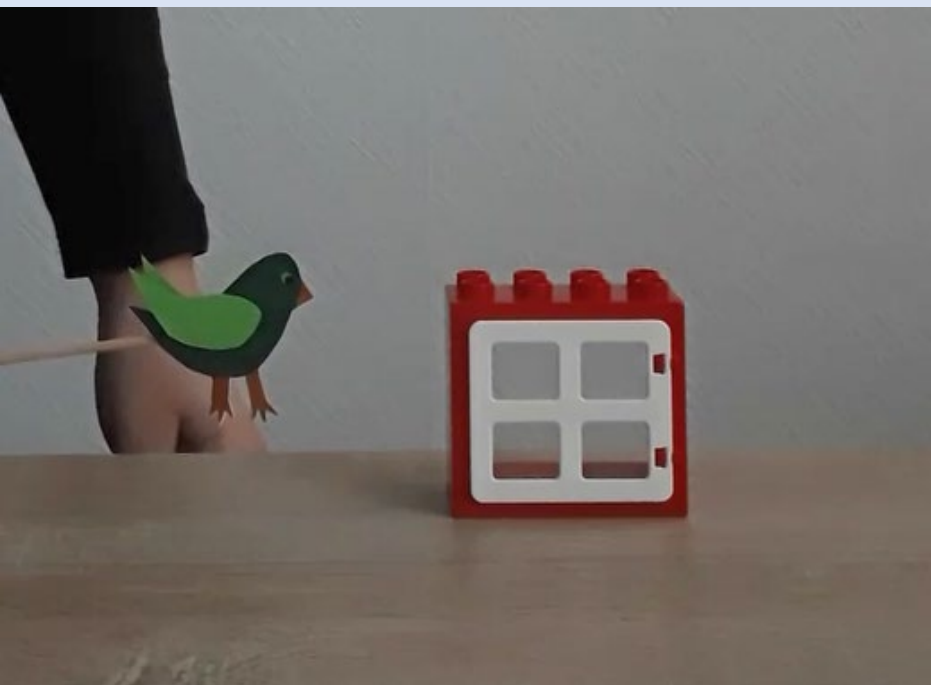
N	Female/Male	Mono-/bilingual	Mean age	Age range
83	34/49	53/30	5;7	4;7-6;5 years

Design

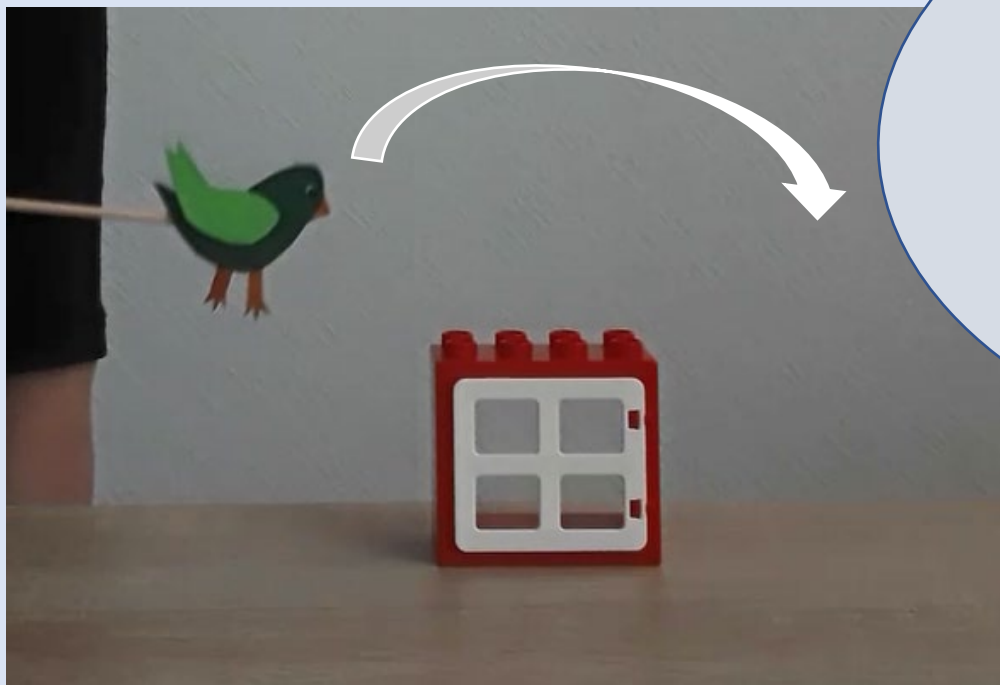
Word order	Preposition	Case	Test sentence example*
canonical	two-case	accusative	Der Vogel fliegt über das Fenster. 'The bird flies over the-ACC window.'
		dative	Der Vogel fliegt über dem Fenster. 'The bird flies above the-DAT window.'
	one-case	accusative	Der Vogel fliegt gegen die Box. 'The bird flies against the-ACC box.'
		dative	Der Vogel fliegt aus dem Käfig. 'The bird flies out of the-DAT cage.'

* The same sentences are used in reversed word order to get the equal amount of non-canonical sentences.

Tasks – Video examples



Preamble
Hier ist ein Vogel und hier ist ein Fenster. Schau, was der Vogel macht.
'Here is a bird and here is a window. Look what the bird does.'

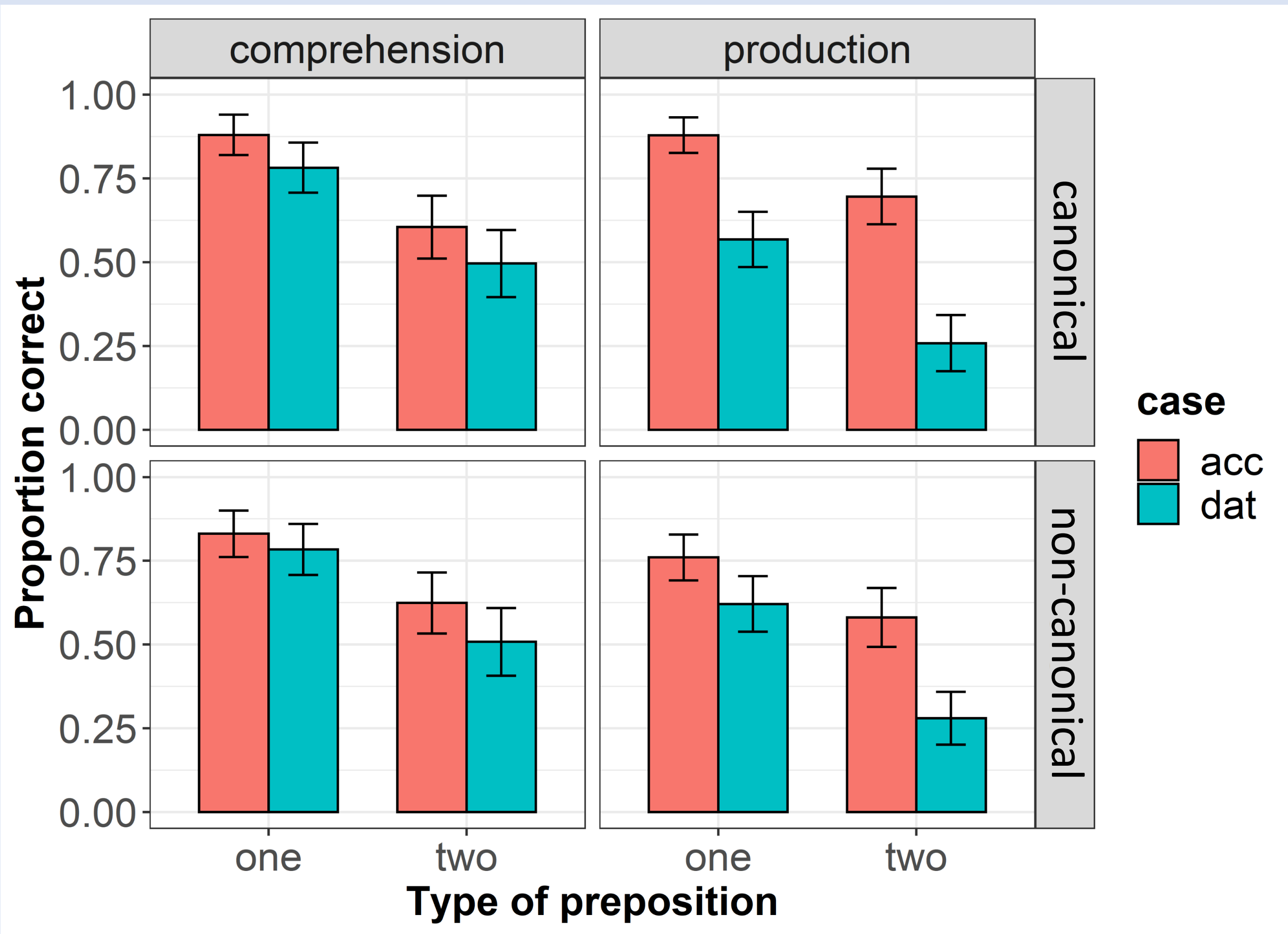


Test item
Der Vogel fliegt über **das** Fenster.
'The bird flies over the-ACC window.'

Scene verification task
Der Vogel fliegt über **dem** Fenster. Stimmt das?
'The bird flies above the-DAT window. Is this right?'
expected answer: no

Sentence completion task
Der Vogel fliegt über _____. Sprichst du für mich weiter?
'The bird flies over _____. Can you continue for me?'
expected answer: über **das** Fenster 'over the-ACC window'

Results



- accusative** is easier than **dative** ($p < 0.0001$)
- one-case prepositions are easier than two-case prepositions ($p < 0.0001$)
- comprehension is easier than production ($p < 0.05$)
- higher accuracy on accusative in canonical sentences (WORD ORDER by CASE interaction, $p < 0.01$)

GLMM

accuracy ~ case * pp * word_order * modality + (1 + case | subject_id) + (1 + case | item)

Discussion

- The acquisition of the German case system is a long-lasting process that is not completed by school entry, particularly dative case and marking case after two-case prepositions in production seem to be more challenging.
- Prepositional adjuncts, as tested in this study, are optional: their position in the sentence does not effect on how children interpret a sentence.
- Our results are in line with the predictions of PT that case alternation first emerges after one-case prepositions and then after two-case prepositions.
- Further analyses will investigate the role of age, gender, language input and the impact of a multilingual background.

References

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