

WORD ORDER AND CASE MARKING IN EARLY COMPREHENSION



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MINISTRY OF EDUCATION,
YOUTH AND SPORTS

Who is doing what to whom?

transitive sentence = subject + active verb + direct object

- challenge for children: decoding subject-object relationships
- cues: word order, case marking, prosody, subject-predicate agreement, etc.
- research mostly based on English → less applicable to other languages

Previous experiment

The mouse is pulling the hedgehog. Or the other way around?

Role of Case Marking and Word Order in Interpreting Subject and Object in Czech and German Four-Year-Olds

- 30 Czech children, 43–65 months (mean 51.4)
- 30 German children, 41–69 months (mean 51.5)
- both languages: a preference for the canonical word order (SVO) over the non-canonical one (OVS)
- case marking in Czech achieved by endings, German noun phrases primarily inflected using articles
- both languages: ambiguous forms of subject and object

Design

- two tasks: eye-tracking and pointing
- word order contrast: SVO vs. OVS
- case marking contrast: ambiguous vs. unambiguous nouns (kuř**e**–kuř**e** x žáb**a**–žáb**u**)
- 32 randomized trials per child

Stimuli



SVO			
OVS			

Stimuli



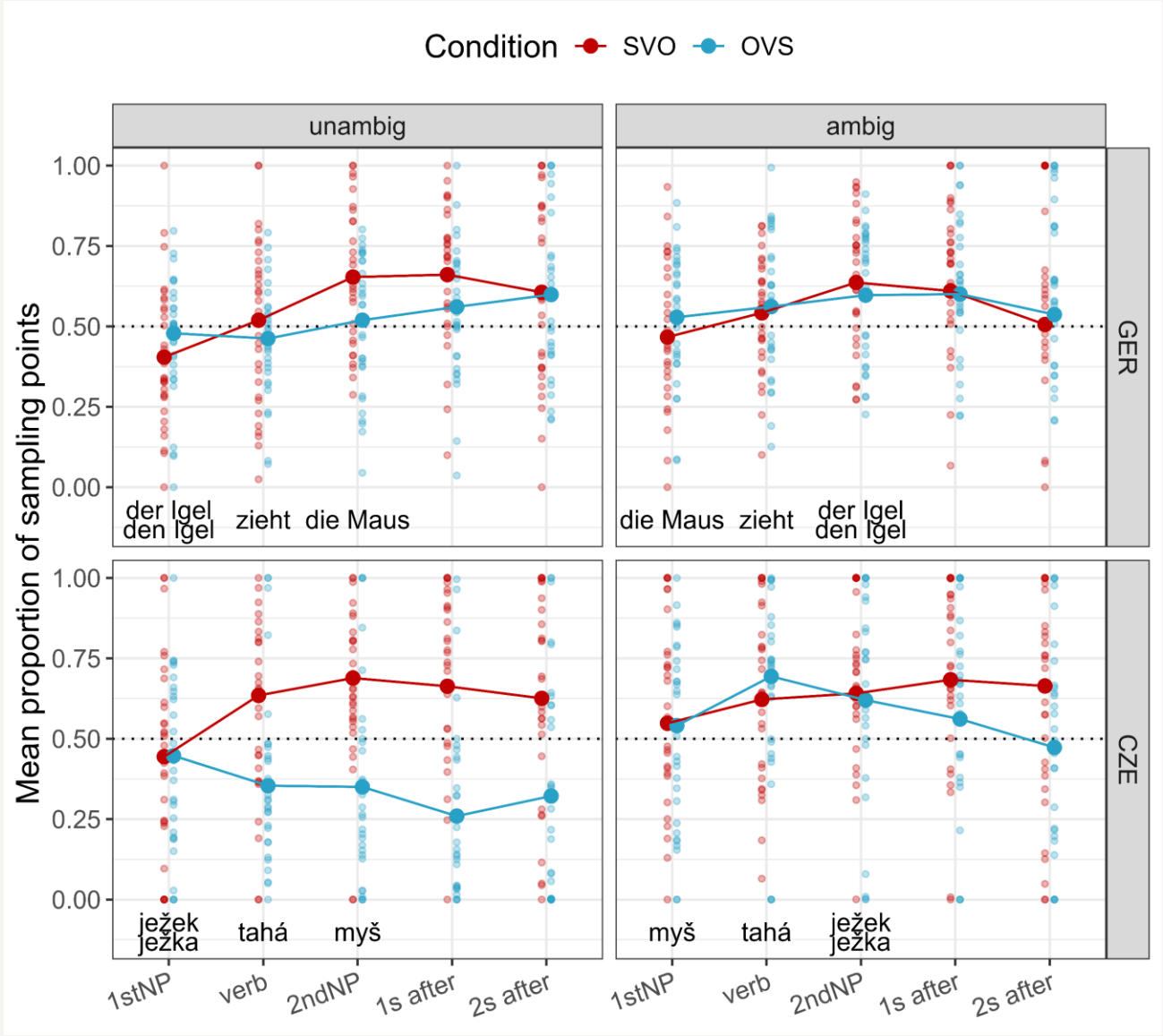
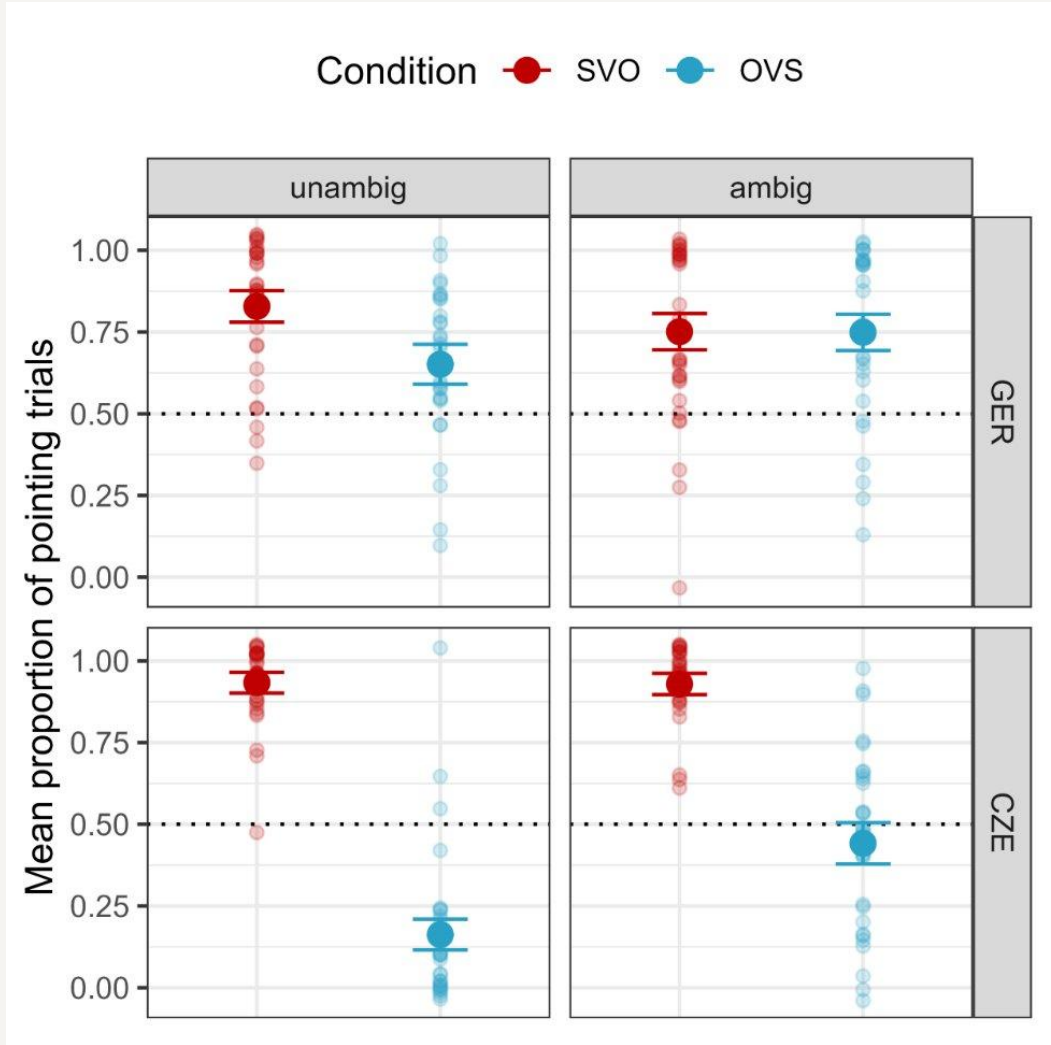
SVO	CZE	Kuře krmí žábu.	Žába krmí kuře.
	GER	Das Küken füttert den Frosch.	Der Frosch füttert das Küken.
OVS			
	ENG	The chicken is feeding the frog.	
		The frog is feeding the chicken.	

Stimuli



SVO	CZE	Kuře krmí žábu.	Žába krmí kuře.
	GER	Das Küken füttert den Frosch.	Der Frosch füttert das Küken.
OVS	CZE	Žábu krmí kuře.	Kuře krmí žába.
	GER	Den Frosch füttert das Küken.	Das Küken füttert der Frosch.
ENG		<i>The chicken is feeding the frog.</i>	<i>The frog is feeding the chicken.</i>

Results



Results

unambiguous sentence

- both CZE and GER children distinguish between SVO and OVS

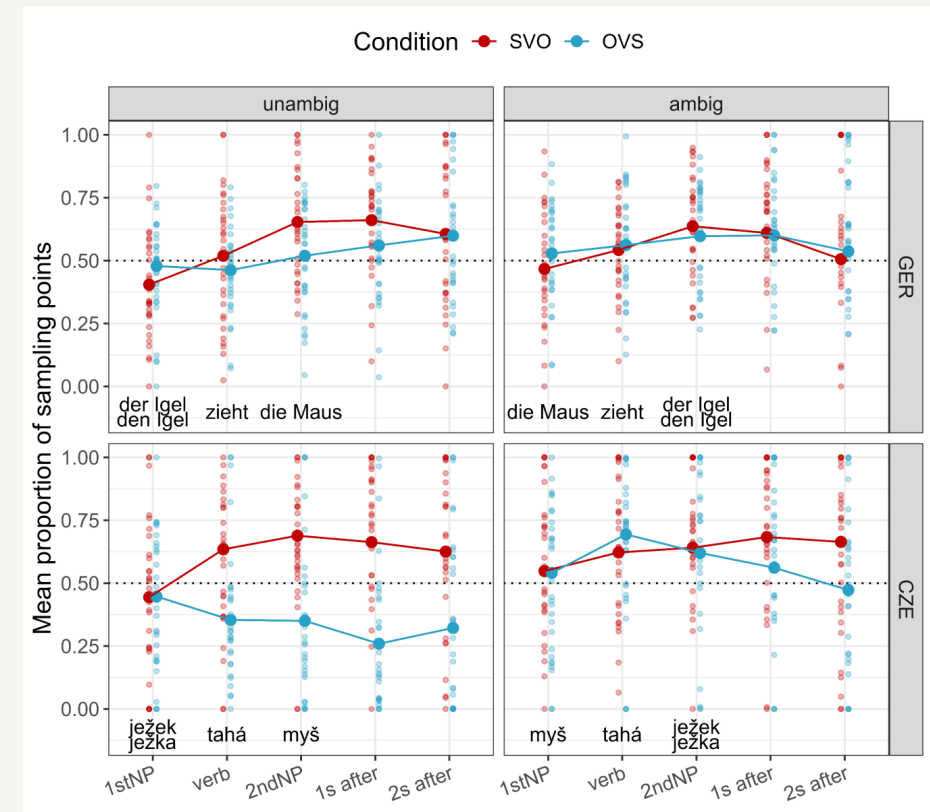
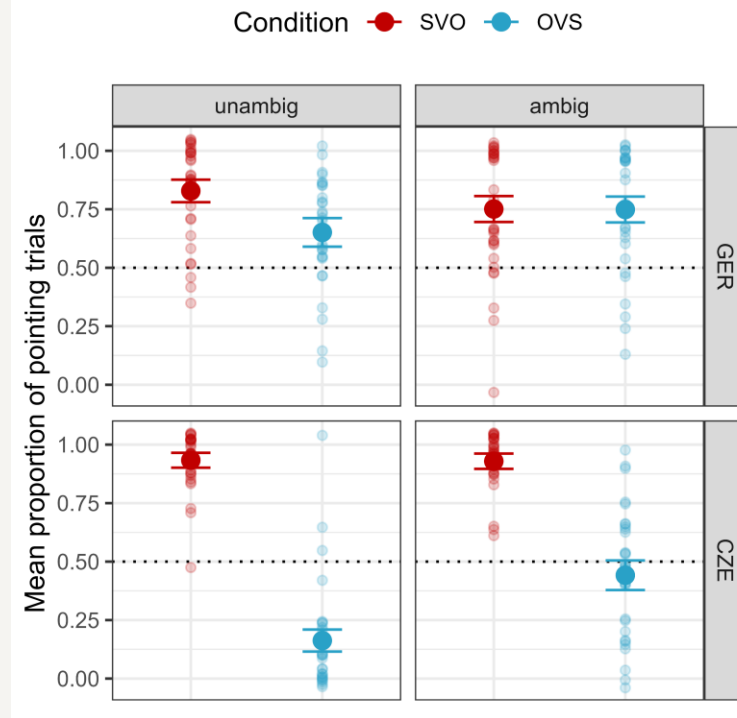
but CZE four-year-olds apply the case cues correctly X GER four-year-olds don't

ambiguous sentence

- both: initial preference for subject-first strategy

but CZE: re-analysis after the disambiguation X GER: no re-analysis

→ GER acquisition of **OVS** is delayed, compared to CZE



The same with novel verbs

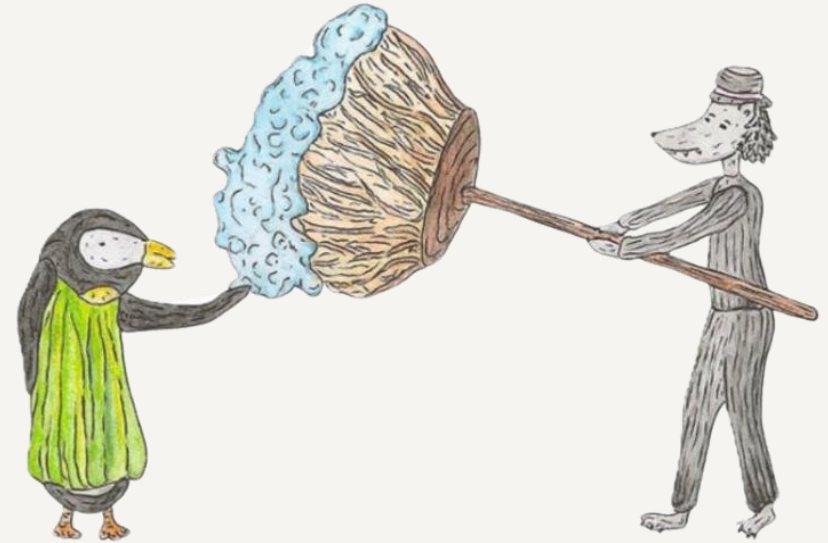
- children learning different languages respond differently to word order depending on available cues
- using FAMILIAR VERBS may lead children to rely on verb-specific patterns rather than general grammatical rules
- studies used NOVEL VERBS to test whether children rely on syntactic or morphological cues (e.g., Akhtar, 1999; Dittmar et al., 2008; Chan et al., 2010)
- starting point for our current study: Czech children may rely less on lexical knowledge

Current experiment

- Czech children, 30–60 months
- eye-tracking, pointing
- novel verbs (unfamiliar transitive actions)
- unambiguous nouns (well-known characters), SVO x OVS



Design



SVO

Tučňák **tebá** vlka.

Vlk **tebá** tučňáka.

OVS

Vlka **tebá** tučňák.

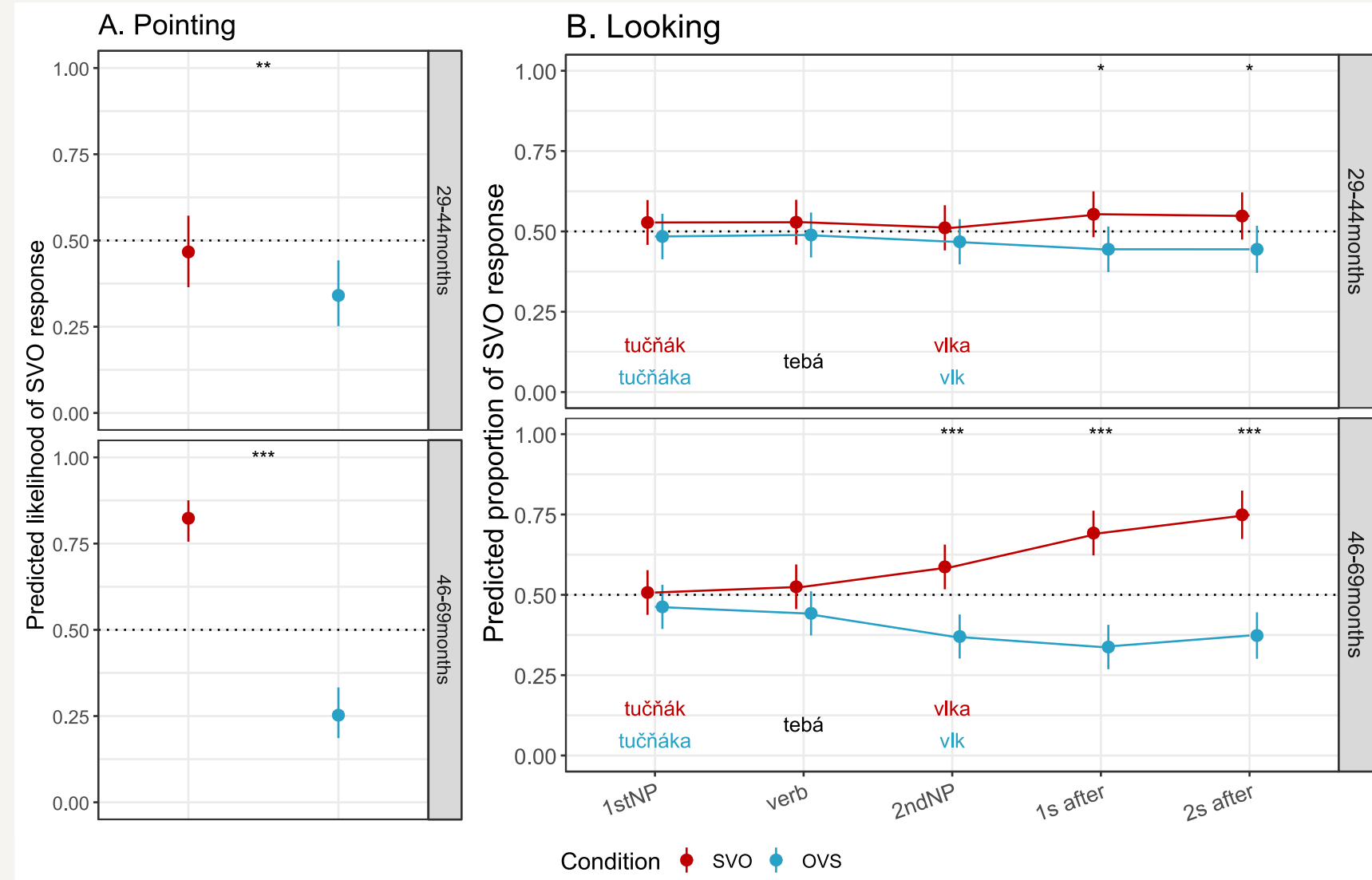
Tučňáka **tebá** vlk.

translation The penguin tebs the wolf.

The wolf tebs the penguin.

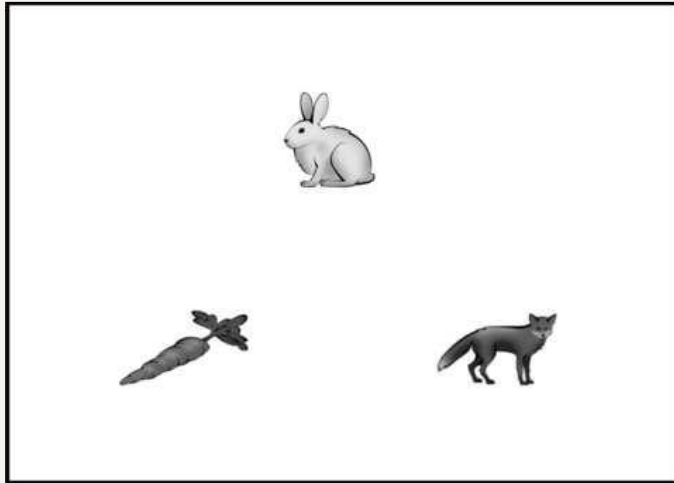
Pre-analysis

- data from 35 Czech children, 29–69 months
- younger and older group
- around age 4: emerging ability to integrate word order and case without verb support
- data collection ongoing



Next plans

1. prediction of the upcoming noun (Özge et al. 2019)



Králík brzy sežere ...
The rabbit.**NOM** will soon eat ...

Králíka brzy sežere ...
*The rabbit.**ACC** will soon eat ...

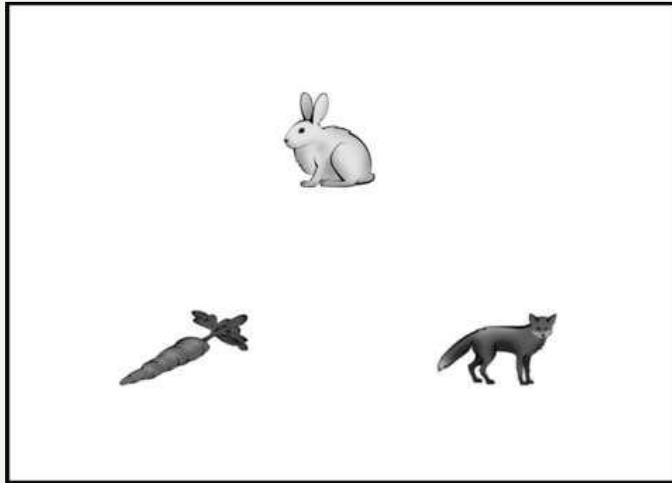
Holčička brzy olizne ...
The girl.**NOM** will soon lick ...

Holčičku brzy olizne ...
The girl.**ACC** will soon lick ...

Kočka brzy chytí ...
The cat.**NOM** will soon catch ...

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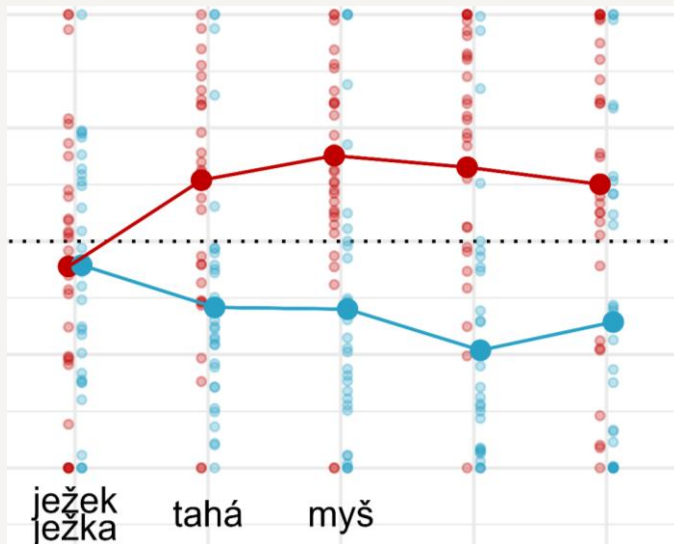
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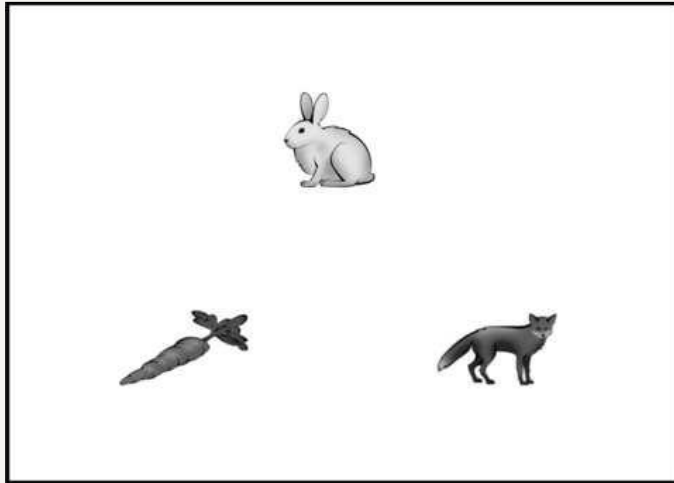
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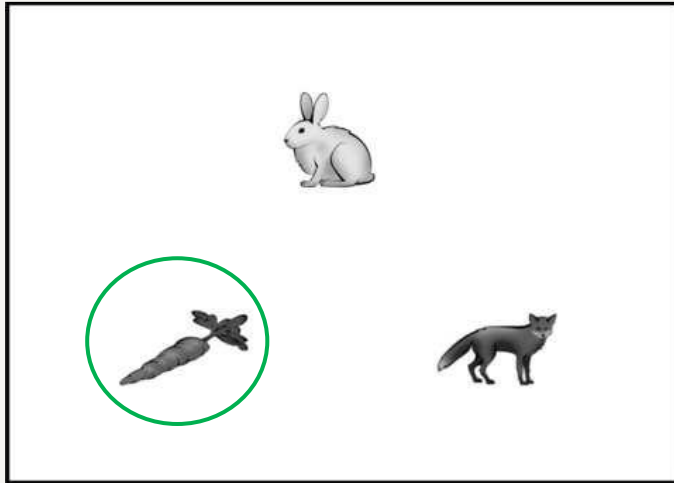
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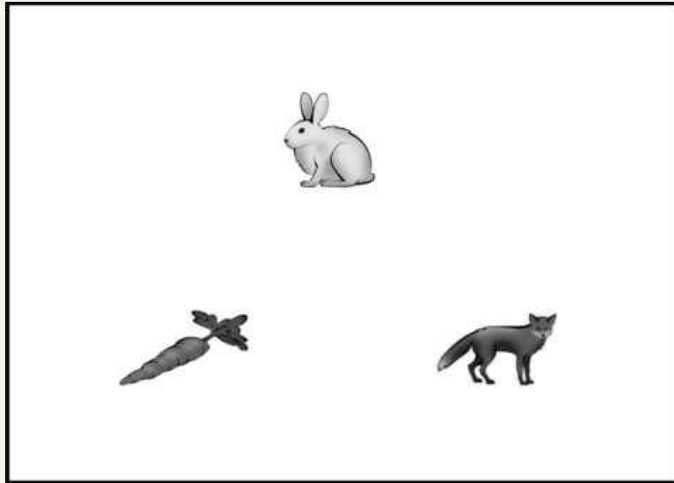
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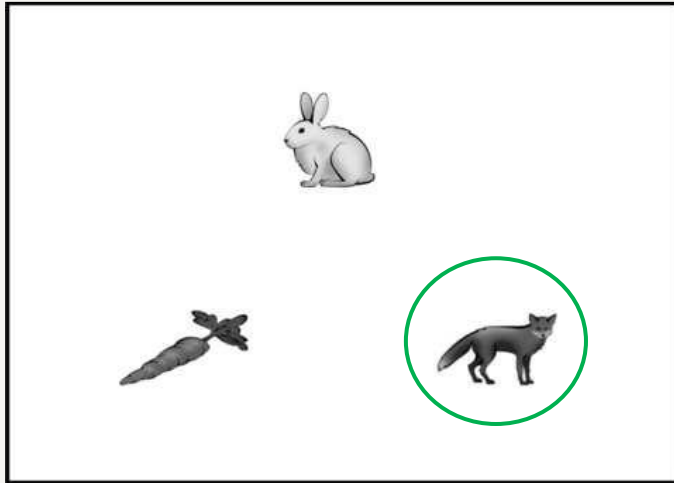
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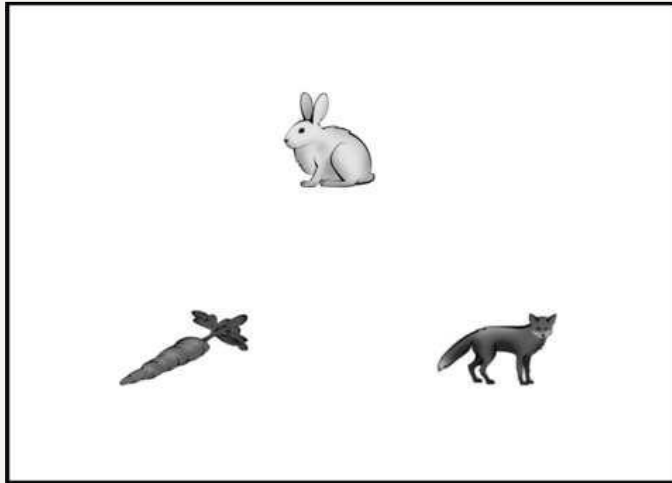
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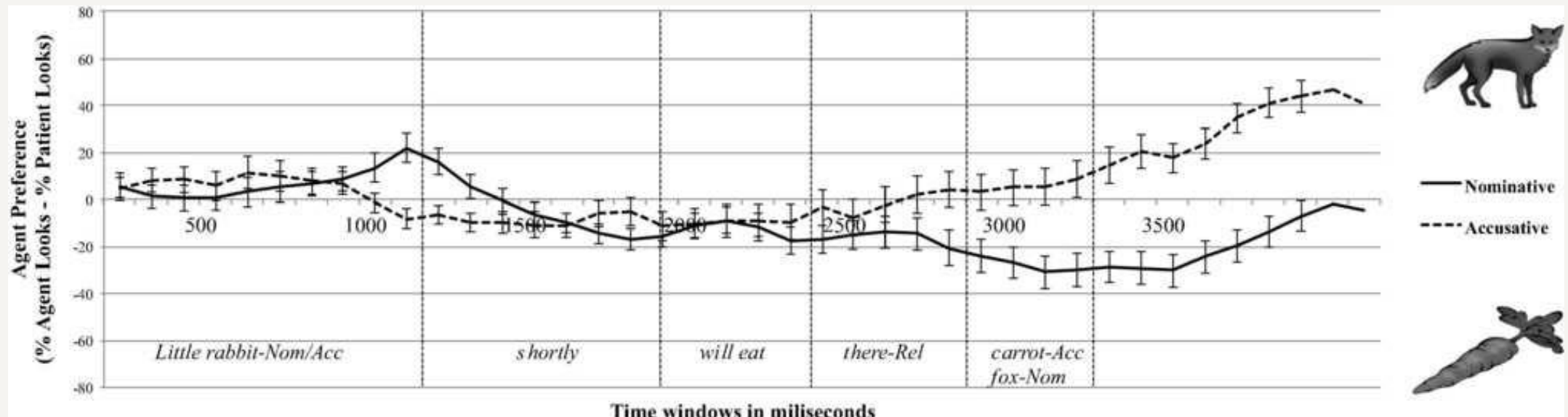
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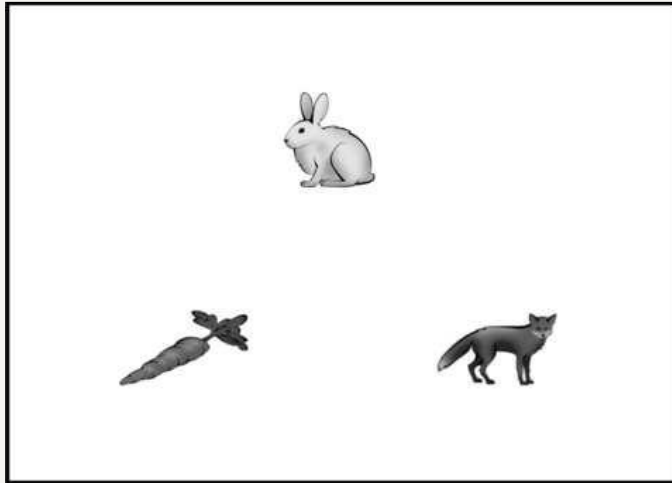
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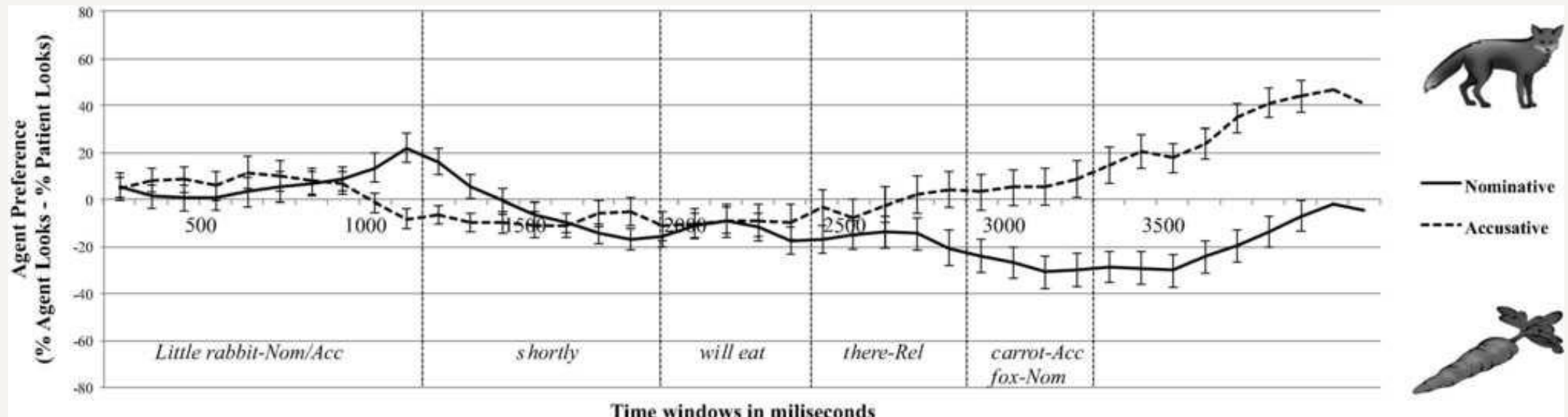
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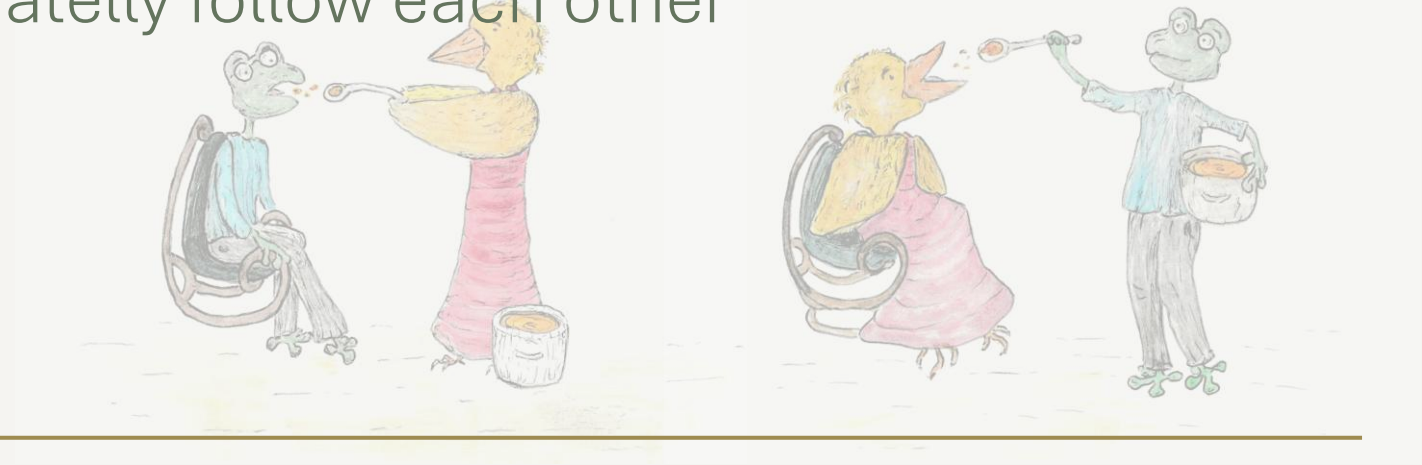


2. back to the first setting with different stimuli



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Different orders: S and O immediately follow each other

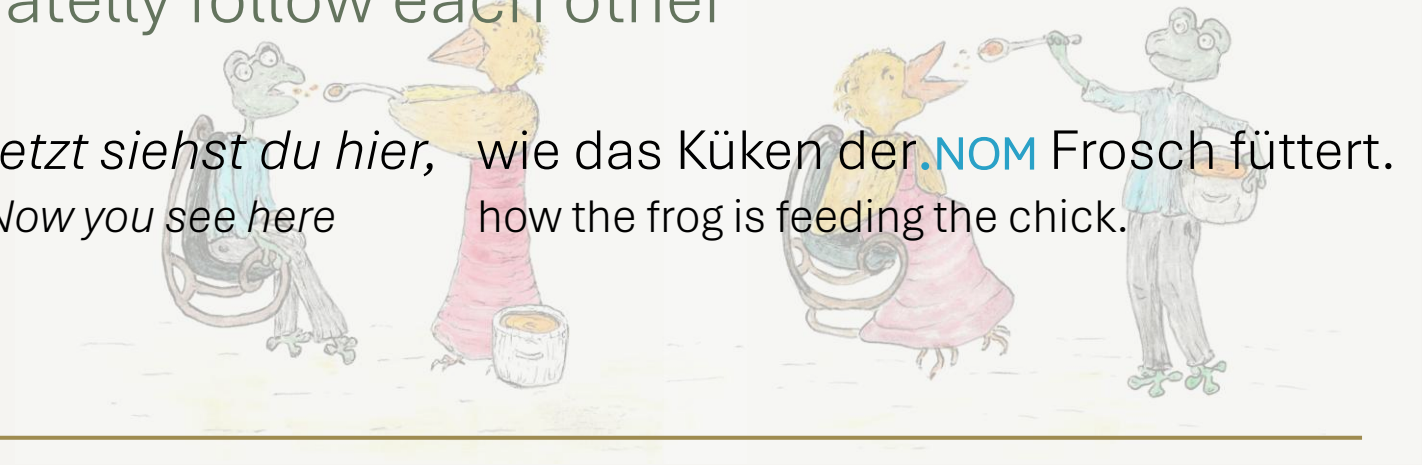


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e.g. verb-final dependent clause:

GER: *Jetzt siehst du hier, wie das Küken der .NOM Frosch füttert.*
Now you see here how the frog is feeding the chick.

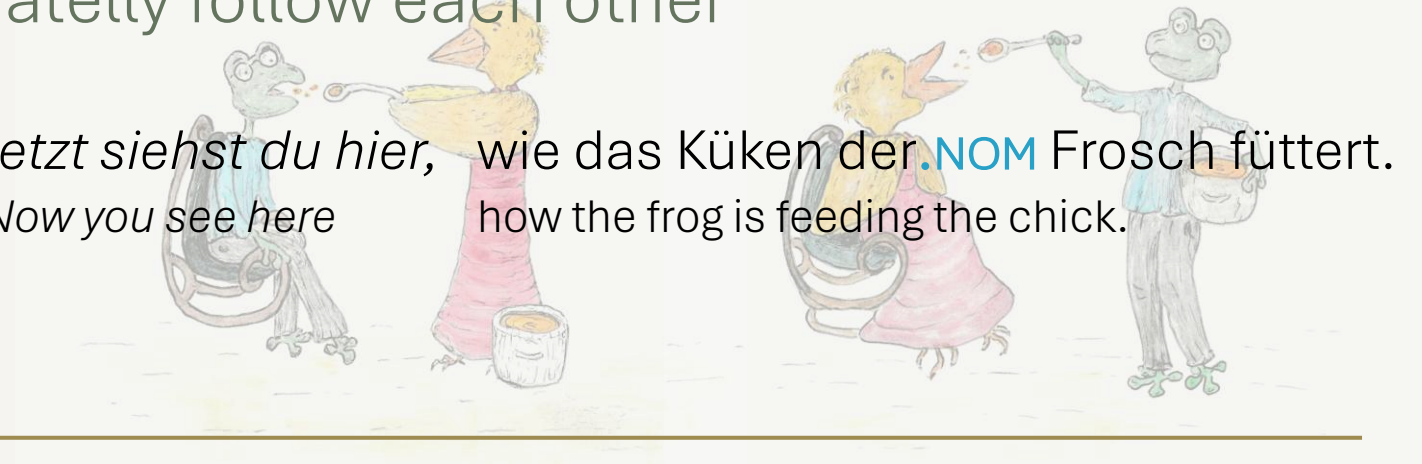


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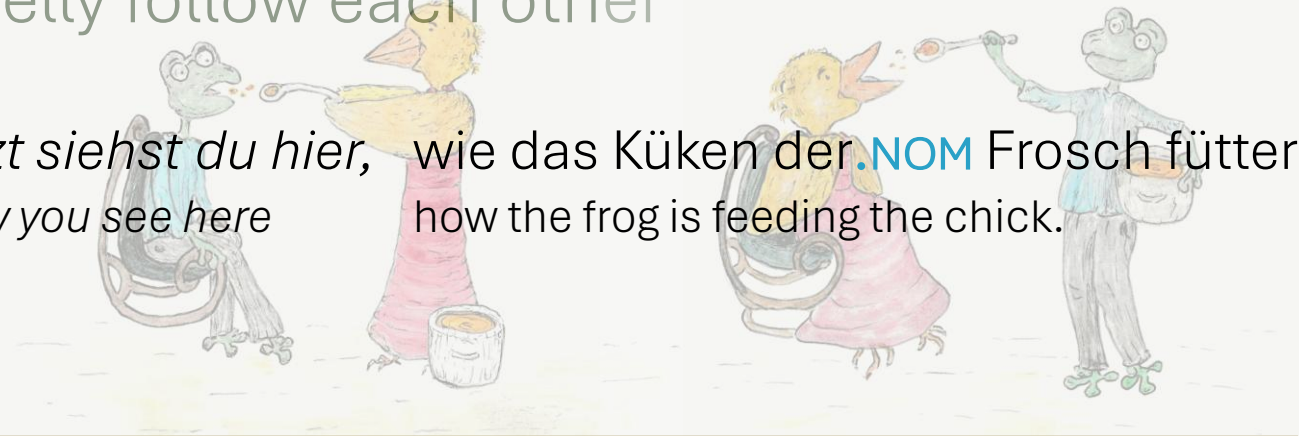
Different nouns, different cases

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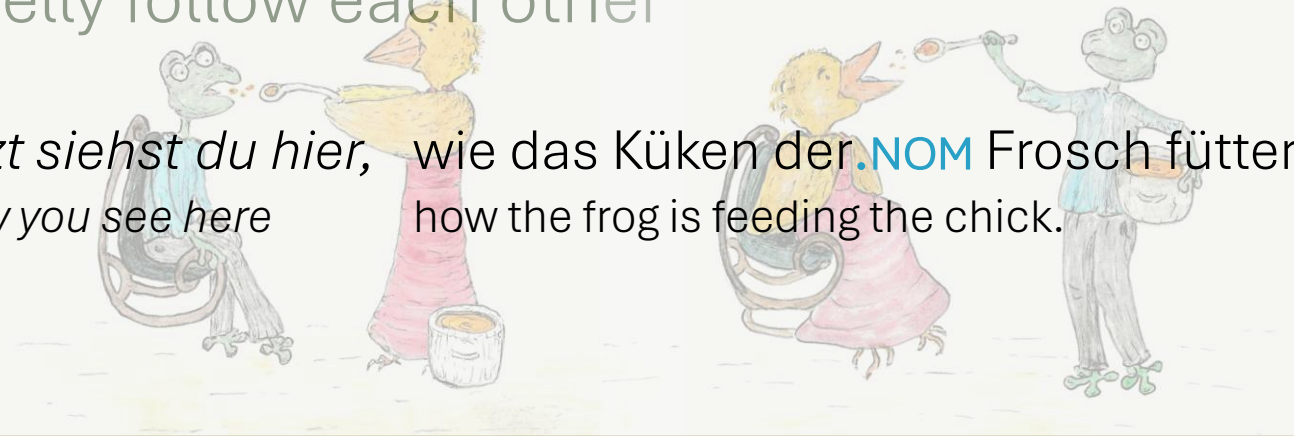
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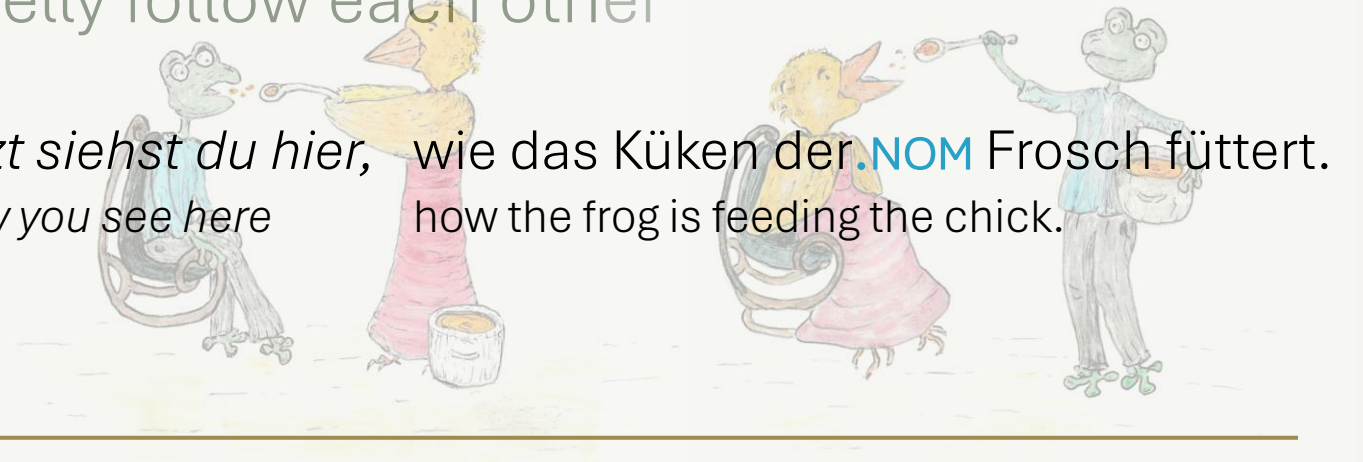
- full ambiguity: Kuře krmí štěně.
- dative objects: DAT|NOM: Kočka.**NOM** tady mává žábě.**DAT**. Kočce.**DAT** tady mává žába.**NOM**.
The cat is waving at the frog here. The frog is waving at the cat here.

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e.g. verb-final dependent clause:

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Different nouns, different cases

- full ambiguity: Kuře krmí štěně.
- dative objects:

DAT NOM:	Kočka. NOM tady mává žábě. DAT . The cat is waving at the frog here.	Kočce. DAT tady mává žába. NOM . The frog is waving at the cat here.
DAT ACC:	Kočce. DAT tady mává žába. The frog is waving at the cat here.	Kočku. ACC tady hladí žába. The frog is petting the cat here.

3. control for German specifics

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Different nouns

- German noun suffixes:

Den.**.ACC** Affe**n.ACC** kämmt die Maus.
The mouse is combing the monkey.

Den.**.ACC** Hasen.**.ACC** schiebt das Küken.
The chick is pushing the rabbit.

Den.**.ACC** Elefanten.**.ACC** verfolgt das Hündchen.
The doggy is chasing the elephant.

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Same nouns

- German indefinite articles:

Einen.**.ACC** Frosch füttert ein Küken.
A chick is feeding a frog.



Thank you for your attention!

References

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- Tomasello, M. (1992). *First verbs: a case study of early grammatical development*. Cambridge: Cambridge University Press.

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Different orders: S and O immediately follow each other

- verb-final dependent clause: GER: *Jetzt siehst du hier, wie das Küken der.NOM Frosch füttert.*
Now you see here how the frog is feeding the chick.
- verb-initial dependent clause: CZE: *Ted' tady vidíš, jak krmí kuře žába.NOM.*
- verb-initial question: GER: *Füttert das Küken der.NOM Frosch?*
Is the frog feeding the chick?
CZE: *Krmí kuře žába.NOM?*

