THE CURIOUSLY LONG JOURNEY OF THE GERMAN CASE MARKING

Anna Chromá
Institute of Psychology, Czech Academy of Sciences

June 30th, 2025
at Eberhard Karls Universität Tübingen

Co-funded by the European Union

MINISTRY OF EDUCATION, YOUTH AND SPORTS

MY COAUTHORS

Jolana
Treichelová

Filip
Smolík

Claudia
Friedrich

Source: ChatGPT

Pictures © Marie Hedvíková

TRANSITIVE CONSTRUCTION

WHO	IS DOING WHAT	TO WHOM
SUBJECT	ACTIVE VERB	OBJECT
AGENT		PATIENT

SEMANTIC CUES

Source: ChatGPT

Pictures © Marie Hedvíková

TRANSITIVE CONSTRUCTION

WHO	IS DOING WHAT	TO WHOM
SUBJECT AGENT	ACTIVE VERB	OBJECT PATIENT

SEMANTIC CUES

Source: ChatGPT

GRAMMATICAL CUES

Pictures © Marie Hedvíková

TRANSITIVE CONSTRUCTION

WHO	IS DOING WHAT	TO WHOM
SUBJECT AGENT	ACTIVE VERB	OBJECT PATIENT

THE MOUSE IS PULLING THE HEDGEHOG

AGENT FIRST

THE MOUSE IS PULLING THE HEDGEHOG

Pictures © Marie Hedvíková

SVO AGENT FIRST

THE MOUSE IS PULLING THE HEDGEHOG

Pictures © Marie Hedvíková

SVO AGENT FIRST THE MOUSE IS PULLING THE HEDGEHOG

SVO AGENT FIRST DIE MAUS ZIEHT DEN IGEL

Pictures © Marie Hedvíková

SVO AGENT FIRST — THE MOUSE IS PULLING THE HEDGEHOG

SVO AGENT FIRST — DIE MAUS ZIEHT DEN IGEL

OVS PATIENT FIRST — DEN IGEL ZIEHT DIE MAUS

Pictures © Marie Hedvíková

SVO AGENT FIRST — THE MOUSE IS PULLING THE HEDGEHOG

SVO AGENT FIRST	DIE MAUS ZIEHT DEN IGEL	MYŠ TÁHNE JEŽKA
OVS PATIENT FIRST	DEN IGEL ZIEHT DIE MAUS	JEŽKA TÁHNE MYŠ

Grammatical cues

SVO AGENT FIRST — THE MOUSE IS PULLING THE HEDGEHOG — Word order

SVO AGENT FIRST — DIE MAUS ZIEHT DEN IGEL

OVS PATIENT FIRST — DEN IGEL ZIEHT DIE MAUS

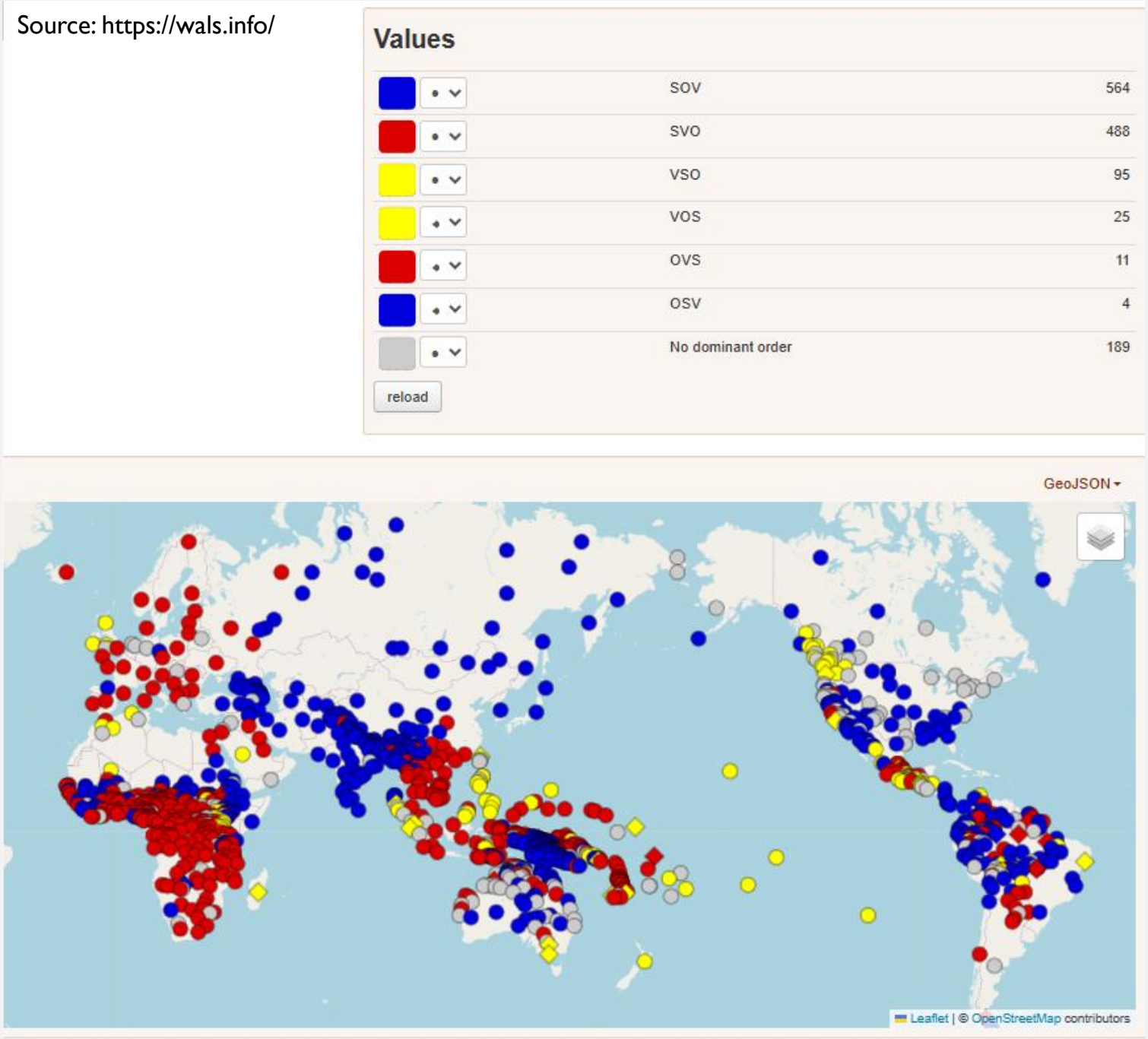
MYŠ TÁHNE JEŽKA

Morphology

JEŽKA TÁHNE MYŠ

LANGUAGES WORLDWIDE

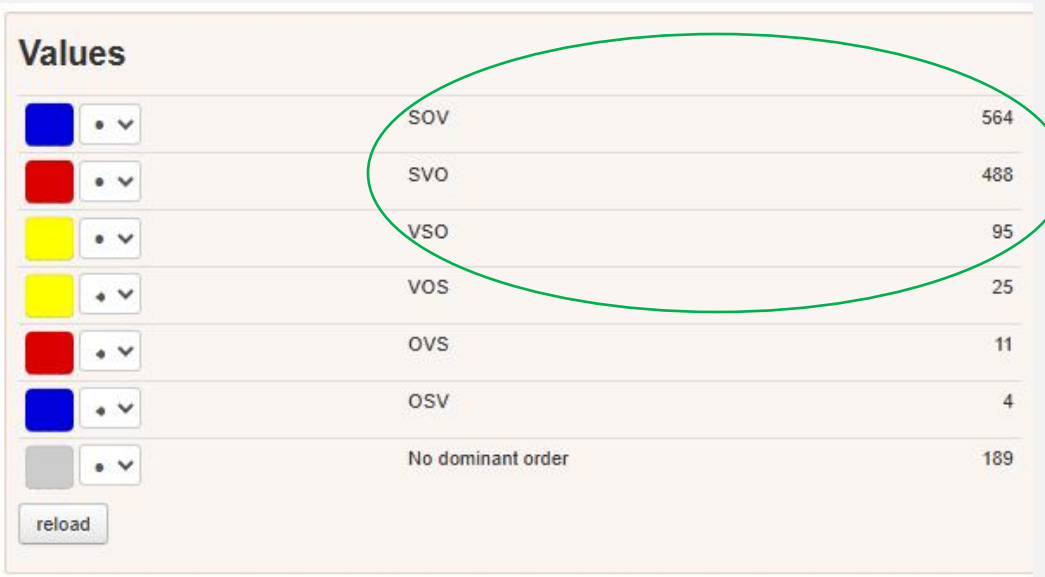
Source: https://wals.info/

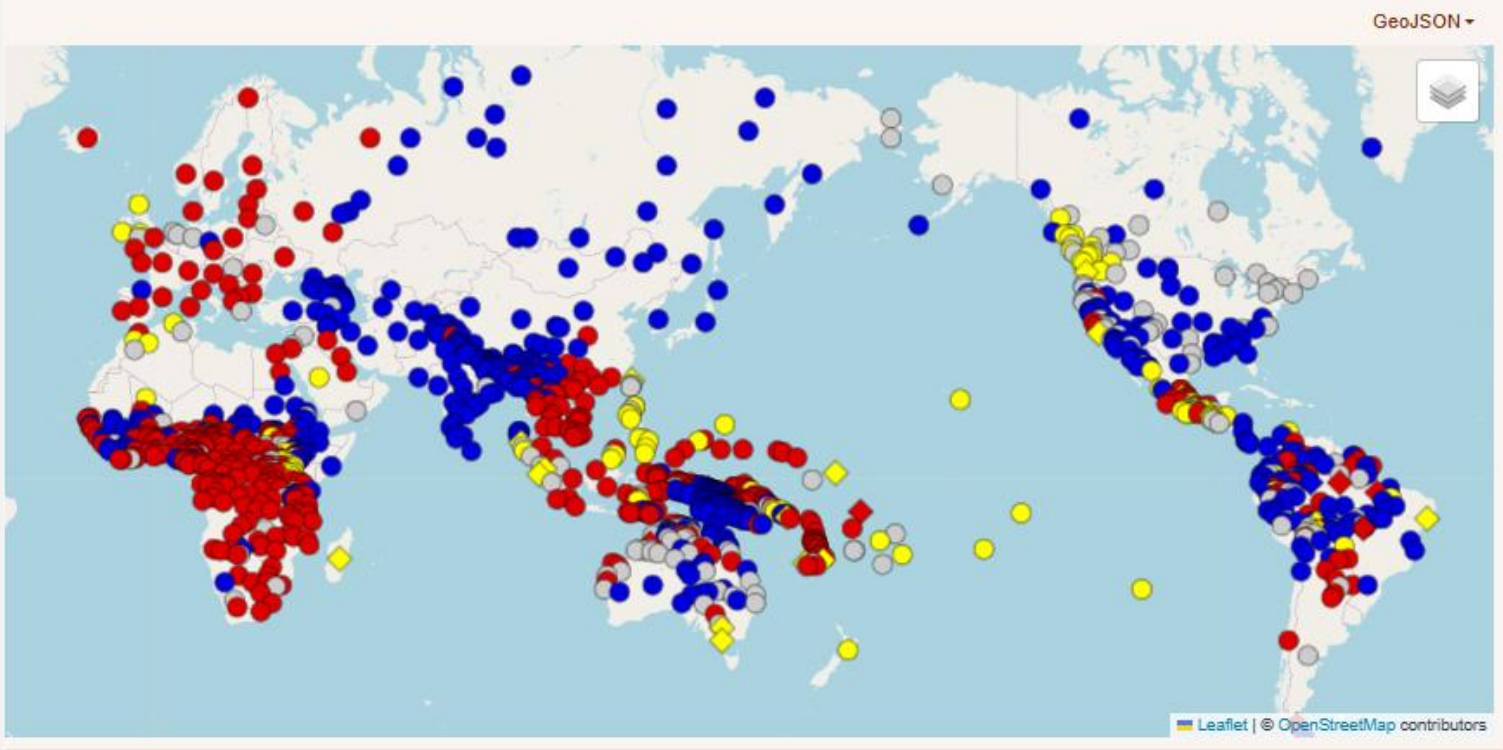


LANGUAGES WORLDWIDE

- agent/subject-first preference

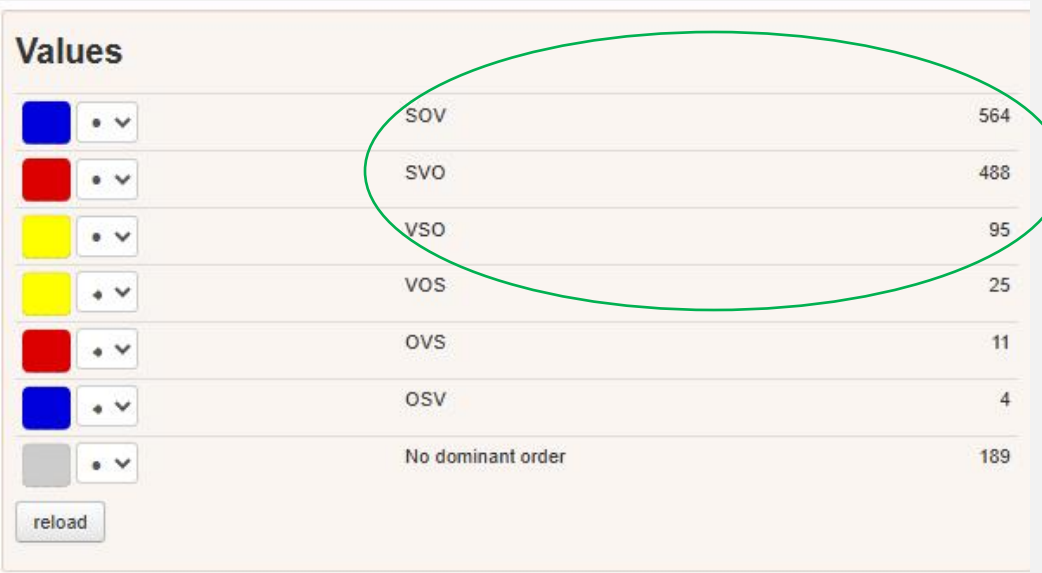
Source: https://wals.info/

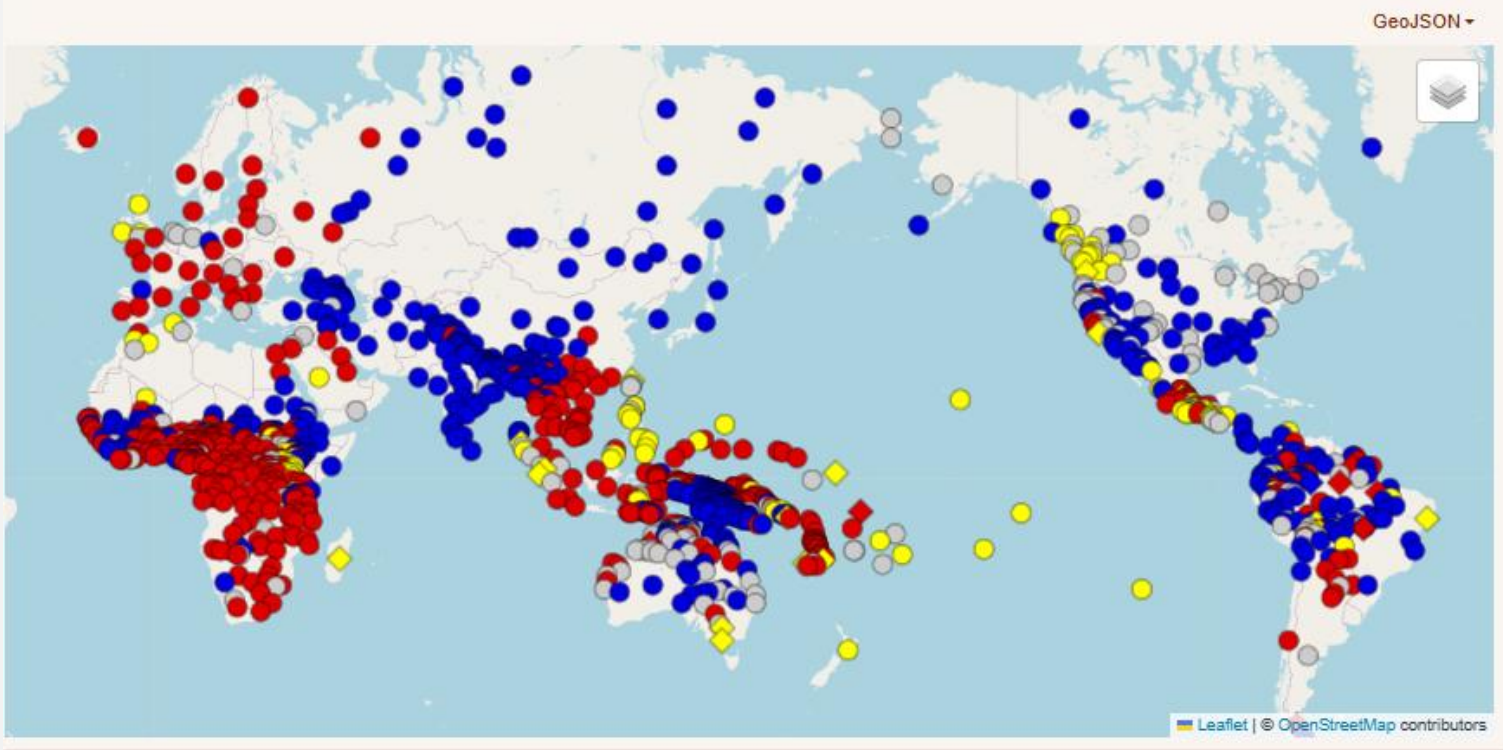




LANGUAGES WORLDWIDE

Source: https://wals.info/

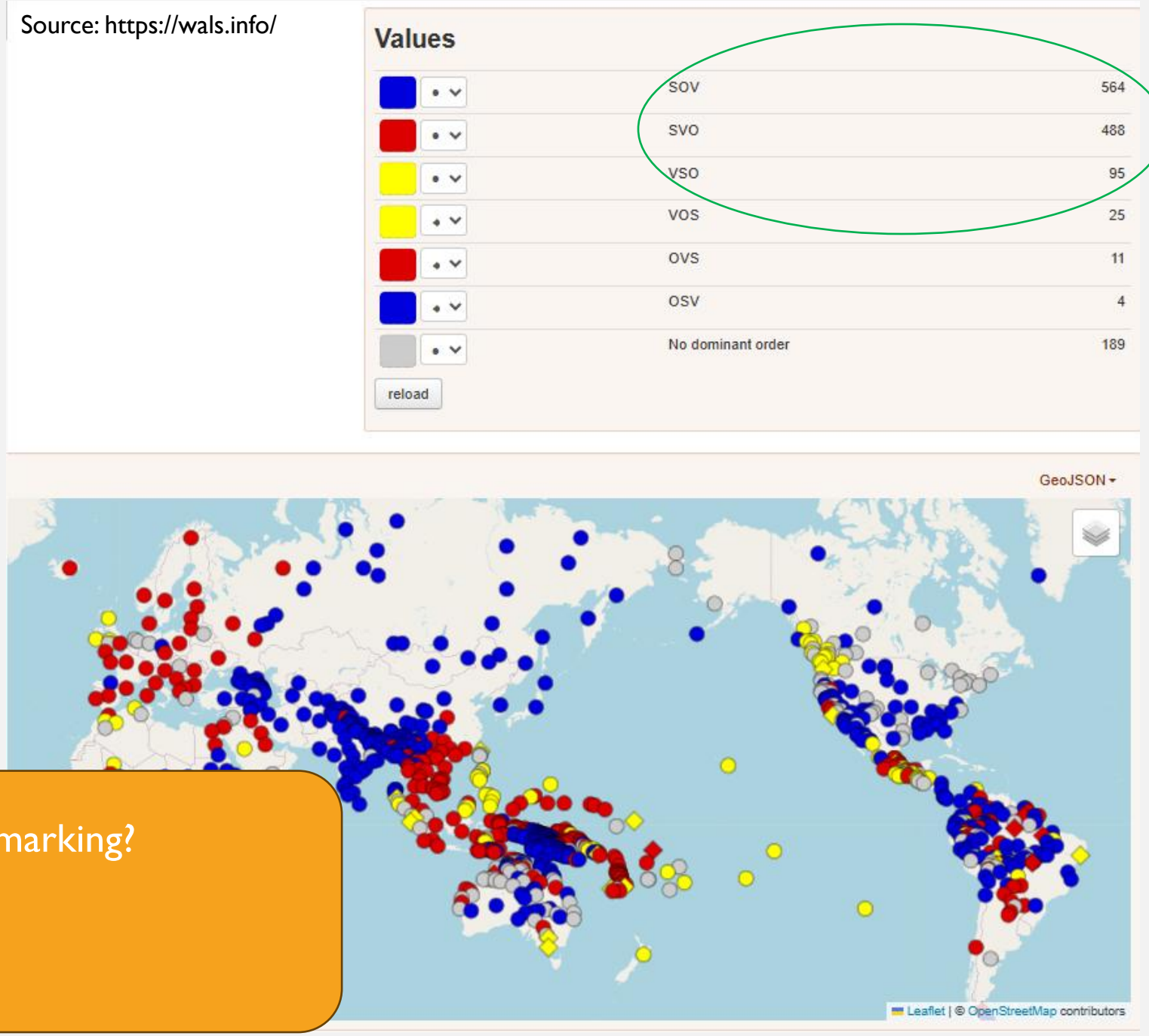




- agent/subject-first preference
- with flexible word order:
  - disagreement of cues in **O(V)S**

LANGUAGES WORLDWIDE

Source: https://wals.info/

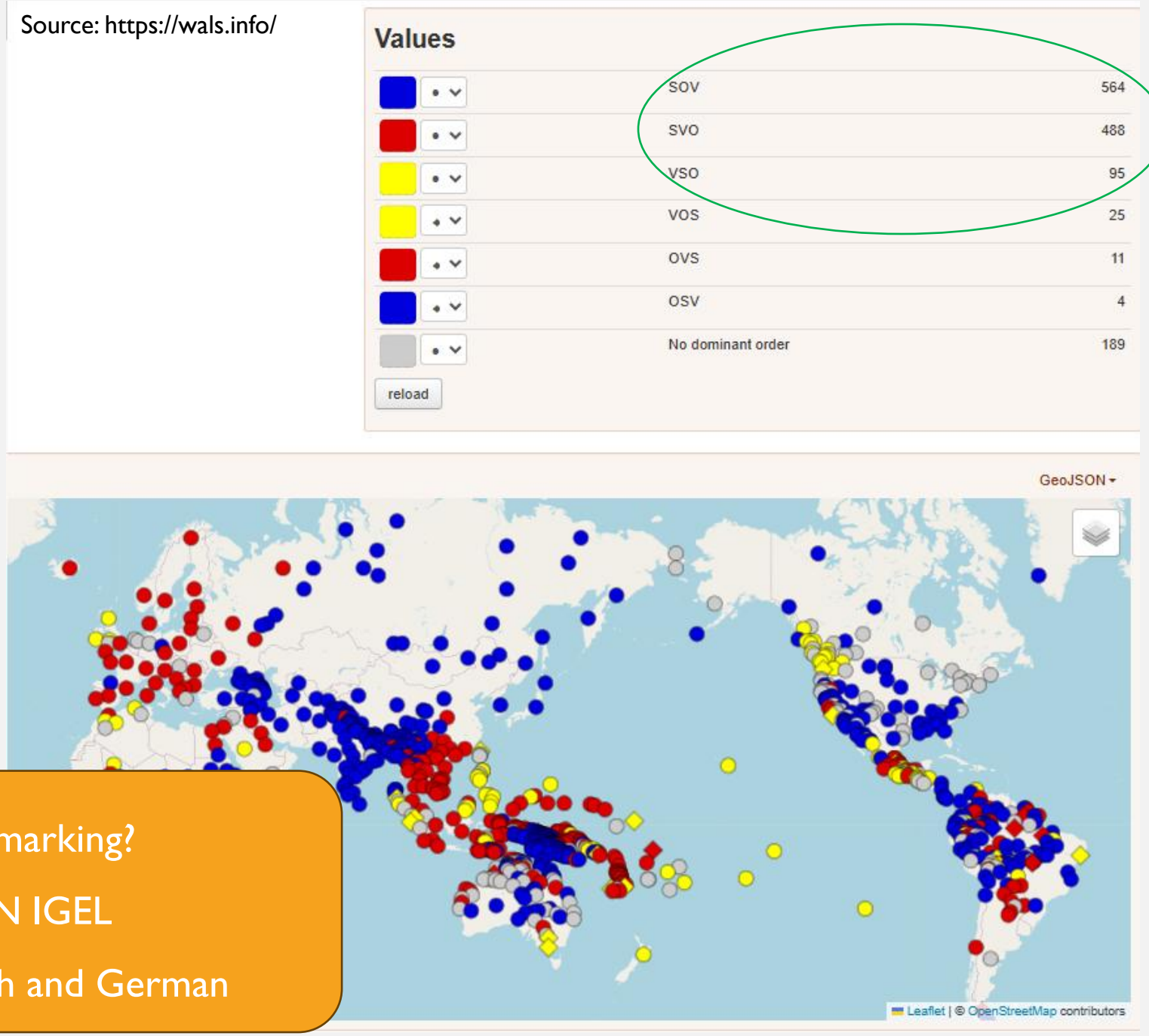


- agent/subject-first preference
- with flexible word order:
  - disagreement of cues in **O(V)S**

Availability of morphological marking?

LANGUAGES WORLDWIDE

Source: https://wals.info/



- agent/subject-first preference
- with flexible word order:
  - disagreement of cues in **O(V)S**

Availability of morphological marking?

DIE MAUS ZIEHT DER/DEN IGEL

→ NOM-ACC ambiguities in Czech and German

OVS COMPREHENSION
PERFORMANCE

den Igel zieht die Maus

GERMAN ACQUISITION

Dittmar et al. 2008
Grünloh et al. 2011
Kröger et al. 2017
Özge et al. 2022
Schipke et al. 2012

OVS COMPREHENSION
PERFORMANCE

den Igel zieht die Maus

GERMAN ACQUISITION

Dittmar et al. 2008
Grünloh et al. 2011
Kröger et al. 2017
Özge et al. 2022
Schipke et al. 2012
Smolík 2015

CZECH ACQUISITION

OVS COMPREHENSION
PERFORMANCE

den Igel zieht die Maus
ježka táhne myš

GERMAN ACQUISITION

Dittmar et al. 2008
Grünloh et al. 2011
Kröger et al. 2017
Özge et al. 2022
Schipke et al. 2012
Smolík 2015

CZECH ACQUISITION

OVS COMPREHENSION PERFORMANCE

3-year-olds

4- or 5-year-olds

6- or 7-year-olds

AT-CHANCE

ABOVE-CHANCE AGENT-FIRST

ABOVE-CHANCE CORRECT

3- or 4-year-olds with low lexicon

3- or 4-year-olds with high lexicon

GERMAN ACQUISITION

Dittmar et al. 2008
Grünloh et al. 2011
Kröger et al. 2017
Özge et al. 2022
Schipke et al. 2012
Smolík 2015

CZECH ACQUISITION

OVS COMPREHENSION PERFORMANCE

3-year-olds

1

AT-CHANCE

1

3- or 4-year-olds with low lexicon

4- or 5-year-olds

ABOVE-CHANCE AGENT-FIRST

3- or 4-year-olds with high lexicon

6- or 7-year-olds

ABOVE-CHANCE CORRECT

GERMAN ACQUISITION

Dittmar et al. 2008
Grünloh et al. 2011
Kröger et al. 2017
Özge et al. 2022
Schipke et al. 2012
Smolík 2015

CZECH ACQUISITION

OVS COMPREHENSION PERFORMANCE

3-year-olds

1

AT-CHANCE

1

3- or 4-year-olds with low lexicon

4- or 5-year-olds

ABOVE-CHANCE AGENT-FIRST

6- or 7-year-olds

ABOVE-CHANCE CORRECT

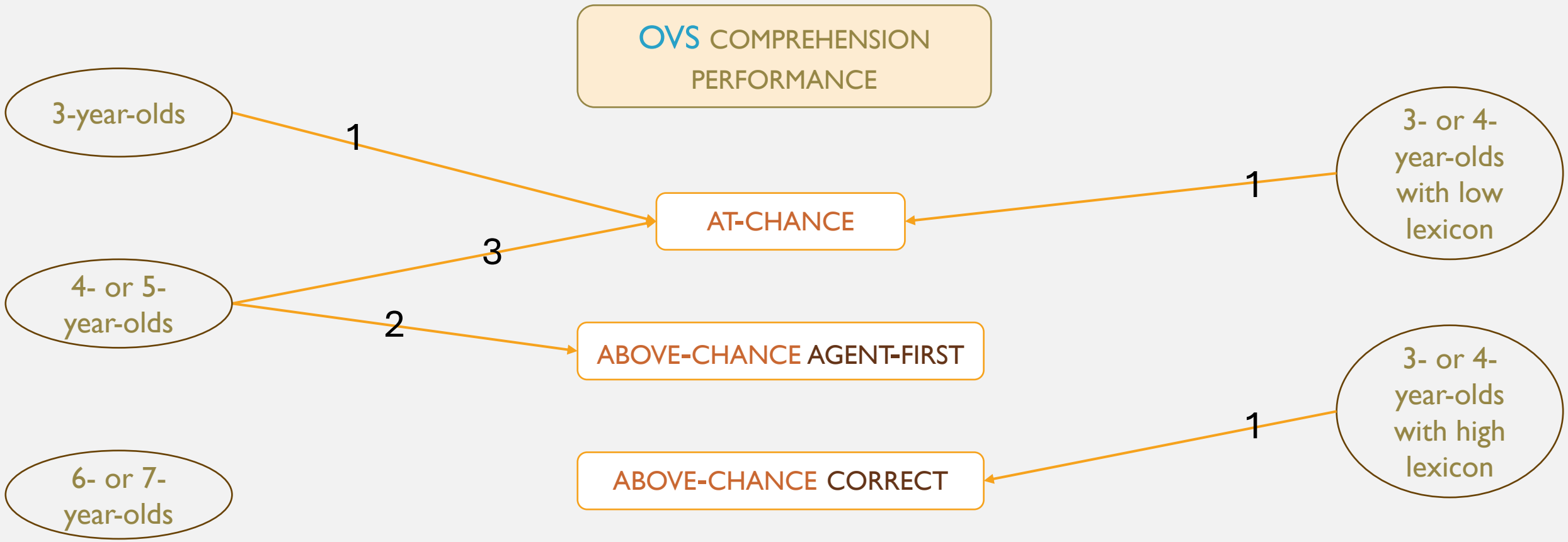
1

3- or 4-year-olds with high lexicon

GERMAN ACQUISITION

Dittmar et al. 2008
Grünloh et al. 2011
Kröger et al. 2017
Özge et al. 2022
Schipke et al. 2012
Smolík 2015

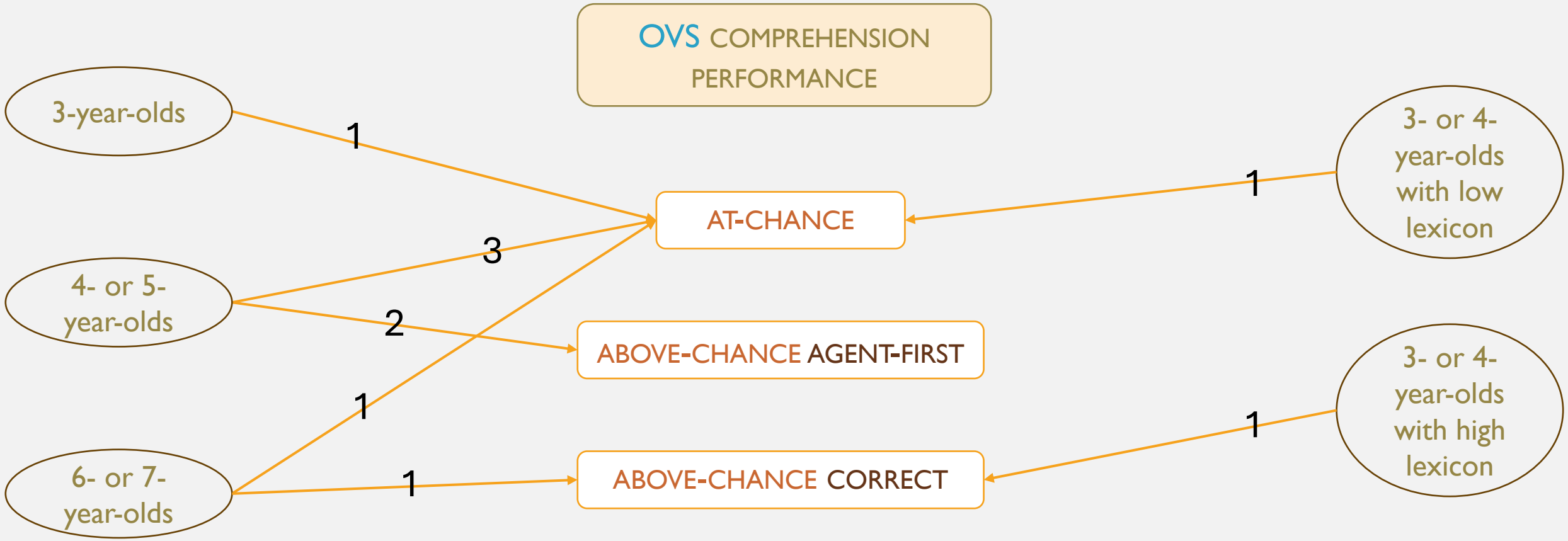
CZECH ACQUISITION

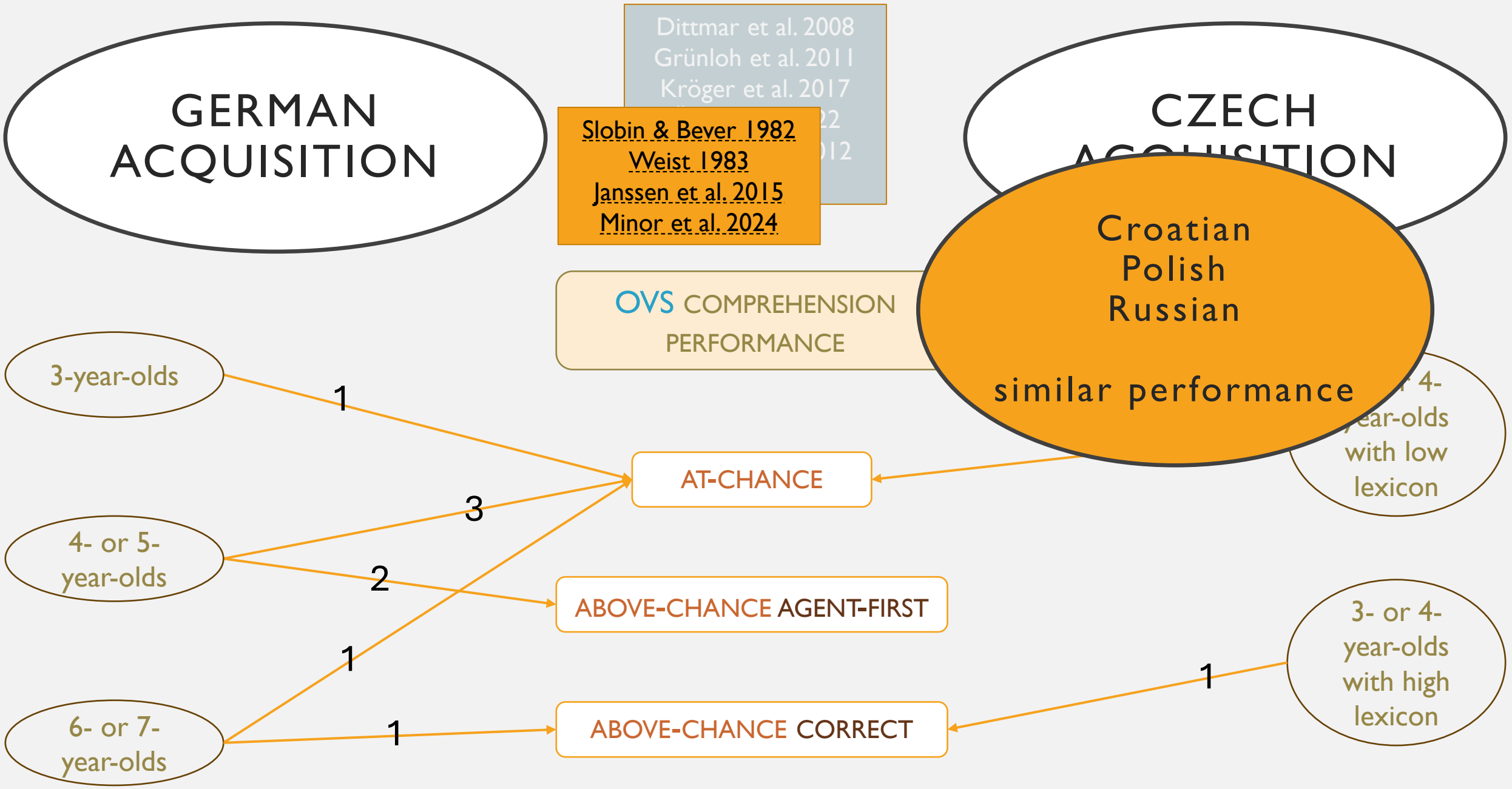


GERMAN ACQUISITION

Dittmar et al. 2008
Grünloh et al. 2011
Kröger et al. 2017
Özge et al. 2022
Schipke et al. 2012
Smolík 2015

CZECH ACQUISITION




GERMAN ACQUISITION
Dittmar et al. 2008
Grünloh et al. 2011
Kröger et al. 2017
Slobin & Bever 1982
Weist 1983
Janssen et al. 2015
Minor et al. 2024
CZECH ACQUISITION
Croatian
Polish
Russian
similar performance
OVS COMPREHENSION PERFORMANCE
3-year-olds
4- or 5-year-olds
6- or 7-year-olds
AT-CHANCE
ABOVE-CHANCE AGENT-FIRST
ABOVE-CHANCE CORRECT
4-year-olds with low lexicon
3- or 4-year-olds with high lexicon
1
3
2
1
1
1

EXPERIMENT METHOD

PARTICIPANTS

	N	sex		age in months		vocabulary percentile		
		f	m	range	mean (sd)	range	Q1	Q3
CZE	30	13	17					
GER	30	15	15					

PARTICIPANTS

	N	sex		age in months		vocabulary percentile		
		f	m	range	mean (sd)	range	Q1	Q3
CZE	30	13	17	43–65	51.5 (4.8)			
GER	30	15	15	41–69	51.4 (6.6)			

PARTICIPANTS

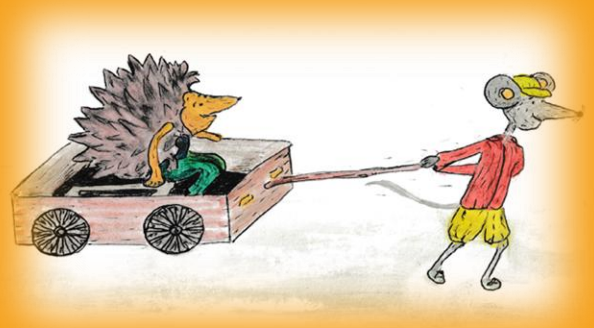
	N	sex		age in months		vocabulary percentile		
		f	m	range	mean (sd)	range	Q1	Q3
CZE	30	13	17	43–65	51.5 (4.8)	18.0–95.0	31.2	83.8
GER	30	15	15	41–69	51.4 (6.6)	21.2–97.7	66.4	89.3

SVO

DIE MAUS ZIEHT DEN IGEL

OVS

DEN IGEL ZIEHT DIE MAUS



SVO

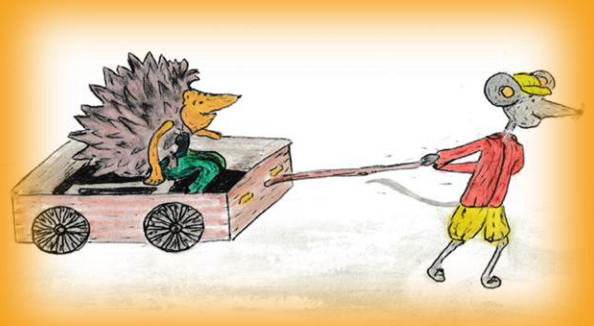
MYŠ TÁHNE JEŽKA

OVS

JEŽKA TÁHNE MYŠ

SVO DIE MAUS ZIEHT DEN IGEL

OVS DEN IGEL ZIEHT DIE MAUS

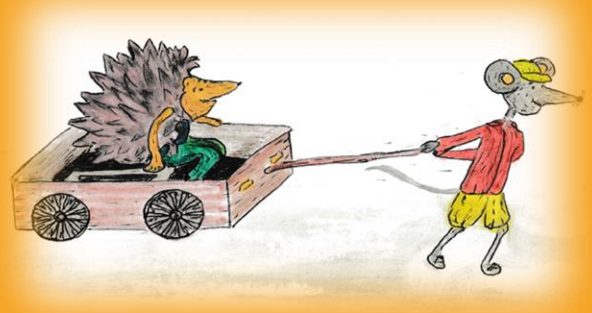


SVO MYŠ TÁHNE JEŽKA

OVS JEŽKA TÁHNE MYŠ

SVO DIE MAUS ZIEHT DEN IGEL

OVS DEN IGEL ZIEHT DIE MAUS

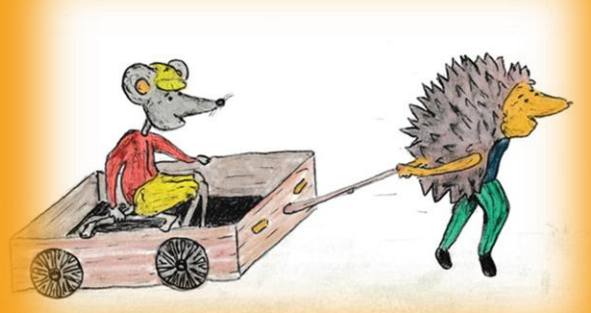


SVO MYŠ TÁHNE JEŽKA

OVS JEŽKA TÁHNE MYŠ

SVO DER IGEL ZIEHT DIE MAUS

OVS DIE MAUS ZIEHT DER IGEL



SVO JEŽEK TÁHNE MYŠ

OVS MYŠ TÁHNE JEŽEK

SVO DIE MAUS ZIEHT DEN IGEL

OVS DEN IGEL ZIEHT DIE MAUS

SVO DER IGEL ZIEHT DIE MAUS

OVS DIE MAUS ZIEHT DER IGEL

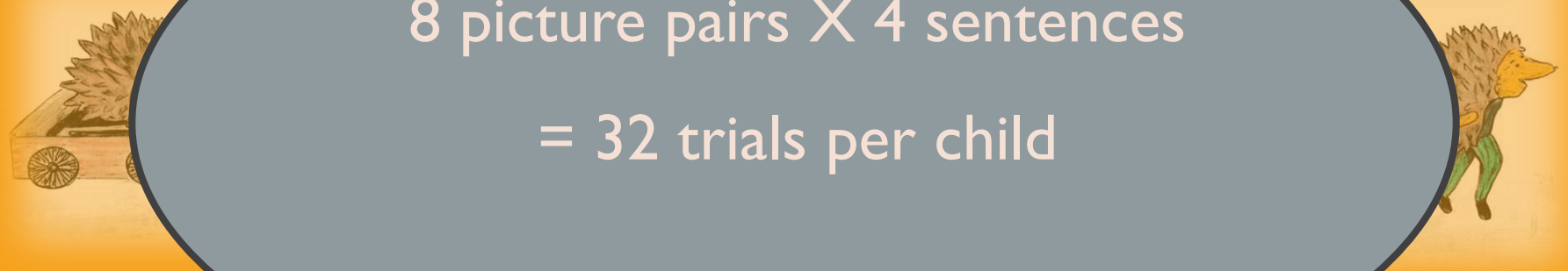
SVO MYŠ TÁHNE JEŽKA

OVS JEŽKA TÁHNE MYŠ

SVO JEŽEK TÁHNE MYŠ

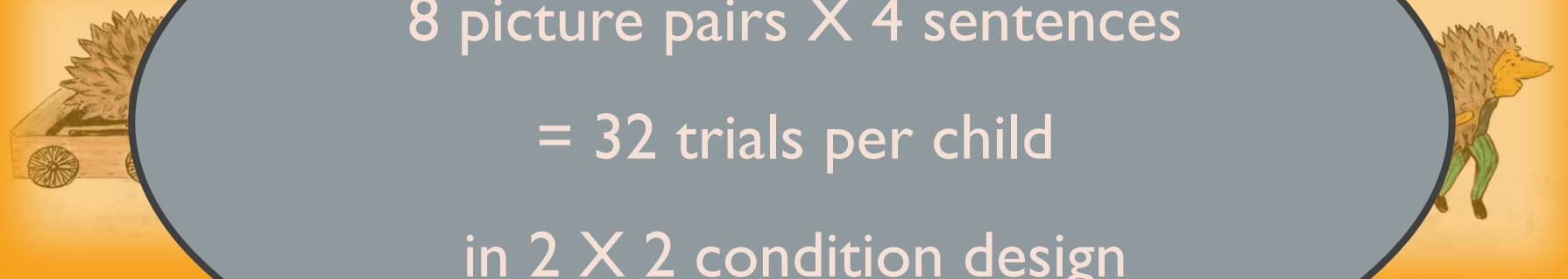
OVS MYŠ TÁHNE JEŽEK

8 picture pairs X 4 sentences



8 picture pairs X 4 sentences

= 32 trials per child



8 picture pairs X 4 sentences

= 32 trials per child

in 2 X 2 condition design

WORD ORDER
SVO X OVS

INITIAL AMBIGUITY
YES X NO

GENERAL PROCEDURE

receptive vocabulary test

familiarization with stimuli

eye-tracking + pointing

GENERAL PROCEDURE

receptive vocabulary test

familiarization with stimuli

eye-tracking + pointing

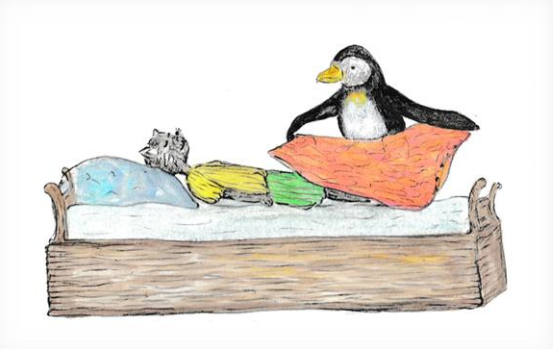
- German version of PPVT (Lenhard et al. 2015)
- a similar original Czech test (Smolík et al. 2018)

GENERAL PROCEDURE

receptive vocabulary test

familiarization with stimuli

eye-tracking + pointing



*"Look, in this picture, there's a **penguin** and a **kitten**, and one is covering the other."*

GENERAL PROCEDURE

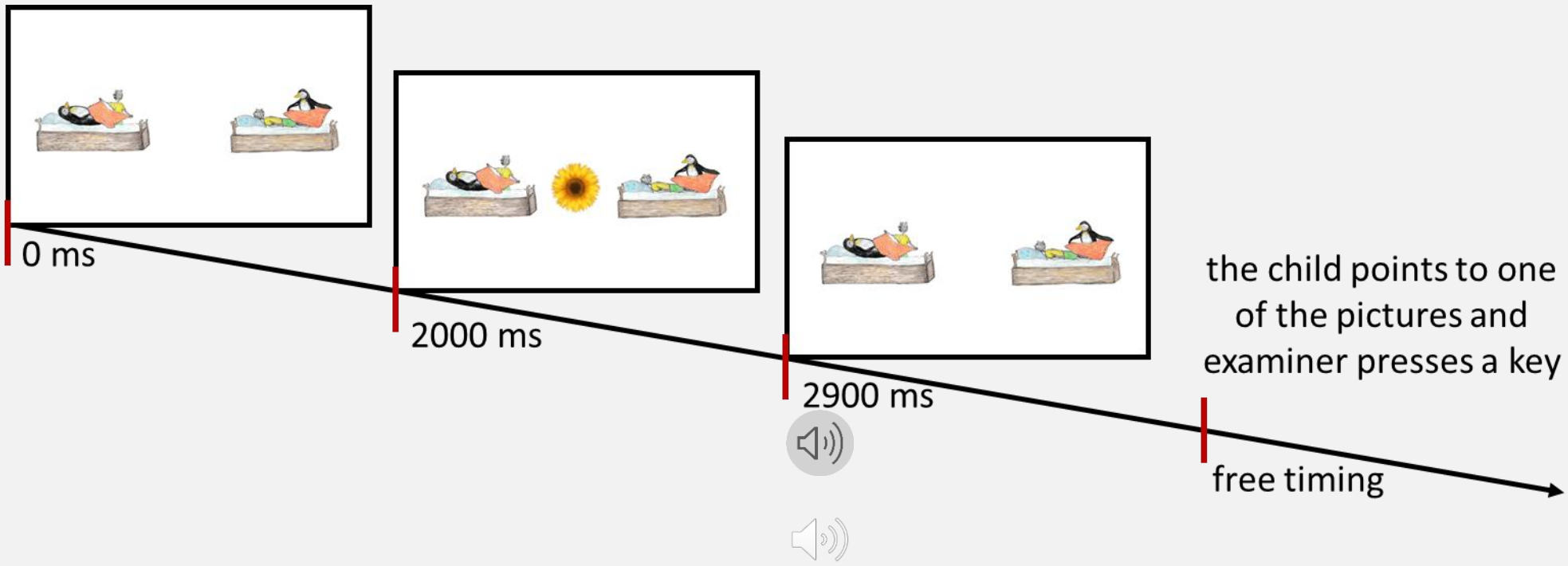
receptive vocabulary test

familiarization with stimuli

eye-tracking + pointing

- Tübingen: Tobii TX300
- Prague: EyeLink 1000 Plus

EYE-TRACKING PROCEDURE



DEPENDENT VARIABLE FOR THE ANALYSIS

DEPENDENT VARIABLE FOR THE ANALYSIS

pointing / looking at THE SVO PICTURE

DEPENDENT VARIABLE FOR THE ANALYSIS

pointing / looking at THE SVO PICTURE

SVO

Der Frosch füttert das Küken.

The frog is feeding the chick.

DEPENDENT VARIABLE FOR THE ANALYSIS

pointing / looking at THE SVO PICTURE

OVS

Das Küken füttert der Frosch.
The frog is feeding the chick.

ANALYSIS:
MIXED-EFFECT REGRESSION MODELS

POINTING

binomial

Formula SVO.resp ~ ambiguity/wordOrder + (1|participant) + (1|item)

Intercept SVO + unambig

LOOKING

TIME-WINDOW ANALYSIS

→ THE TIME-COURSE DIVIDED INTO 5 SEGMENTS

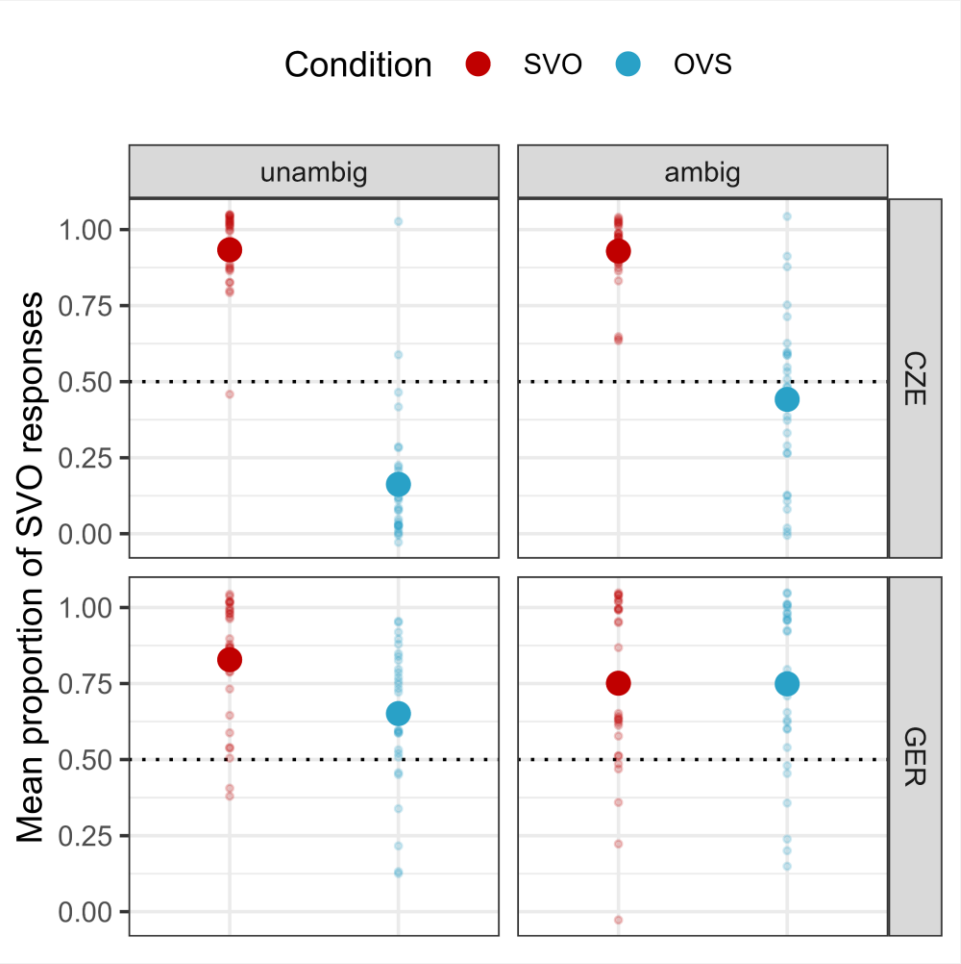
linear

Formula SVO.prop ~ segment/ambiguity/wordOrder + (1|participant) + (1|item)

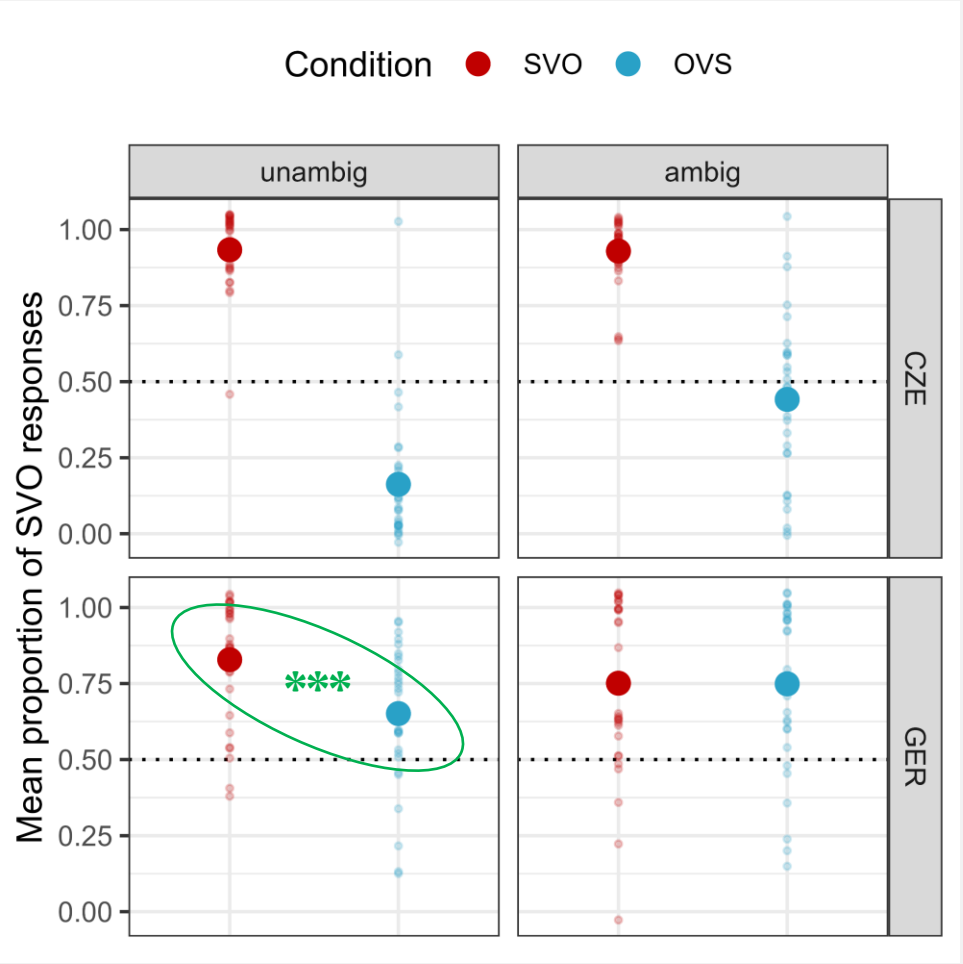
Intercept 1st segment + SVO + unambig

EXPERIMENT RESULTS

POINTING
EXPLICIT DECISION MAKING

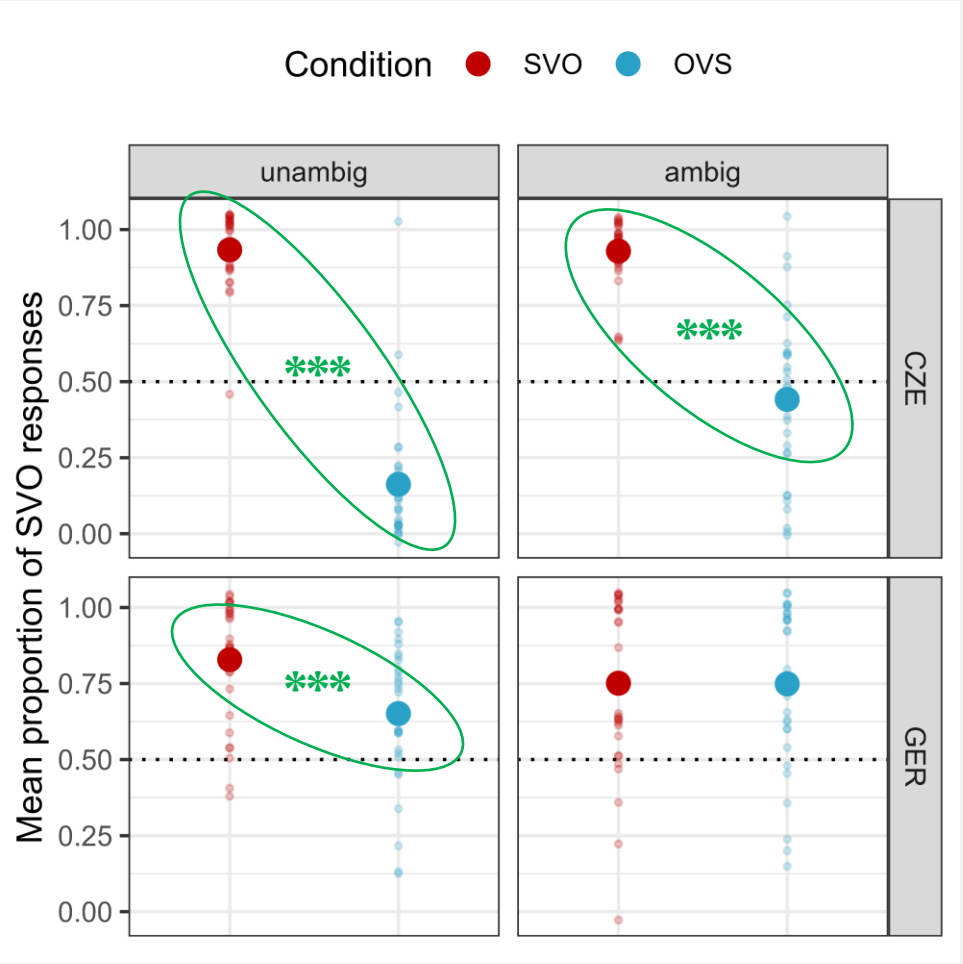


POINTING
EXPLICIT DECISION MAKING



significant difference between SVO and OVS
OVS above chance

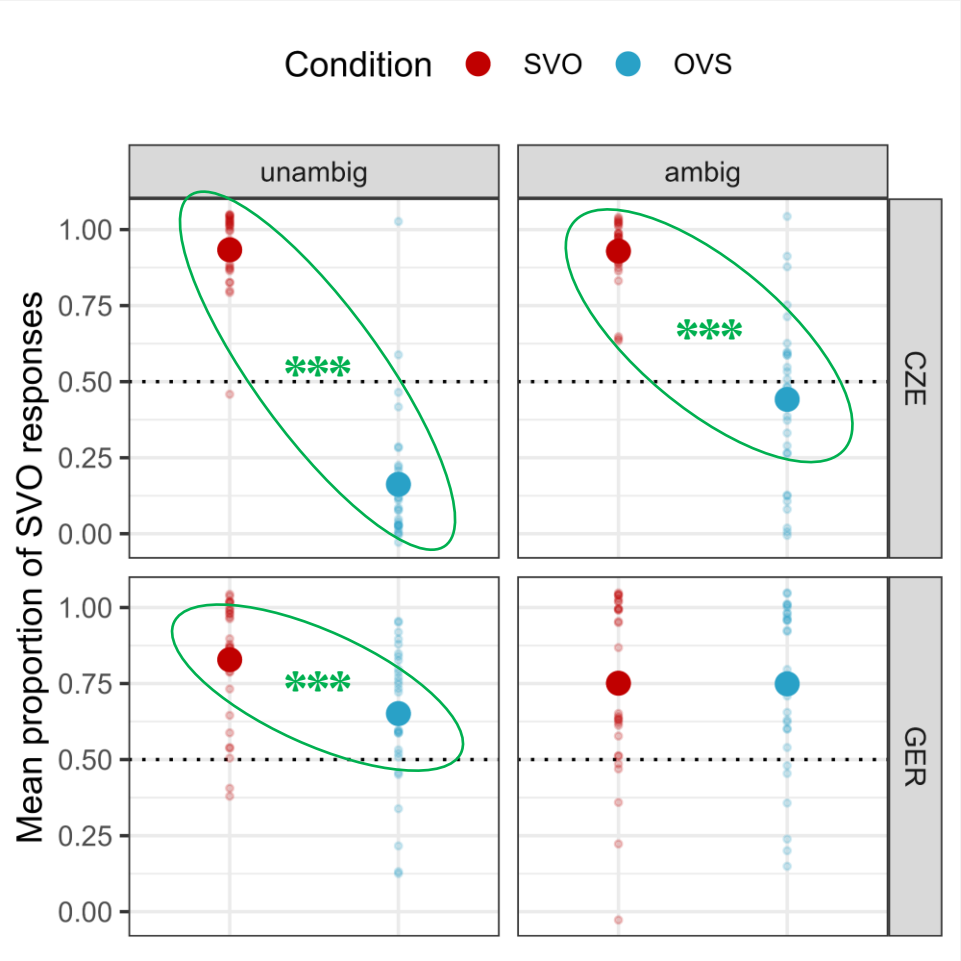
POINTING
EXPLICIT DECISION MAKING



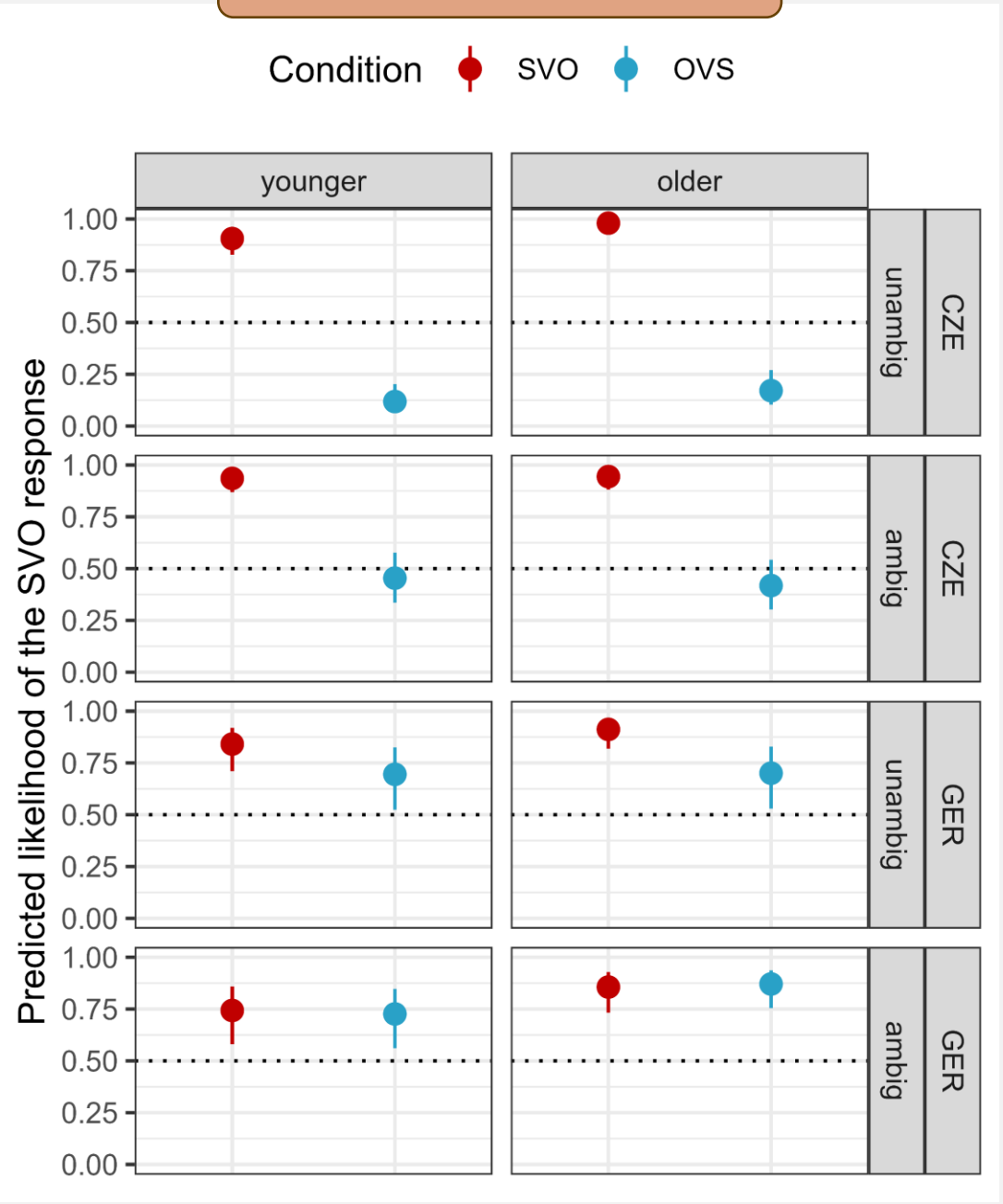
significant difference between SVO and OVS
in ambig, OVS at chance

significant difference between SVO and OVS
OVS above chance

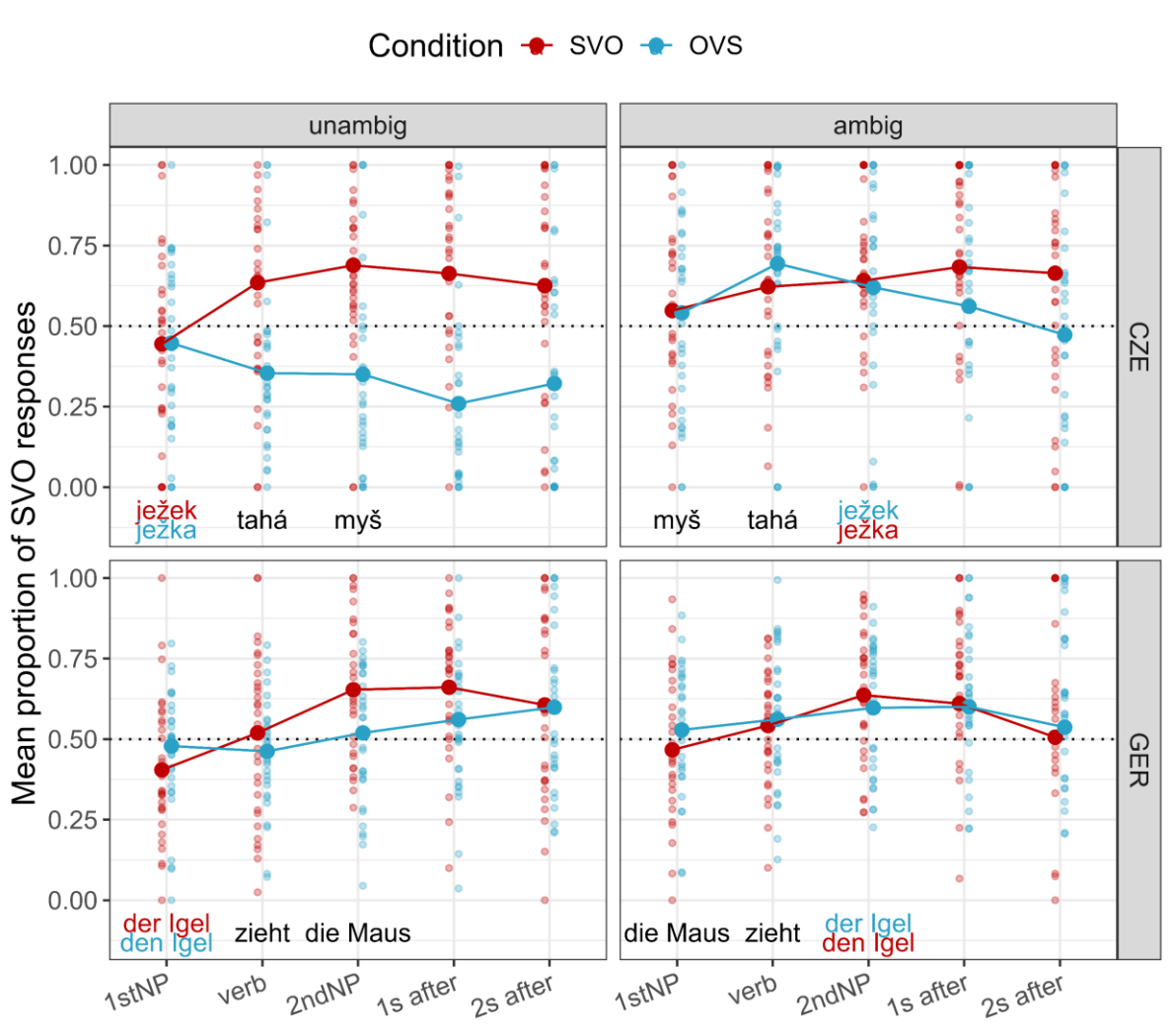
POINTING
EXPLICIT DECISION MAKING



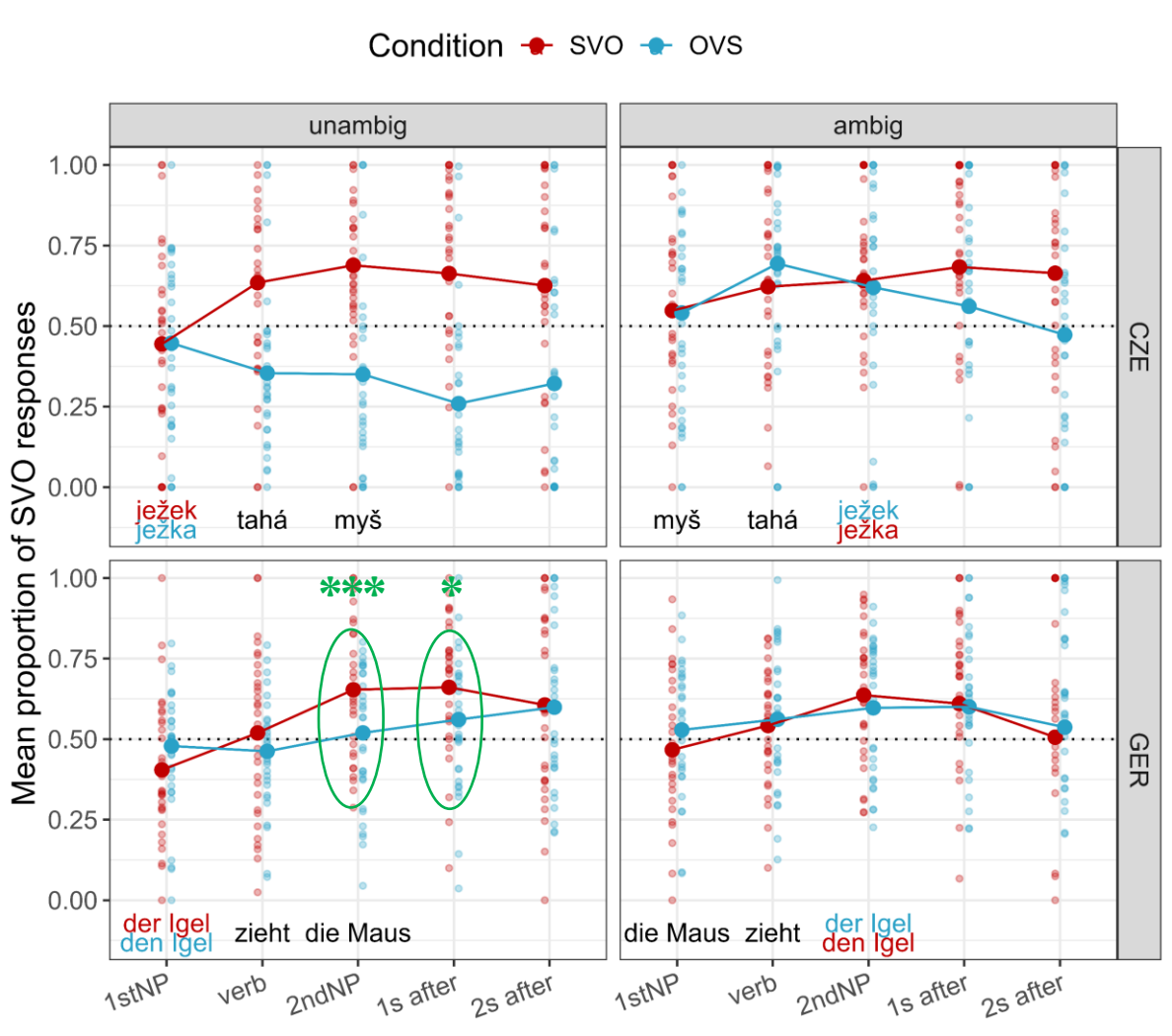
MEDIAN SPLIT (51 MONTHS)



LOOKING
IMPLICIT GAZE BEHAVIOR

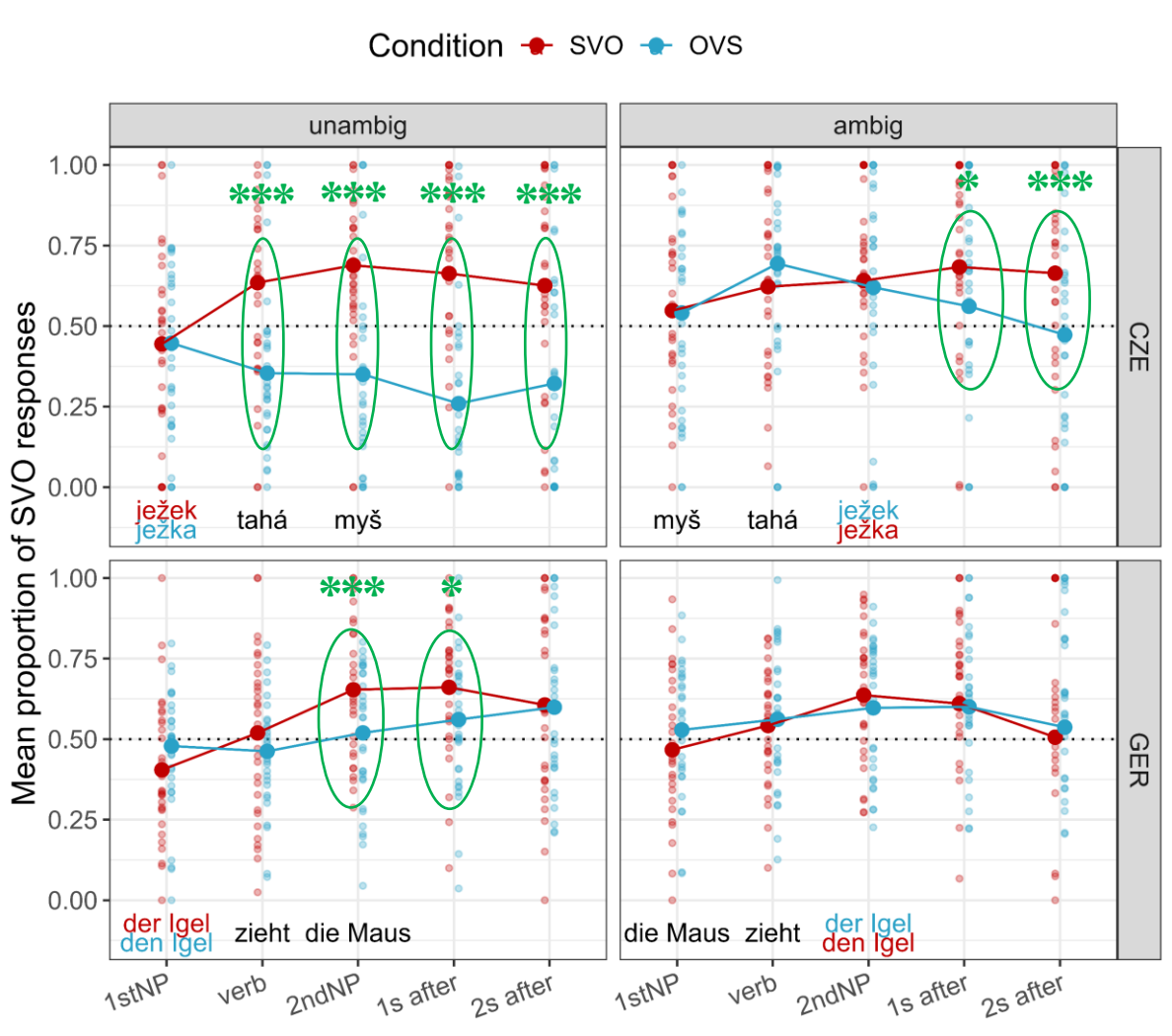


LOOKING
IMPLICIT GAZE BEHAVIOR



significant difference between SVO and OVS
OVS at chance

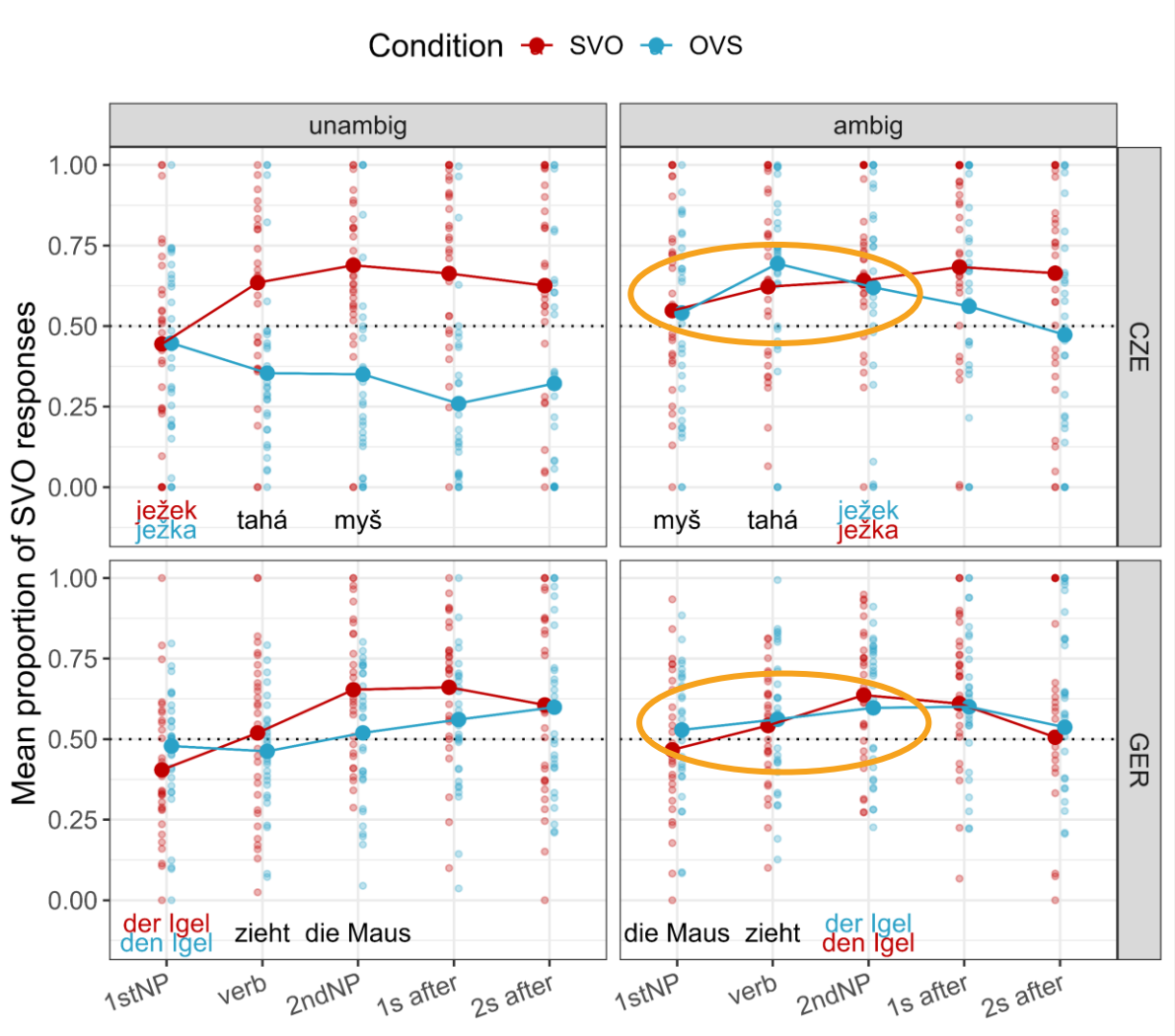
LOOKING
IMPLICIT GAZE BEHAVIOR



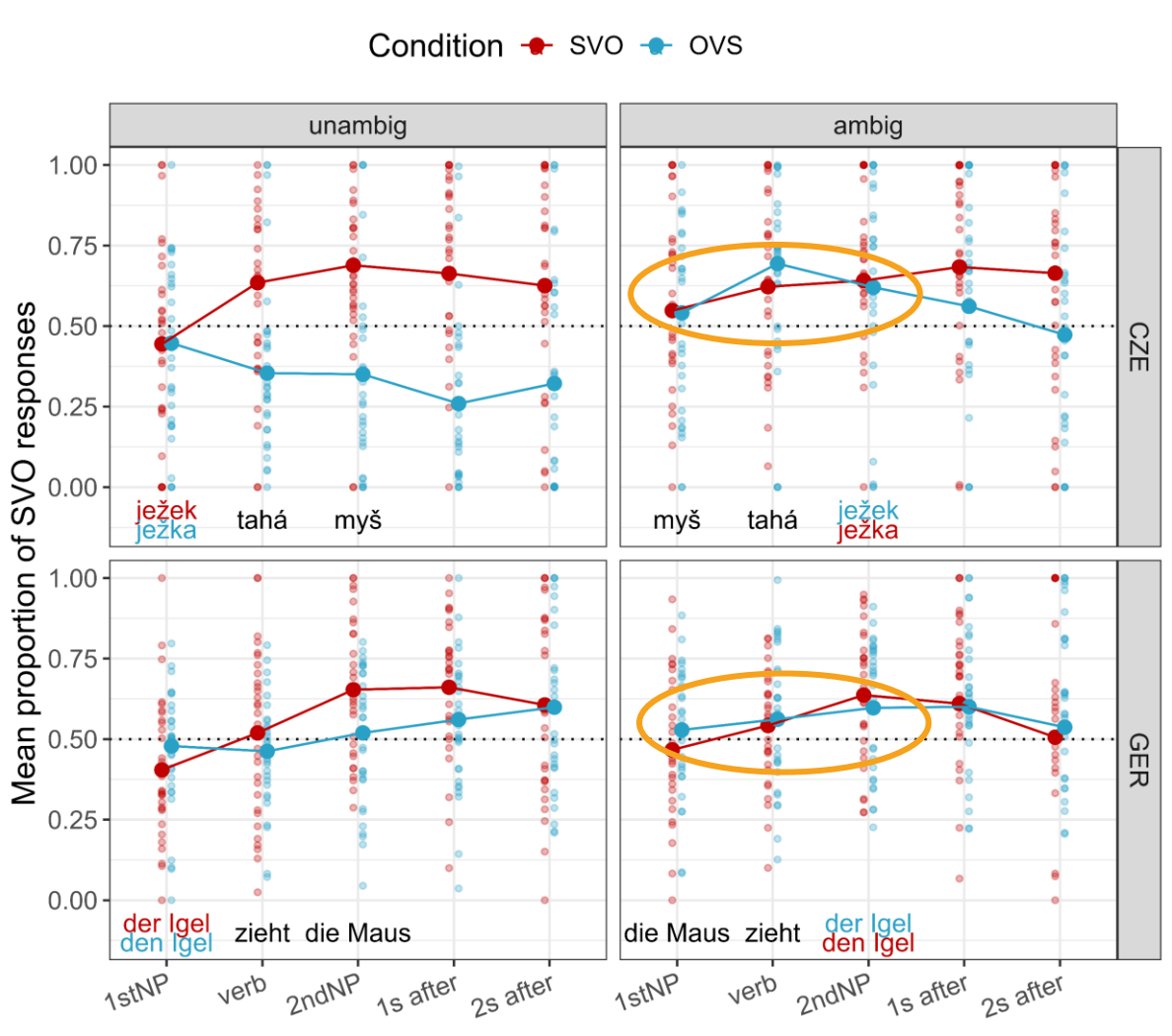
significant difference between SVO and OVS
in unambig, OVS below chance
in ambig, OVS at chance

significant difference between SVO and OVS
OVS at chance

LOOKING
IMPLICIT GAZE BEHAVIOR

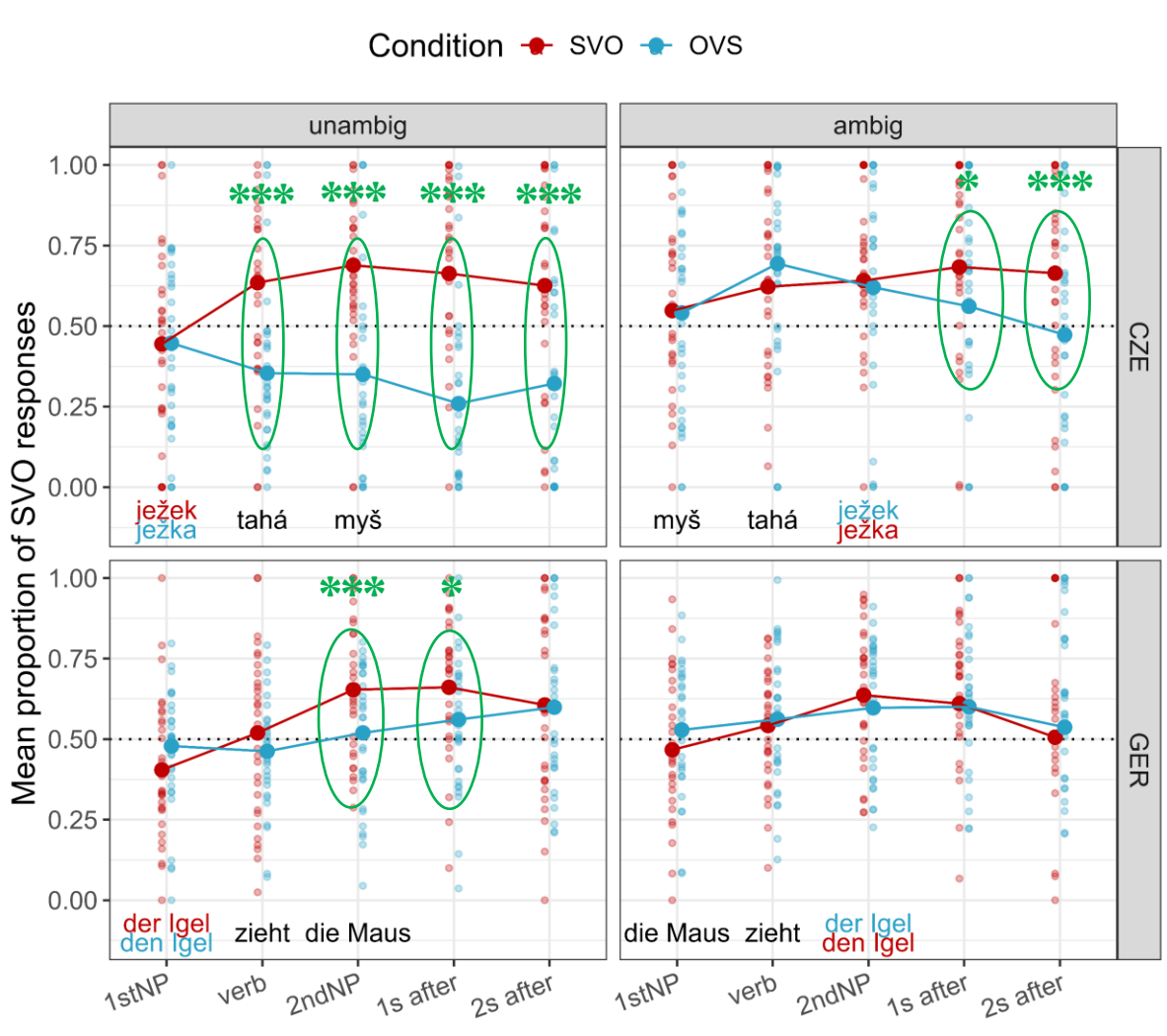


LOOKING
IMPLICIT GAZE BEHAVIOR

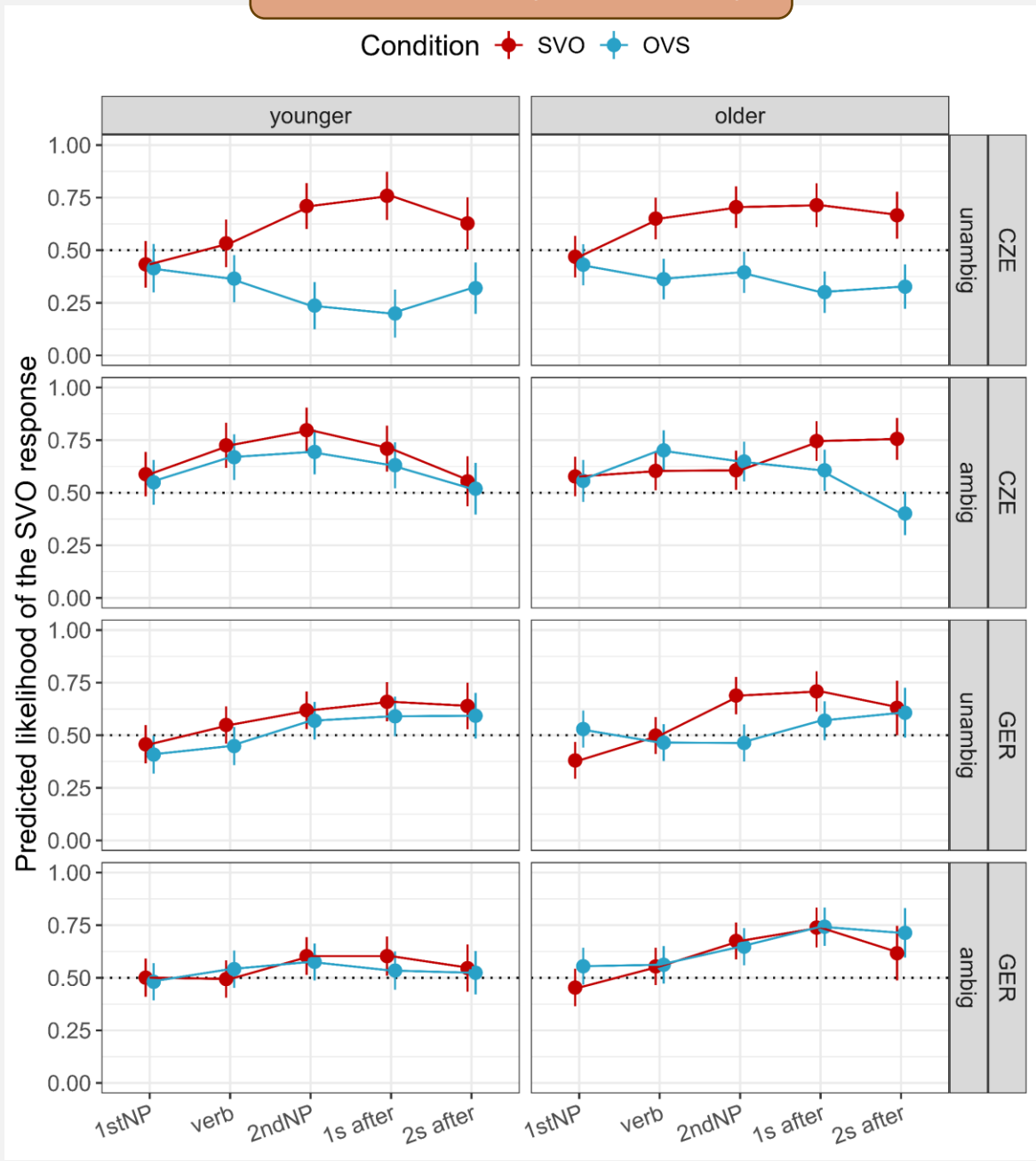


agent-first interpretation
(in the absence of a morphological cue)

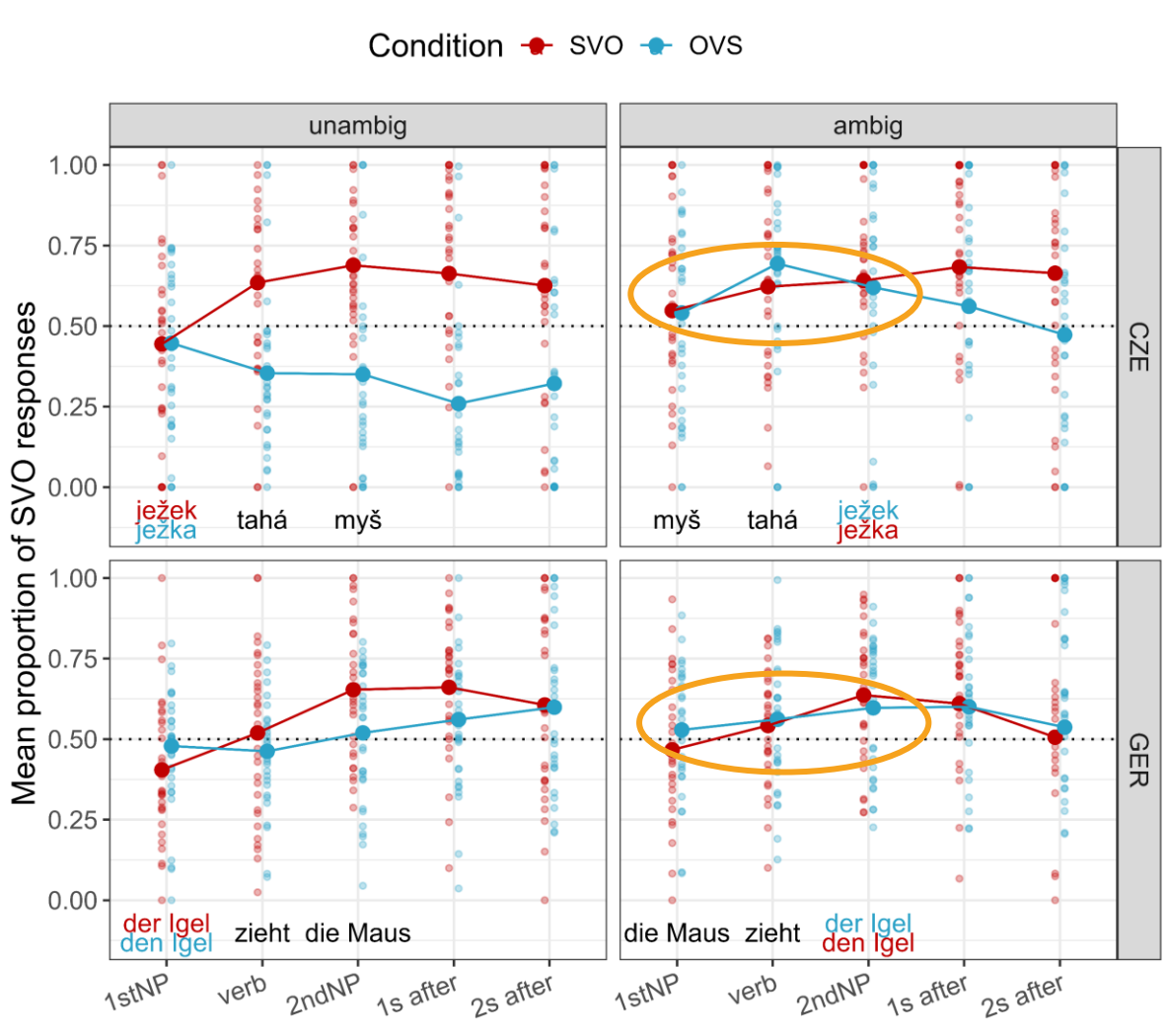
LOOKING
IMPLICIT GAZE BEHAVIOR



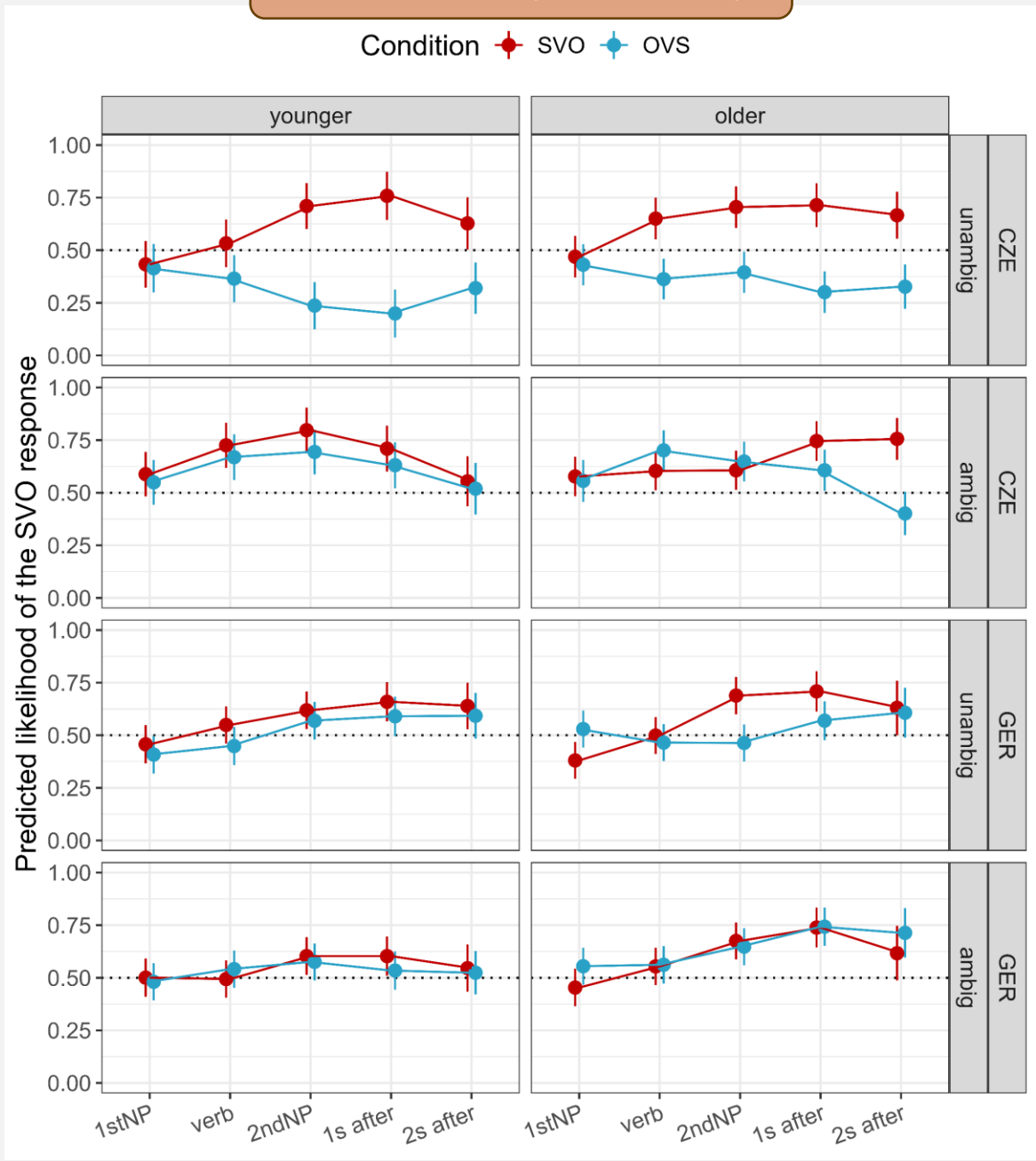
MEDIAN SPLIT (51 MONTHS)



LOOKING
IMPLICIT GAZE BEHAVIOR

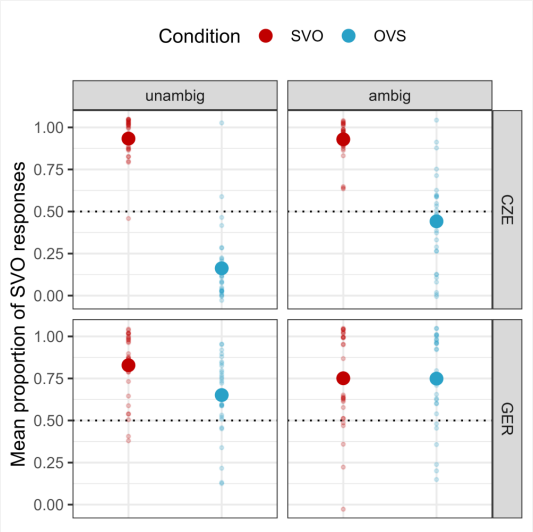


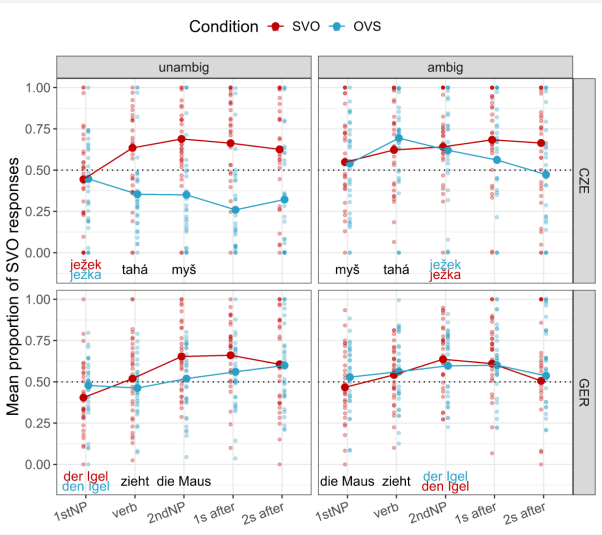
MEDIAN SPLIT (51 MONTHS)



CONCLUSIONS

1. the implicit and the explicit measure agree with each other

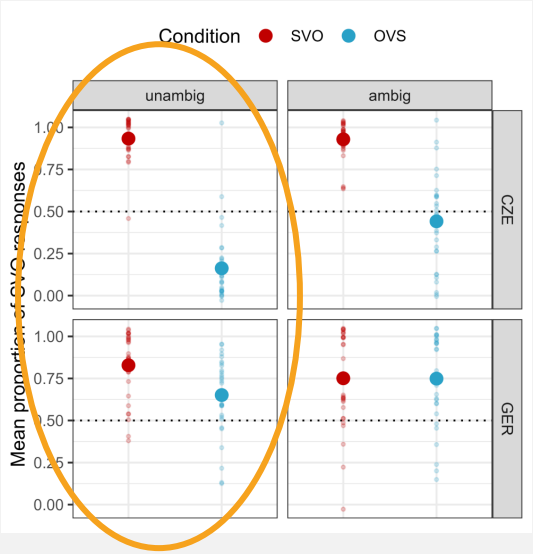


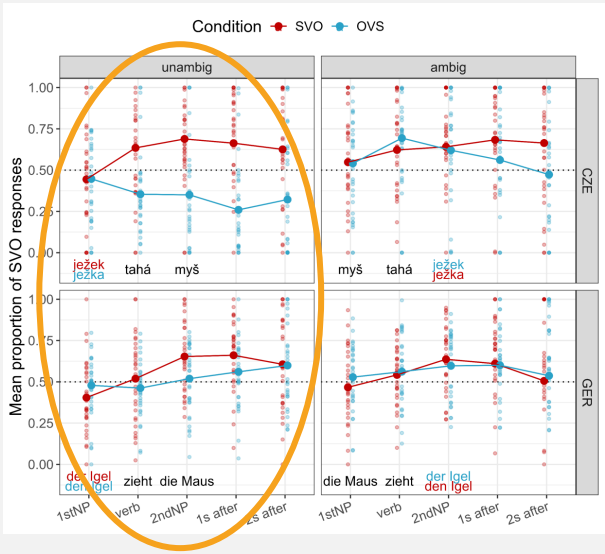


CONCLUSIONS

1. the implicit and the explicit measure agree with each other

2. starting with a case marker, both groups discriminate the conditions

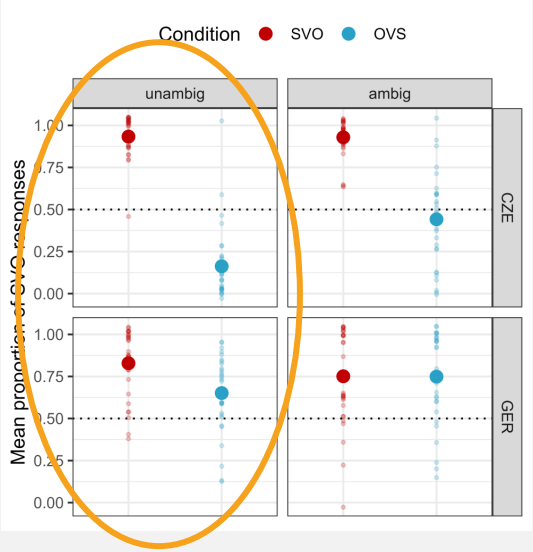


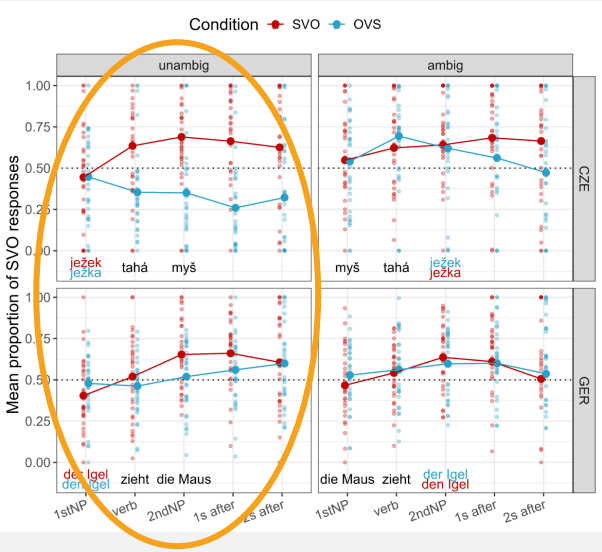


CONCLUSIONS

1. the implicit and the explicit measure agree with each other

2. starting with a case marker, both groups discriminate the conditions and both groups are correct with SVO,

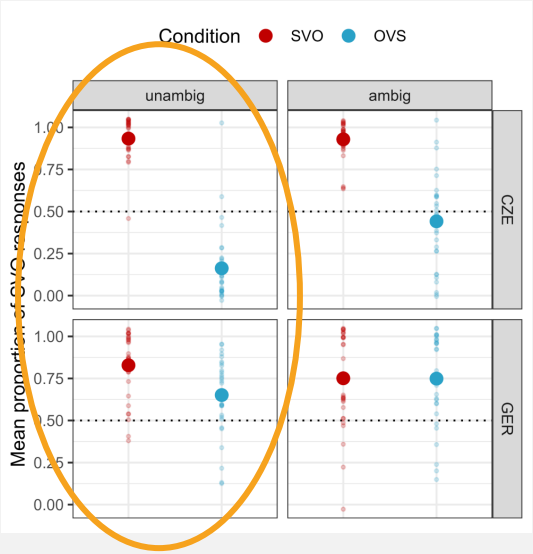


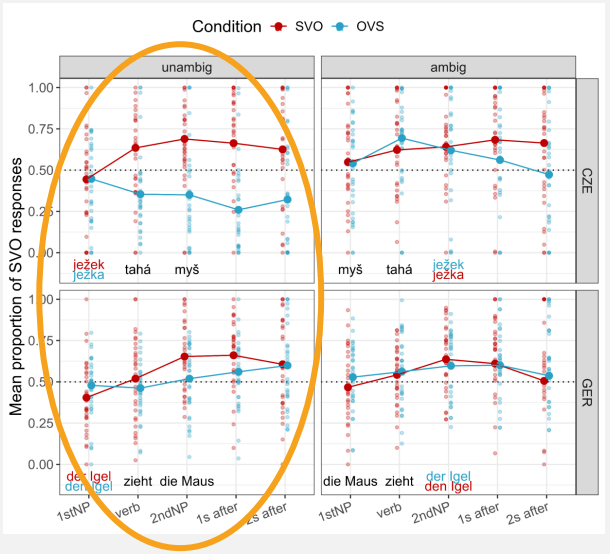


CONCLUSIONS

1. the implicit and the explicit measure agree with each other

2. starting with a case marker, both groups discriminate the conditions and both groups are correct with SVO, but with OVS, CZE kids are corect and GER are not



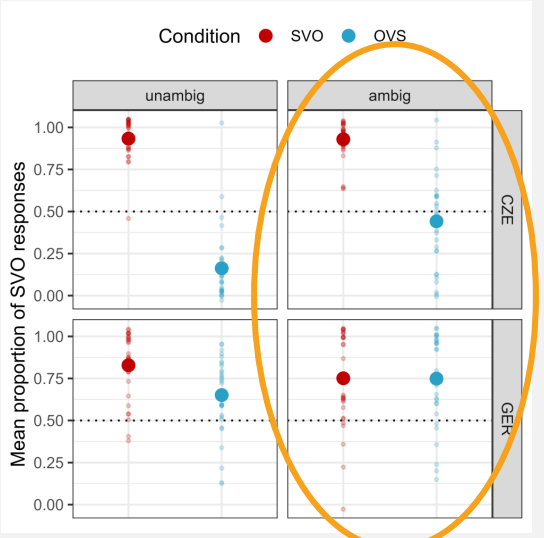


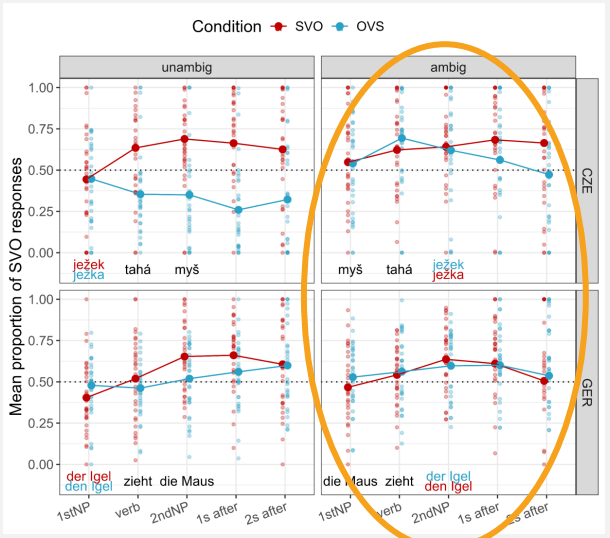
CONCLUSIONS

1. the implicit and the explicit measure agree with each other

2. starting with a case marker, both groups discriminate the conditions and both groups are correct with SVO, but with OVS, CZE kids are corect and GER are not

3. starting without a case marker, both groups prefer SVO up to the disambiguating point,



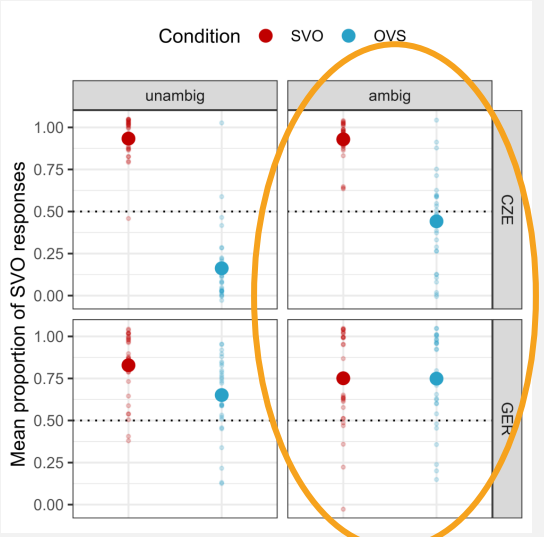


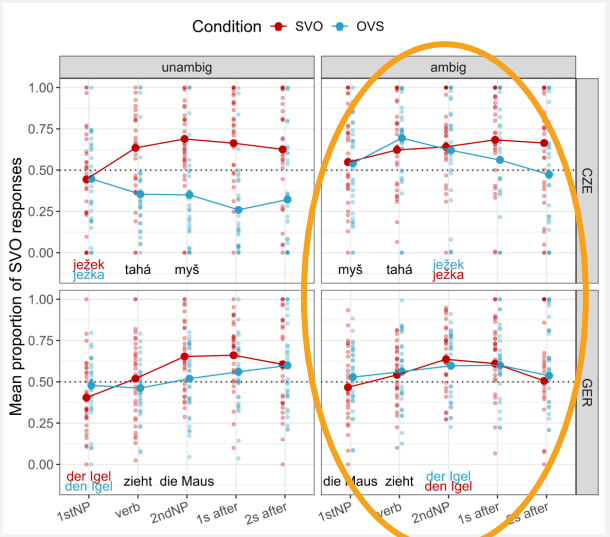
CONCLUSIONS

1. the implicit and the explicit measure agree with each other

2. starting with a case marker, both groups discriminate the conditions and both groups are correct with SVO, but with OVS, CZE kids are corect and GER are not

3. starting without a case marker, both groups prefer SVO up to the disambiguating point, but GER kids don‘t discriminate even after the disambiguation;



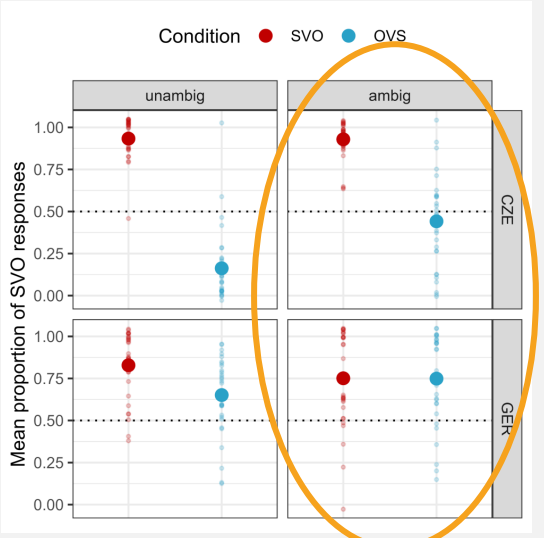


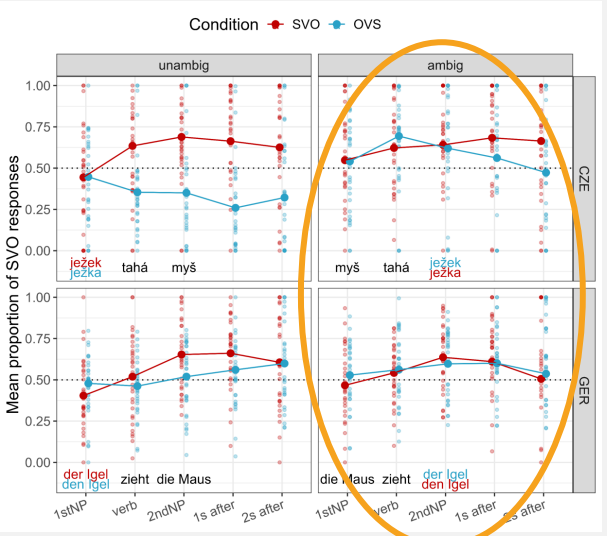
CONCLUSIONS

1. the implicit and the explicit measure agree with each other

2. starting with a case marker, both groups discriminate the conditions and both groups are correct with SVO, but with OVS, CZE kids are corect and GER are not

3. starting without a case marker, both groups prefer SVO up to the disambiguating point, but GER kids don‘t discriminate even after the disambiguation; while CZE kids start to reanalyze the OVS



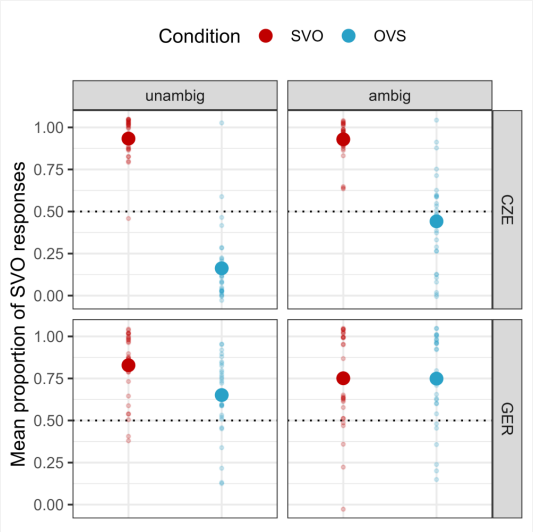


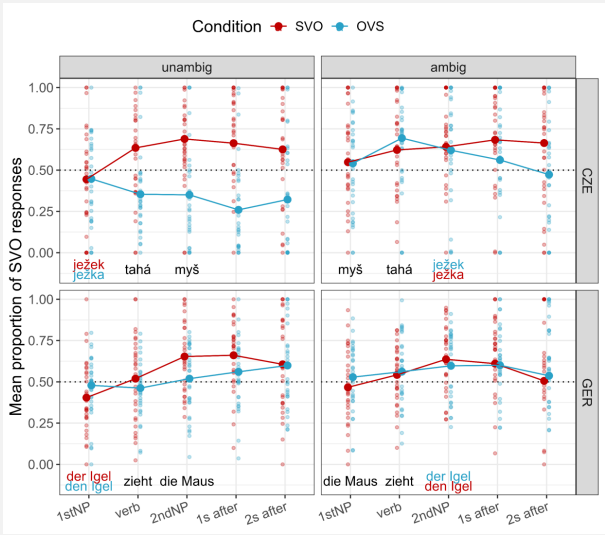
CONCLUSIONS

1. the implicit and the explicit measure agree with each other

2. starting with a case marker, both groups discriminate the conditions and both groups are correct with SVO, but with OVS, CZE kids are corect and GER are not

3. starting without a case marker, both groups prefer SVO up to the disambiguating point, but GER kids don‘t discriminate even after the disambiguation; while CZE kids start to reanalyze the OVS



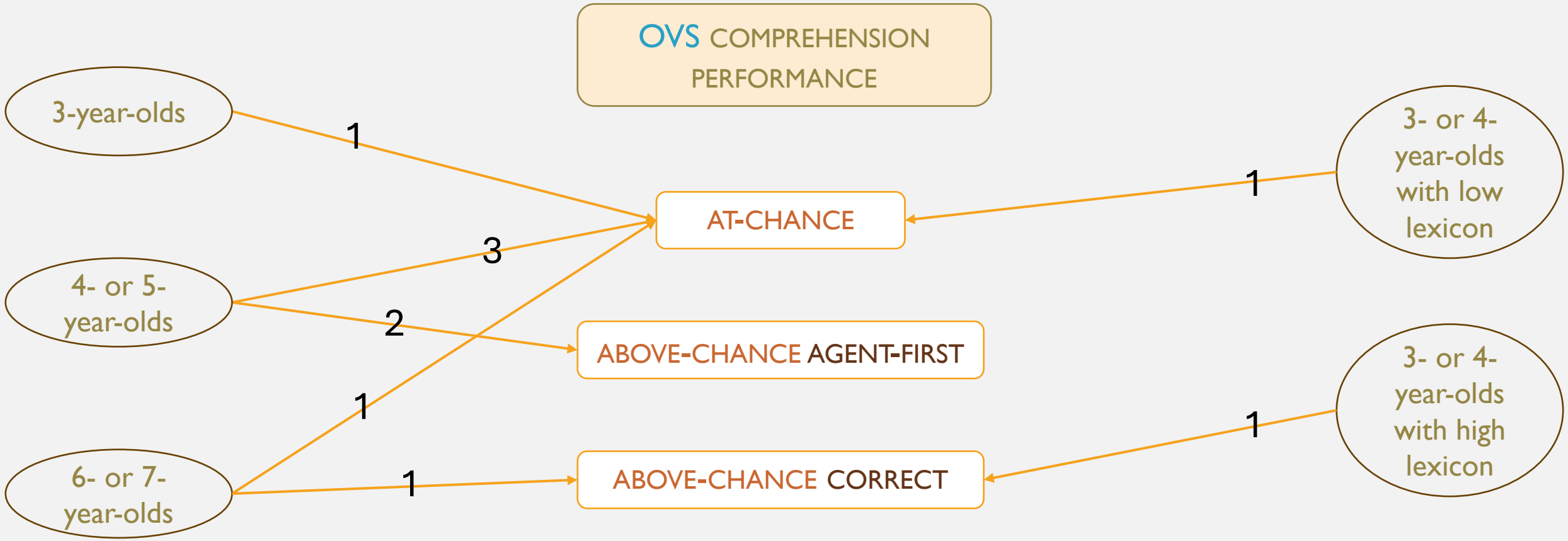


→ compared to CZE, GER acquisition of OVS is delayed

GERMAN ACQUISITION

Dittmar et al. 2008
Grünloh et al. 2011
Kröger et al. 2017
Özge et al. 2022
Schipke et al. 2012
Smolík 2015

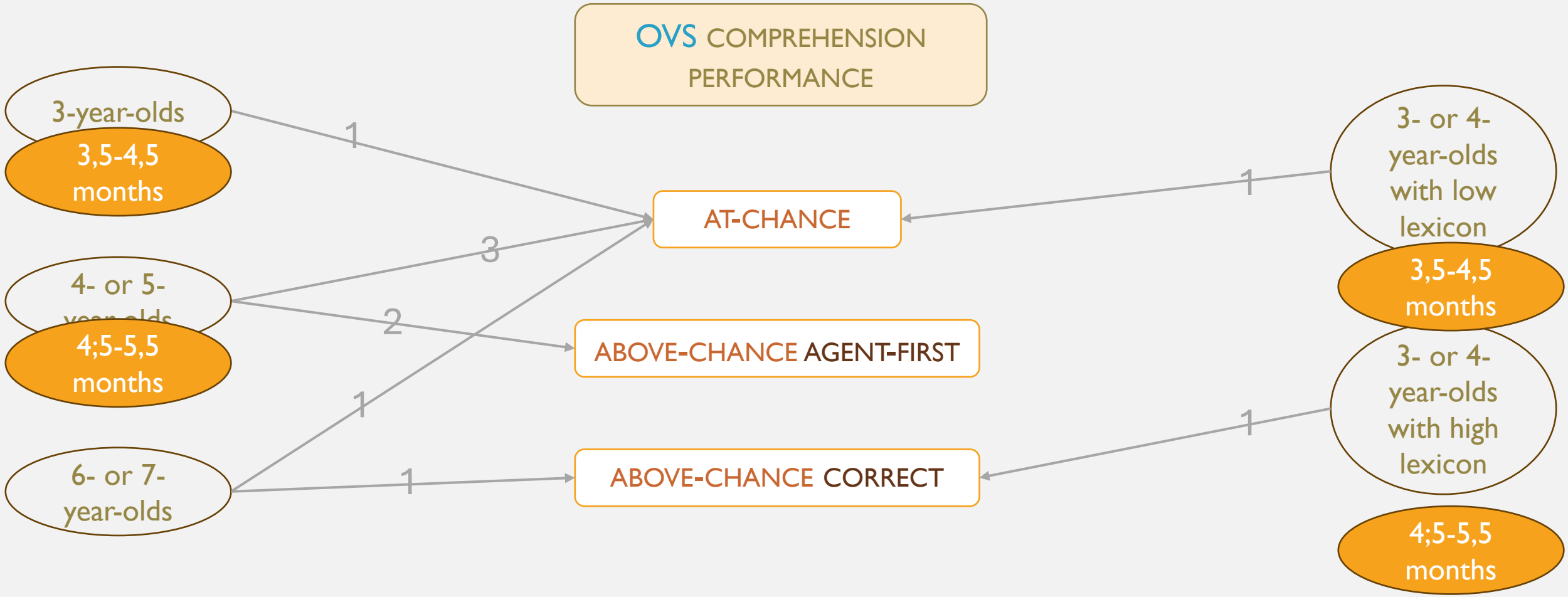
CZECH ACQUISITION



GERMAN ACQUISITION

current study

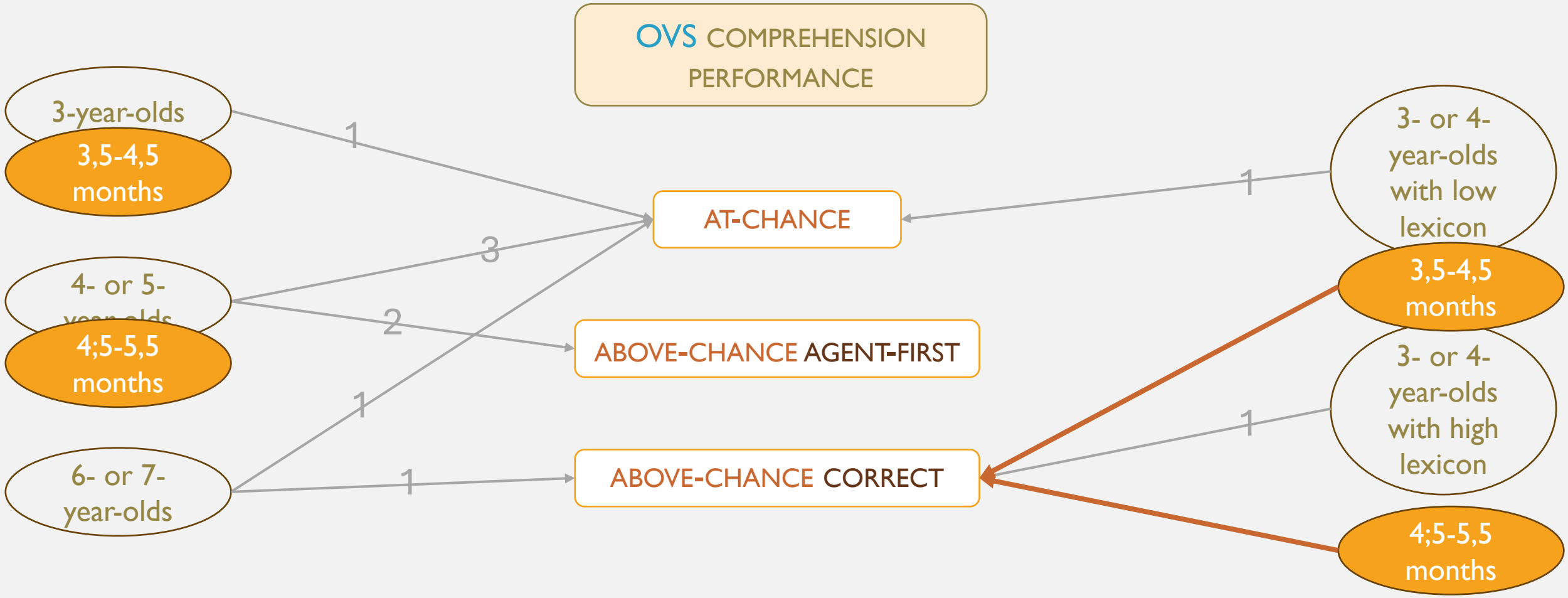
CZECH ACQUISITION



GERMAN ACQUISITION

current study

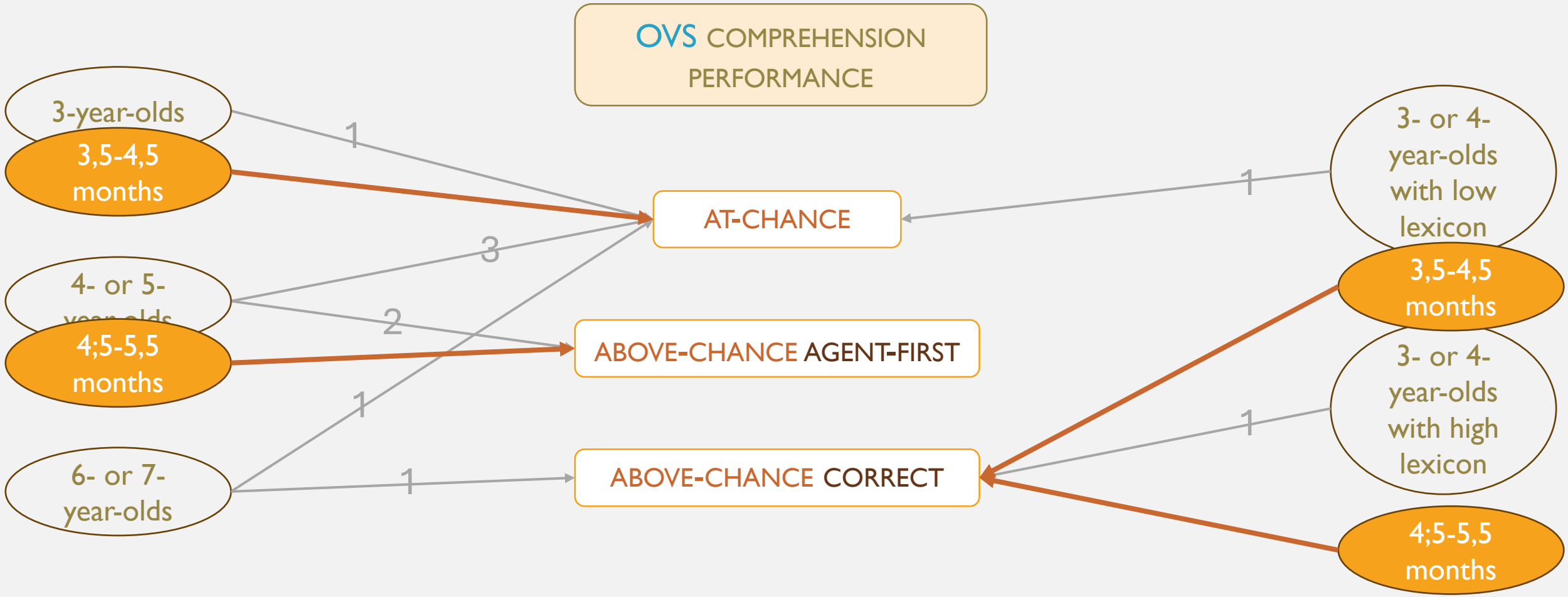
CZECH ACQUISITION

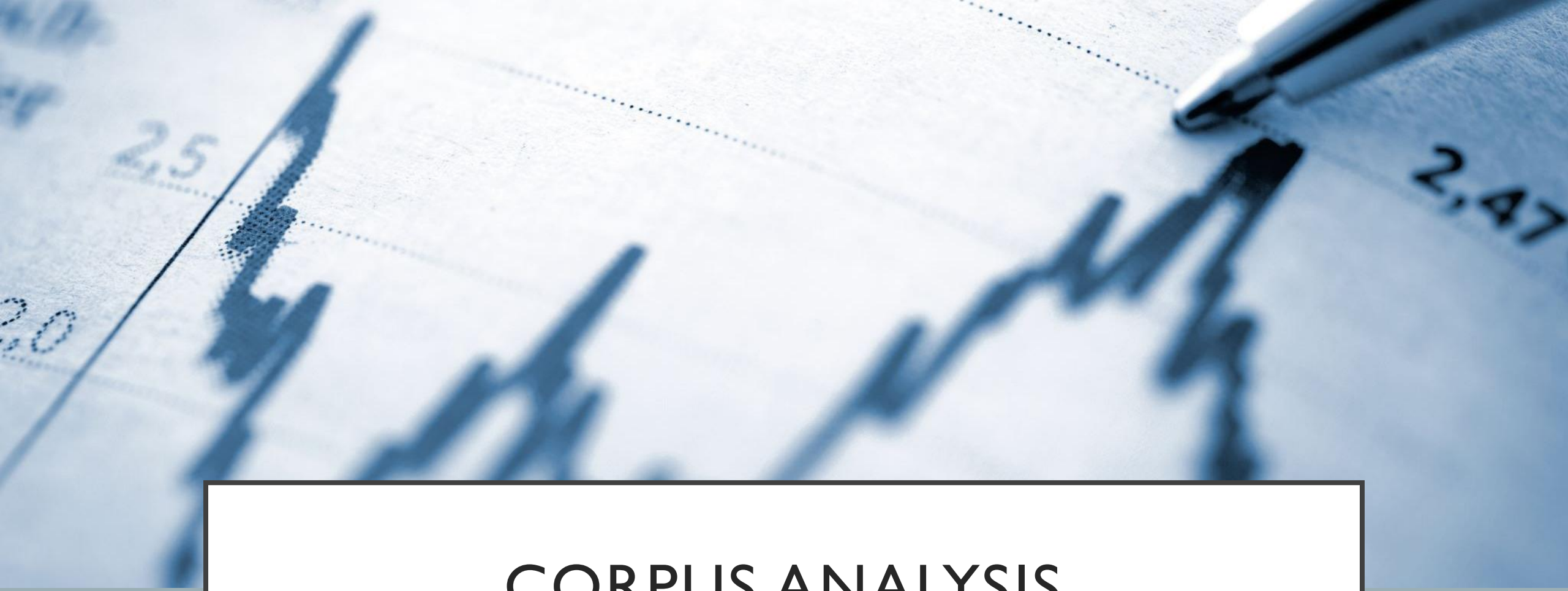


GERMAN ACQUISITION

current study

CZECH ACQUISITION





CORPUS ANALYSIS

	German Dittmar et al. (2008)	Czech
N of participants	6	62
age of children	1;8 + 2;5	2;5-2;7
N of mother‘s utt total	7,032	10,113

	German Dittmar et al. (2008)	Czech
N of participants	6	62
age of children	1;8 + 2;5	2;5-2;7
N of mother's utt total	7,032	10,113

	total utt	trans (%)	subject-first (%)	object-first (%)	SO:OS
German Dittmar et al. (2008)	7,032	745 (10.6)	? (67)*	? (33)*	2
Czech	10,113	1,062 (10.5)	163 (15.3) SVO+SOV	26 (2.4) OVS+OSV	6.3
			174 (16.4) SVO+SOV+VSO	31 (2.9) OVS+OSV+VOS	5.6

	German Dittmar et al. (2008)	Czech
N of participants	6	62
age of children	1;8 + 2;5	2;5-2;7
N of mother's utt total	7,032	10,113

	total utt	trans (%)	subject-first (%)	object-first (%)	SO:OS
German Dittmar et al. (2008)	7,032	745 (10.6)	? (67)*	? (33)*	2
Czech	10,113	1,062 (10.5)	163 (15.3) SVO+SOV	26 (2.4) OVS+OSV	6.3
			174 (16.4) SVO+SOV+VSO	31 (2.9) OVS+OSV+VOS	5.6

*Only the percentages for these cells were reported, it is not possible to reconstruct the counts due to incomplete figures.

	German Dittmar et al. (2008)	Czech
N of participants	6	62
age of children	1;8 + 2;5	2;5-2;7
N of mother's utt total	7,032	10,113

	total utt	trans (%)	subject-first (%)	object-first (%)	SO:OS
German Dittmar et al. (2008)	7,032	745 (10.6)	? (67)*	? (33)*	2
Czech	10,113	1,062 (10.5)	163 (15.3) SVO+SOV	26 (2.4) OVS+OSV	6.3
			174 (16.4) SVO+SOV+VSO	31 (2.9) OVS+OSV+VOS	5.6

*Only the percentages for these cells were reported, it is not possible to reconstruct the counts due to incomplete figures.

	German Dittmar et al. (2008)	Czech
N of participants	6	62
age of children	1;8 + 2;5	2;5-2;7
N of mother's utt total	7,032	10,113

	total utt	trans (%)	subject-first (%)	object-first (%)	SO:OS
German Dittmar et al. (2008)	7,032	745 (10.6)	? (67)*	? (33)*	2
Czech	10,113	1,062 (10.5)	163 (15.3) SVO+SOV	26 (2.4) OVS+OSV	6.3
			174 (16.4) SVO+SOV+VSO	31 (2.9) OVS+OSV+VOS	5.6

*Only the percentages for these cells were reported, it is not possible to reconstruct the counts due to incomplete figures.

	German Dittmar et al. (2008)	Czech
N of participants	6	62
age of children	1;8 + 2;5	2;5-2;7
N of mother's utt total	7,032	10,113

	total utt	trans (%)	subject-first (%)	object-first (%)	SO:OS	OV (%)	VO (%)
German Dittmar et al. (2008)	7,032	745 (10.6)	? (67)*	? (33)*	2	–	–
Czech	10,113	1,062 (10.5)	163 (15.3) SVO+SOV	26 (2.4) OVS+OSV	6.3	431 (41)	426 (40)
			174 (16.4) SVO+SOV+VSO	31 (2.9) OVS+OSV+VOS	5.6		

*Only the percentages for these cells were reported, it is not possible to reconstruct the counts due to incomplete figures.

DISCUSSION

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

1. Low variability and availability of forms
2. Low perceptual saliency of contrasts
3. Pre-marking of case
4. Role of obligatory subject expression

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

1. Low variability and availability of forms

1.A GER: one class for each gender

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

1. Low variability and availability of forms

1.A GER: one class for each gender

CZE: 4 classes for each gender

fem 'frog'	žáb	-a$_{NOM}$	-u$_{ACC}$
fem 'monkey'	opic	-e$_{NOM}$	-i$_{ACC}$

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

1. Low variability and availability of forms

1.A GER: one class for each gender

CZE: 4 classes for each gender

fem 'frog'	žáb	-a$_{NOM}$	-u$_{ACC}$
fem 'monkey'	opic	-e$_{NOM}$	-i$_{ACC}$

1.B GER: high number of animate nouns with NOM-ACC ambiguity

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

1. Low variability and availability of forms

1.A GER: one class for each gender

CZE: 4 classes for each gender

fem 'frog'	žáb	-a$_{NOM}$	-u$_{ACC}$
fem 'monkey'	opic	-e$_{NOM}$	-i$_{ACC}$

1.B GER: high number of animate nouns with NOM-ACC ambiguity

die Maus	myš
das Küken	kuře
das Kätzchen	kotě
das Hündchen	štěně
das Schwein	prase

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

1. Low variability and availability of forms

1.A GER: one class for each gender

CZE: 4 classes for each gender

fem 'frog'	žáb	-a$_{NOM}$	-u$_{ACC}$
fem 'monkey'	opic	-e$_{NOM}$	-i$_{ACC}$

1.B GER: high number of animate nouns with NOM-ACC ambiguity

die Maus	myš
das Küken	kuře
das Kätzchen	kotě
das Hündchen	štěně
das Schwein	prase

paní	die Frau
dítě	das Kind

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

1. Low variability and availability of forms

1.A GER: one class for each gender

CZE: 4 classes for each gender

fem 'frog'	žáb	-a$_{NOM}$	-u$_{ACC}$
fem 'monkey'	opic	-e$_{NOM}$	-i$_{ACC}$

1.B GER: high number of animate nouns with NOM-ACC ambiguity

die Maus	myš
das Küken	kuře
das Kätzchen	kotě
das Hündchen	štěně
das Schwein	prase

paní	die Frau
dítě	das Kind
jehně	das Lamm
kůzle	das Zicklein
... ...	

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

1. Low variability and availability of forms

1.A GER: one class for each gender

CZE: 4 classes for each gender

fem 'frog'	žáb	-a$_{NOM}$	-u$_{ACC}$
fem 'monkey'	opic	-e$_{NOM}$	-i$_{ACC}$

1.B GER: high number of animate nouns with NOM-ACC ambiguity

die Maus	myš
das Küken	kuře
das Kätzchen	kotě
das Hündchen	štěně
das Schwein	prase

paní	die Frau
dítě	das Kind
jehně	das Lamm
kůzle	das Zicklein
... ...	

BUT: between-class NOM-ACC ambiguities in CZE

sufix -a	sufix -e
žáb-a$_{NOM}$	opic-e$_{NOM}$
tučňák-a$_{ACC}$	šimpanz-e$_{ACC}$

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

2. Low perceptual saliency of contrasts

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

2. Low perceptual saliency of contrasts

GER

der_{NOM} den_{ACC}

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

2. Low perceptual saliency of contrasts

CZE

tučňák$_{NOM}$ more syllables tučňáka$_{ACC}$

GER

der$_{NOM}$ den$_{ACC}$

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

2. Low perceptual saliency of contrasts

CZE

$tučňák_{NOM}$	more syllables	$tučňáka_{ACC}$
pes_{NOM}	stem change	psa_{ACC}

GER

der_{NOM} den_{ACC}

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

2. Low perceptual saliency of contrasts

CZE

tučňák$_{NOM}$	more syllables	tučňáka$_{ACC}$
pes$_{NOM}$	stem change	psa$_{ACC}$
žába$_{NOM}$	vowel ending	žábu$_{ACC}$

GER

der$_{NOM}$ den$_{ACC}$

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

2. Low perceptual saliency of contrasts

CZE

tučňák$_{NOM}$	more syllables	tučňáka$_{ACC}$
pes$_{NOM}$	stem change	psa$_{ACC}$
žába$_{NOM}$	vowel ending	žábu$_{ACC}$

GER

der$_{NOM}$ den$_{ACC}$

BUT: no evidence of GER kids' inability to notice the contrasts

GER kids produce the forms before age of 3
(Sagun 2004; Wittek & Tomasello 2005)

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

3. Pre-marking of case

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

3. Pre-marking of case

CZE post-marking

1st lexical retrieval

GER pre-marking

1st the case-marker

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

3. Pre-marking of case

CZE post-marking

1st lexical retrieval

→ space for predicting the role / case marker

GER pre-marking

1st the case-marker

→ no space for making prediction (errors)

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

3. Pre-marking of case

CZE post-marking

1st lexical retrieval

→ space for predicting the role / case marker

→ space for prediction error and fast learning

GER pre-marking

1st the case-marker

→ no space for making prediction (errors)

→ slow learning

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

3. Pre-marking of case

CZE post-marking

1st lexical retrieval

→ space for predicting the role / case marker

→ space for prediction error and fast learning

GER pre-marking

1st the case-marker

→ no space for making prediction (errors)

→ slow learning

strong preference for suffixing in languages worldwide
(Cutler et al. 1985)

evidence for faster suffix learning in artificial-language experiments
(Polyanskaya et al. 2024; Ramscar 2013; St. Clair et al. 2009; Hoppe et al. 2020)

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

4. Role of obligatory subject expression

Claudia sah einen Hasen auf dem Feld.	Er hat Kohl gefressen.
Claudia viděla zajíce na poli.	Žral zelí.

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

4. Role of obligatory subject expression

Claudia sah einen Hasen auf dem Feld.	Er hat Kohl gefressen.
Claudia viděla zajíce na poli.	Žral zelí.

CZE kids encounter a lot of subject-free utterances (OV / VO)

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

4. Role of obligatory subject expression

Claudia sah einen Hasen auf dem Feld.	Er hat Kohl gefressen.
Claudia viděla zajíce na poli.	Žral zelí.

CZE kids encounter a lot of subject-free utterances (OV / VO)

Might these be helpful for faster learning of object-marking

A. ?

B. ?

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

4. Role of obligatory subject expression

Claudia sah einen Hasen auf dem Feld.	Er hat Kohl gefressen.
Claudia viděla zajíce na poli.	Žral zelí.

CZE kids encounter a lot of subject-free utterances (OV / VO)

Might these be helpful for faster learning of object-marking

A. through giving space for prediction error?

B. ?

WHY IS THE ACQUISITION OF THE GERMAN CASE SO LATE?

4. Role of obligatory subject expression

Claudia sah einen Hasen auf dem Feld.	Er hat Kohl gefressen.
Claudia viděla zajíce na poli.	Žral zelí.

CZE kids encounter a lot of subject-free utterances (OV / VO)

Might these be helpful for faster learning of object-marking

A. through giving space for prediction error?

B. through reducing processed information?

DuBois 1987 and later: *Preferred Argument Structure*

THANK YOU
FOR YOUR ATTENTION

FULL-PICTURE SELECTION (PREDICTABLE ROLES)	FULL-PICTURE SELECTION (UNPREDICTABLE ROLES)	PREDICTIVE SELECTION (PREDICTABLE ROLES)	PREDICTIVE SELECTION (UNPREDICTABLE ROLES)
Minor et al	the current study	Özge et al.	Kröger
	Dittmar et al	Minor et al	Treichelová & Smolík in prep
	Grünloh		
	Smolík		

Schipke et al
???