Zero argument indexing on verbs: Patterns and explanations

Laura Becker

University of Freiburg

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In a nutshell

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  - ☞ the more factors add up, the stronger the crosslinguistic tendencies
- source-oriented explanations as in Cristofaro (2021)

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‘then I will become an eel’ Sahaptin (Jansen 2010: 101,81,184)

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(3) làmìnà **wó** hùn
Lamina **3SG** come
‘Lamina will come.’ Bullom So (Childs 2011: 139)

Types of zero argument indexes

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- **absolute**
- **non-absolute**
  (paradigmatic)
  (allomorphic)

Types of zero argument indexes

Absolute zero: general absence of the index

set B marker (ABS)	
1SG	-oñ
2SG	-ety
3SG	**-Ø**
1PL.IN	-oñ=la
1PL.EX	-oñ=l(oj)oñ
2PL	-ety=la
3PL	-ob/-o’

(4) a. tyi k-pi’ty-ä-y-**ety**.
PFV A1-wait-DT-EP-**B2**
‘I waited for you.’

b. tyi y-il-ä-**Ø** wiñik x-ixik.
PFV A3-see-DT-**B3** man CL-woman
‘The woman saw the man.’

Ch’ol (Vázquez Alvarez 2011: 25, 21)

Types of zero argument indexes

Paradigmatic zero: the index is absent in combination with certain values of another category

(5) Ngawa jayi-**ngga**=**yi**
water give=**IMP**=**P:1SG**
'Give me some water'

(6) [...] nyangula-la ga-nggu=**yi**n=nga ngayiny-jirri ngurra-nggurra
[...] sometime-LOC take-POT=**A:2SG**.**P:1SG**=DUB 1SG.DAT-ALL camp-ALL
lurrbu
return
'[...] you'll take me back to my camp sometime'

Bilinarra (Meakins and Nordlinger 2013: 302,437,436)

Types of zero argument indexes

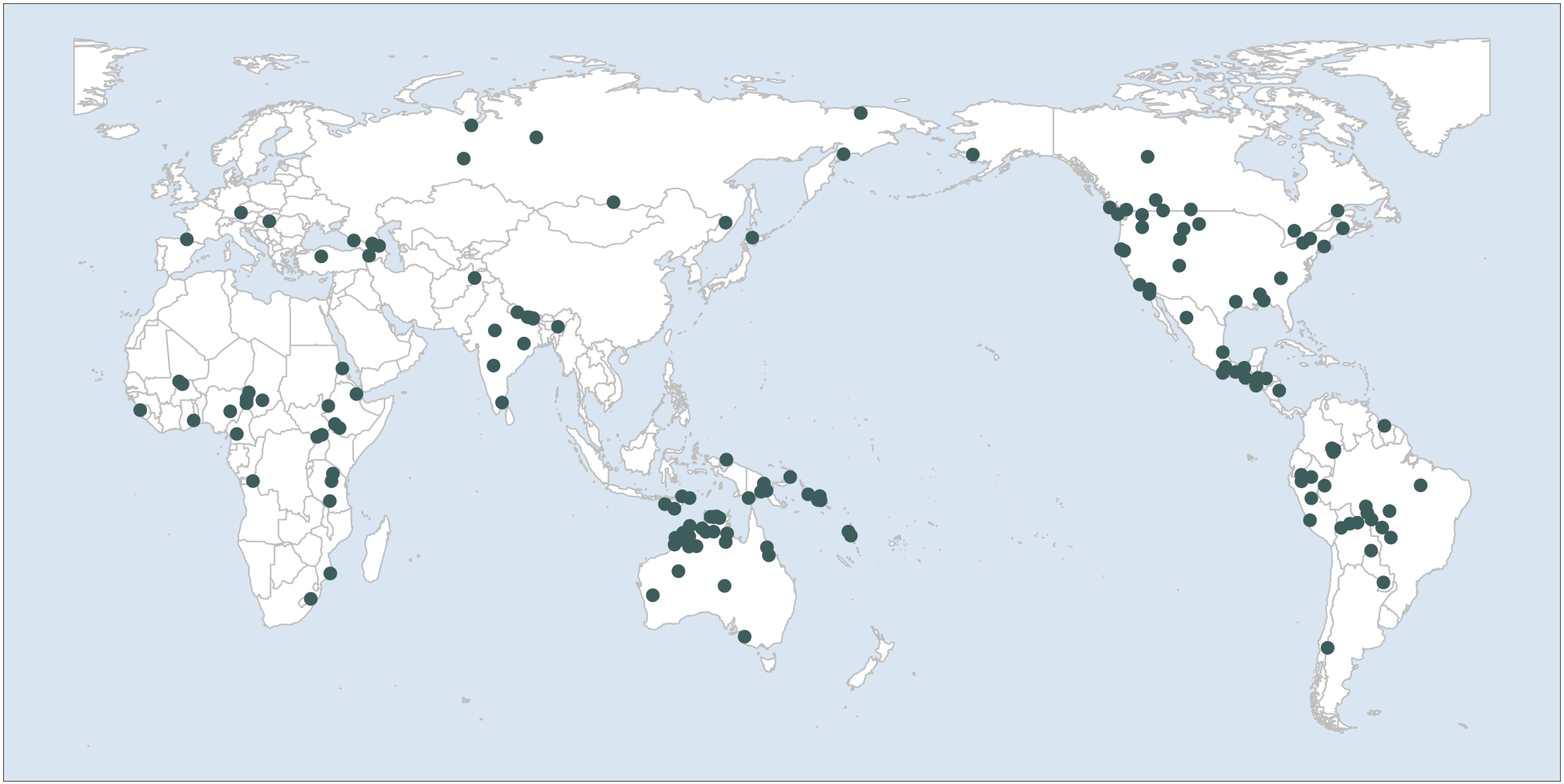
Allomorphic zero: the index is absent in certain inflection classes

(7) a. **ǐ**-wæt ‘he hit’
b. **ǐ**-jjæš ‘he entered’

(8) a. **Ø**-ùjəj ‘he went far away’
b. **Ø**-àwən ‘he goes up’ Tamashek (Heath 2011: 436)

Sample

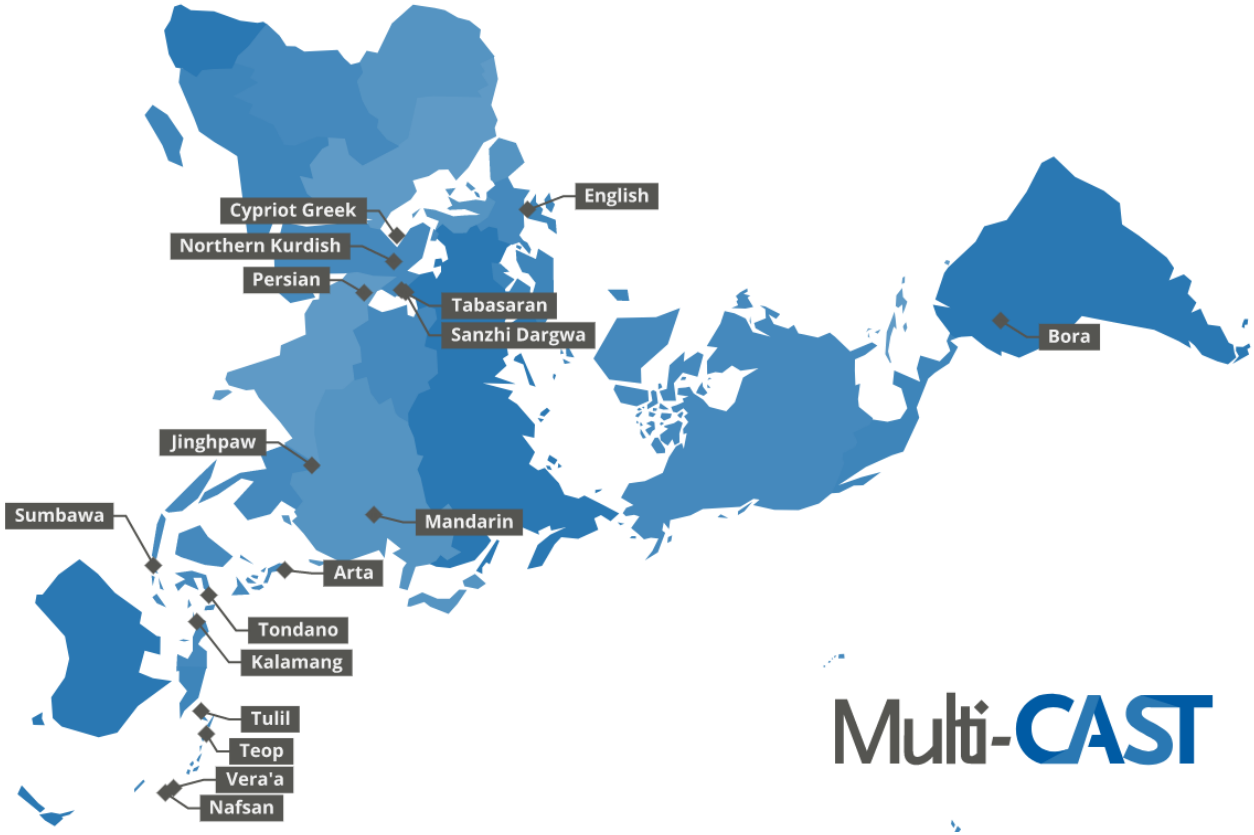
156 (out of 200) languages with argument indexes



MultiCAST

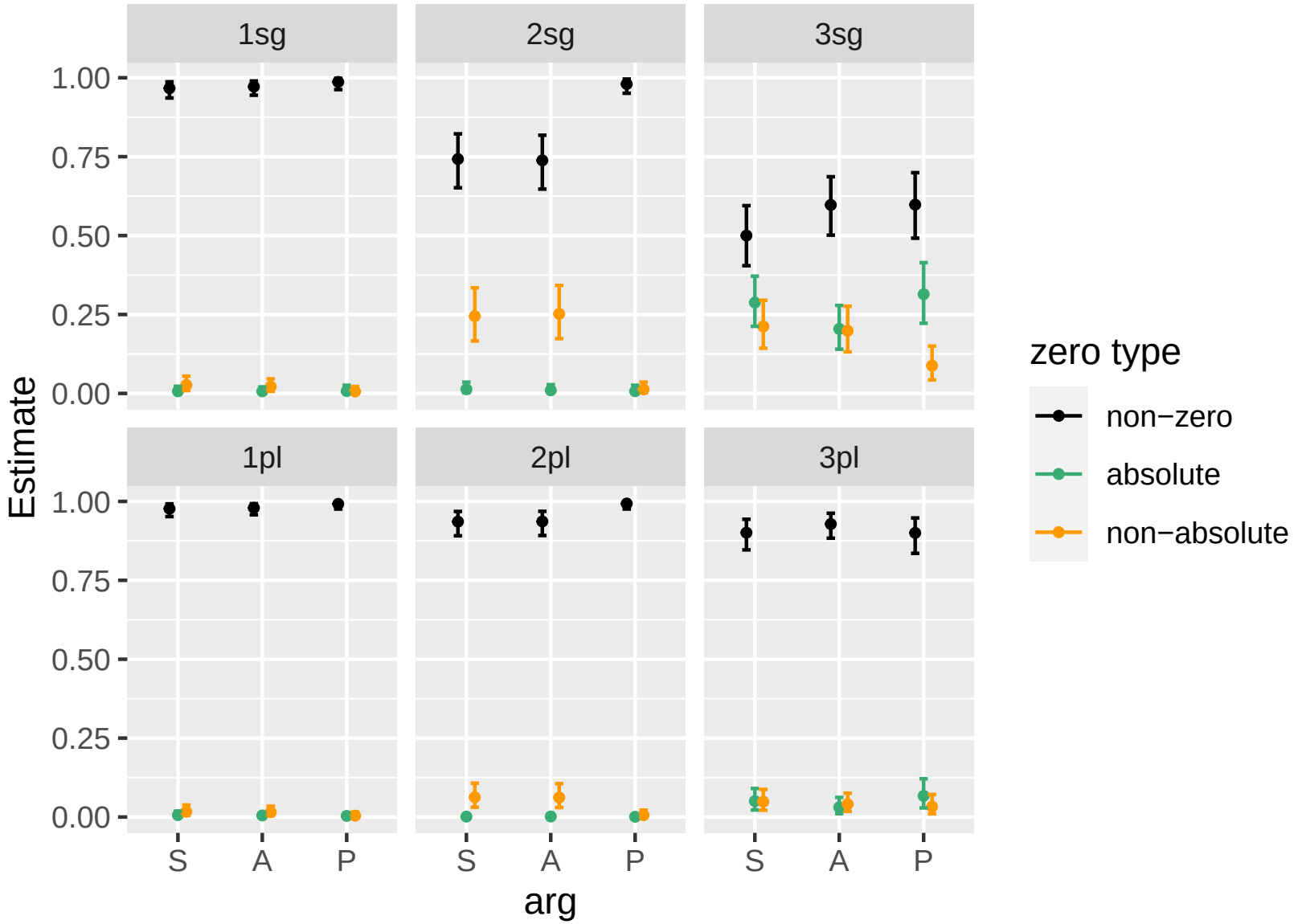
Multilingual Corpus of Annotated Spoken Texts (Haig and Schnell 2021)

- spontaneous spoken data (mostly monologic) from 17 languages (27 500 clause units)
- ! keeps track of discourse referents including pro drop



Crosslinguistic distributions

Modelling zero forms across person and arguments



Bayesian regression with phylogenetic and areal controls Guzmán Naranjo and Becker (cf. 2021)

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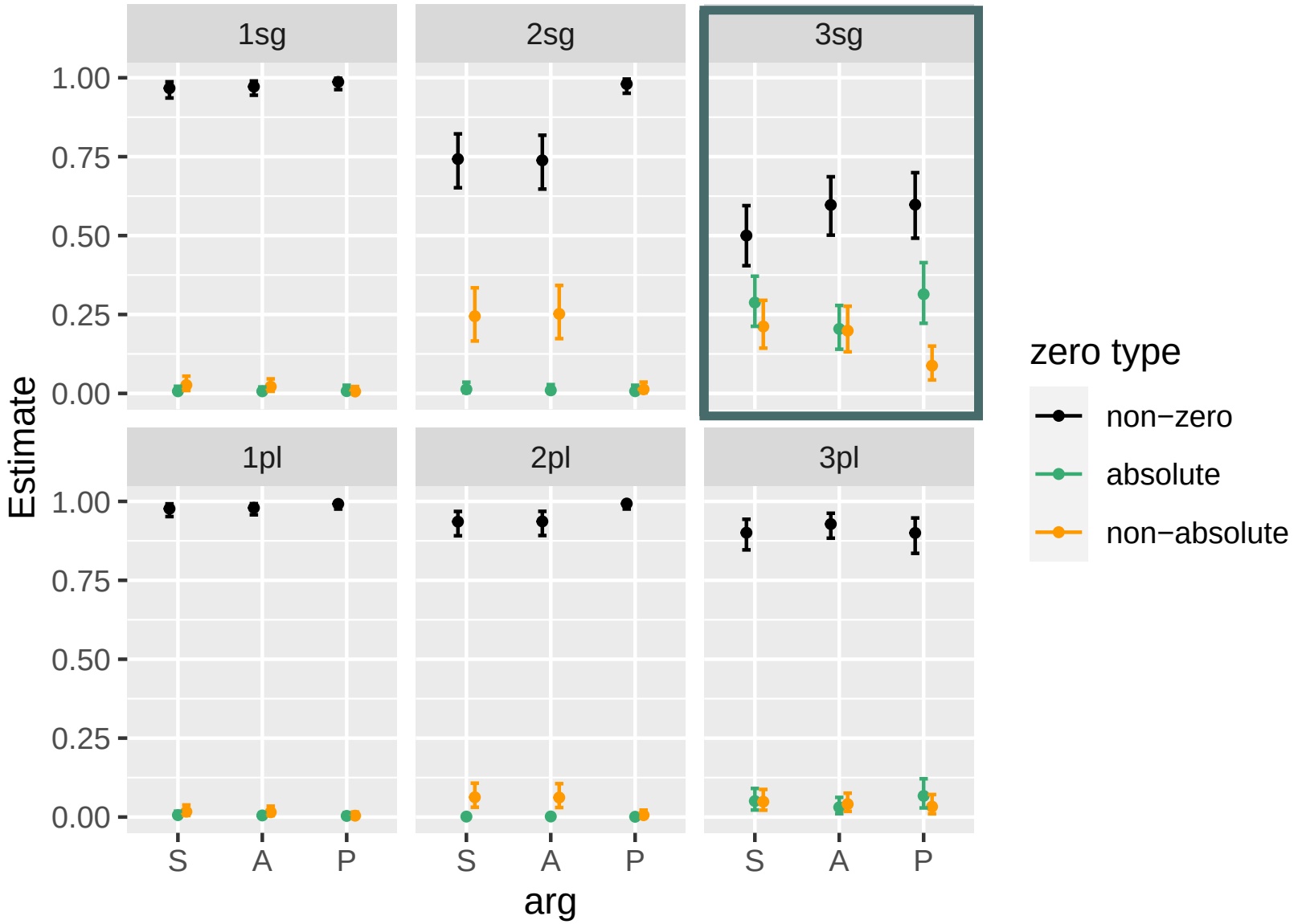

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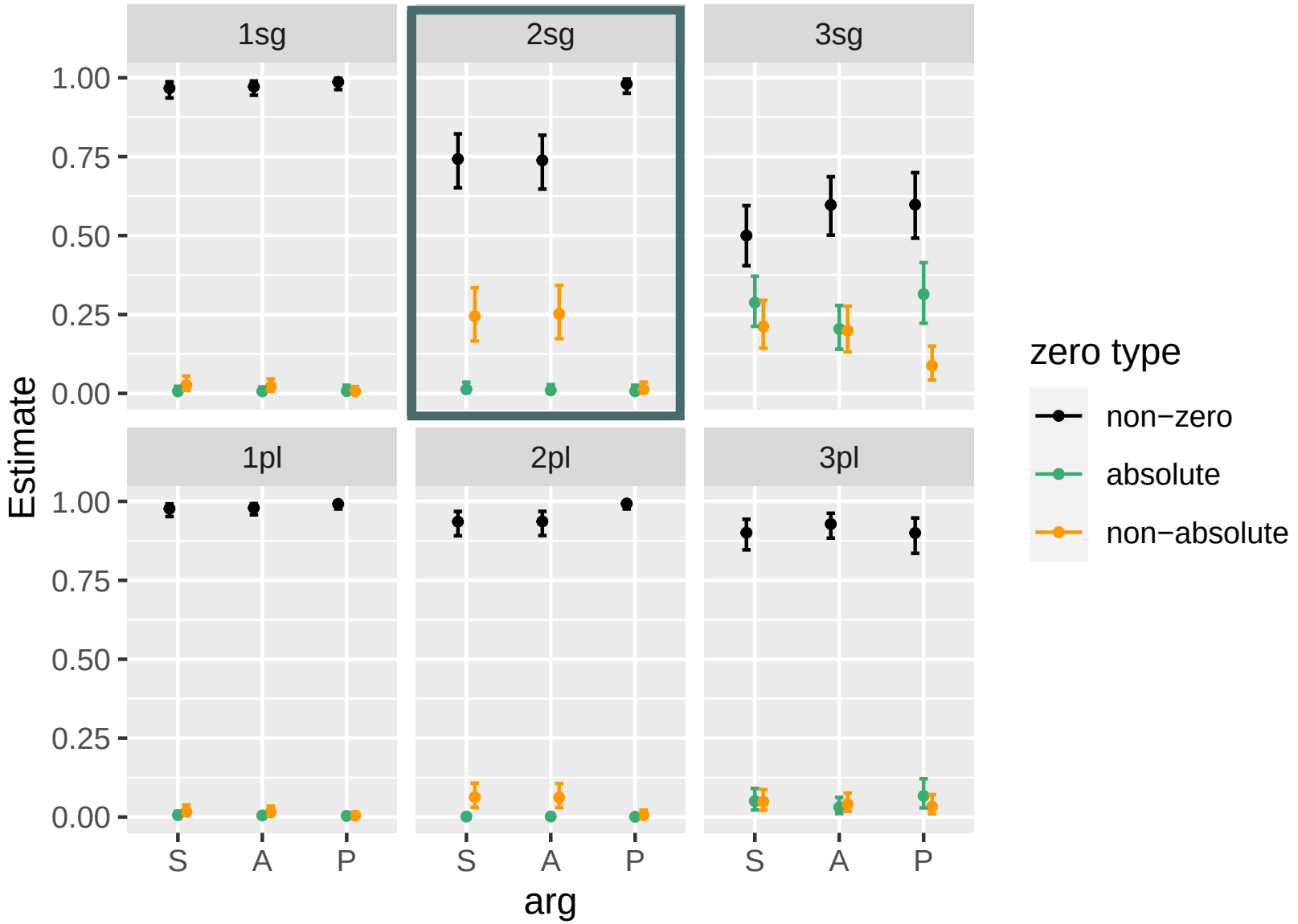

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Explaining the patterns:

Non-development rather than loss

Differential loss

There is no clear evidence that **phonetic reduction** would play an important role in the formation of 3rd person zero forms.

There is evidence for cases of **reanalysis** (Watkins 1962; Koch 1995), but this does not seem to be a common process either.

3 vs. 1, 2

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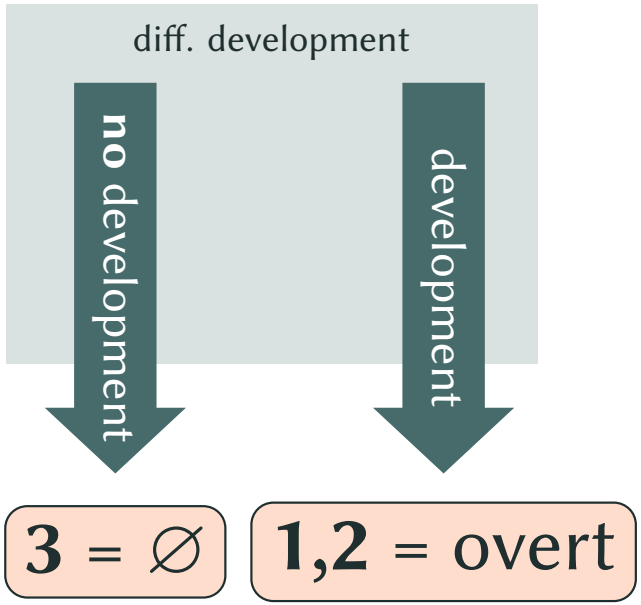

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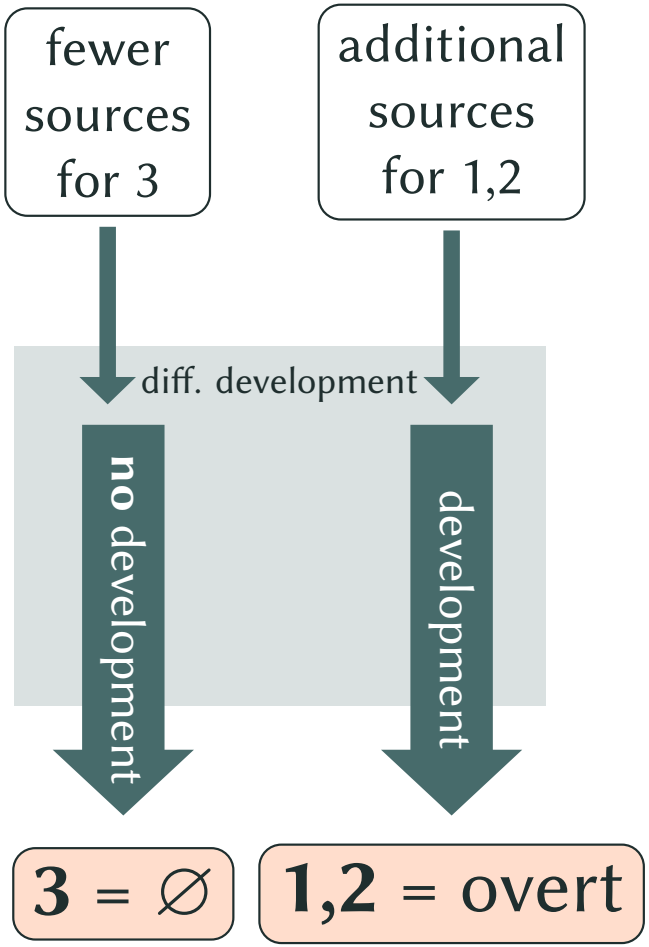
fewer sources for 3
additional sources for 1,2
diff. development
no development
development
3 = ∅
1,2 = overt

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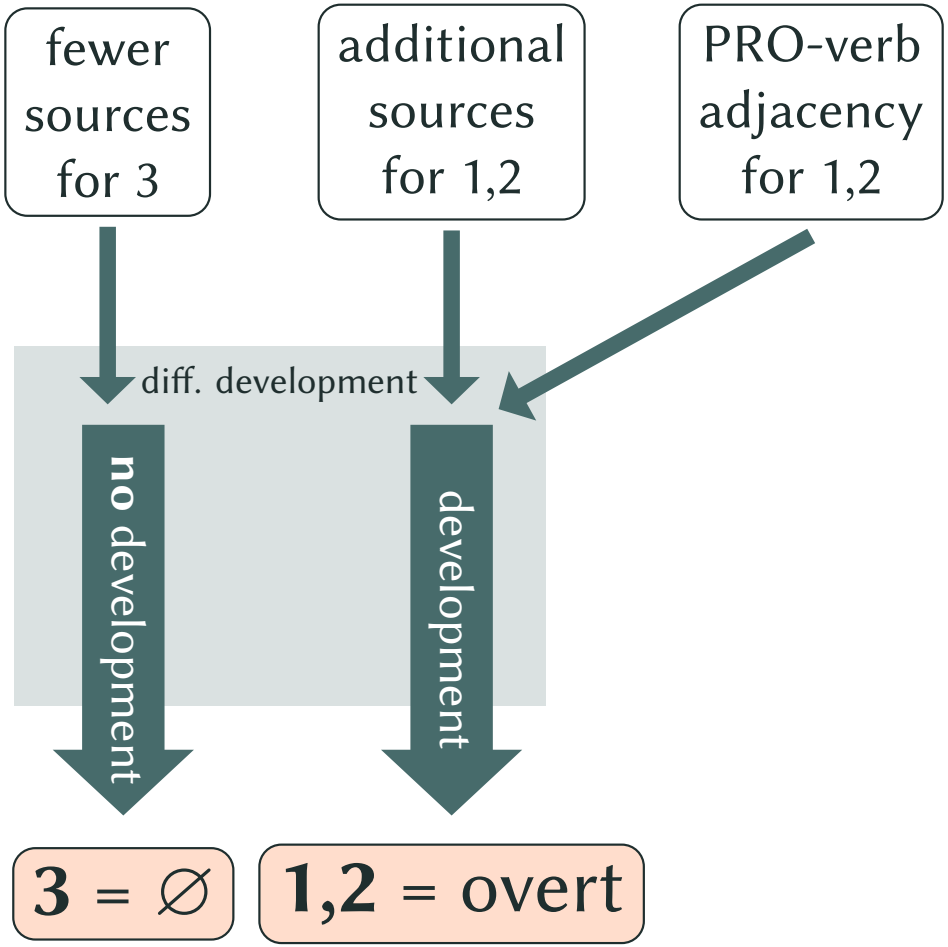
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PRO-verb adjacency for 1,2
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Fewer sources for 3 → differential development

- languages may not have third person pronouns

☞ only 1st and 2nd person pronouns developed into bound person indexes in Tabasaran (Lezgic) (Helmbrecht 1996; Bogomolova 2018)

	NOM	ERG	DAT
1SG	**uzu**		**uzuz**
2SG	**uvu**		**uvuz**
3SG	dumu	duʁu	duʁaz

	A	P	EXP/REC
1SG	-za	**-zu**	**-zuz**
2SG	-va	**-vu**	**-vuz**
3SG	-Ø	-Ø	-Ø

Additional sources for 1, 2 → differential development

cislocative markers > 1, 2 object indexes

(cf. Konnerth and Sansò 2021; Cristofaro 2021)

- a cislocative marker (‘hither’) develops into an object marker, but only for speech act participants

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(9) [...] e-nūt a-ka-prék a-monít abàng=ke saikél
[...] one-CLF:HUM.SG POSS-NMLZ-be.different POSS-man NPDL=TOP bicycle
nang=ardòn-si vàng-lò ...
CIS=ride-NF:RL come-RL ...
'[...] another person riding on a bicycle came, ...' Karbi (Konnerth 2015: 35)

(10) [...] **nang**=ke-che-arjū-lò pēi=pen pō
[...] **P:1/2**=IPFV-RR-ask-RL mother=with father
'[...] we are asking you, mother and father' Karbi (Konnerth 2015: 31)

PRO-verb adjacency for 1, 2 → differential development

- in the MultiCAST data, 1, 2 PRO occur more consistently adjacent to verbs than 3 PRO, especially for P arguments

☞ this may facilitate the development of indexes for 1, 2

	verb – PRO					
	S		**A**		**P**	
	N	prop	N	prop	N	prop
1	38	0.02	24	0.01	**100**	**0.35**
2	6	0.01	20	0.03	**92**	**0.81**
3	30	0.004	12	0.002	**713**	**0.09**

PRO-verb adjacency for 1, 2 → differential development

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	PRO – verb					
	S		**A**		**P**	
	N	prop	N	prop	N	prop
1	**938**	**0.55**	**917**	**0.49**	43	0.15
2	**212**	**0.35**	**181**	**0.27**	19	0.17
3	**1777**	**0.21**	**1020**	**0.21**	84	0.01

P vs. S, A

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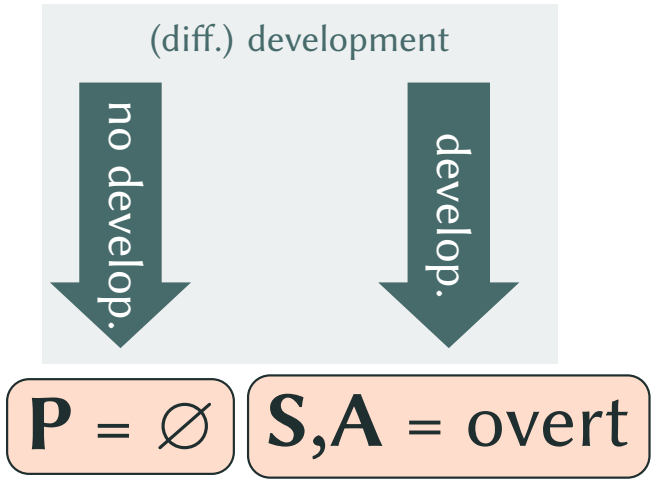

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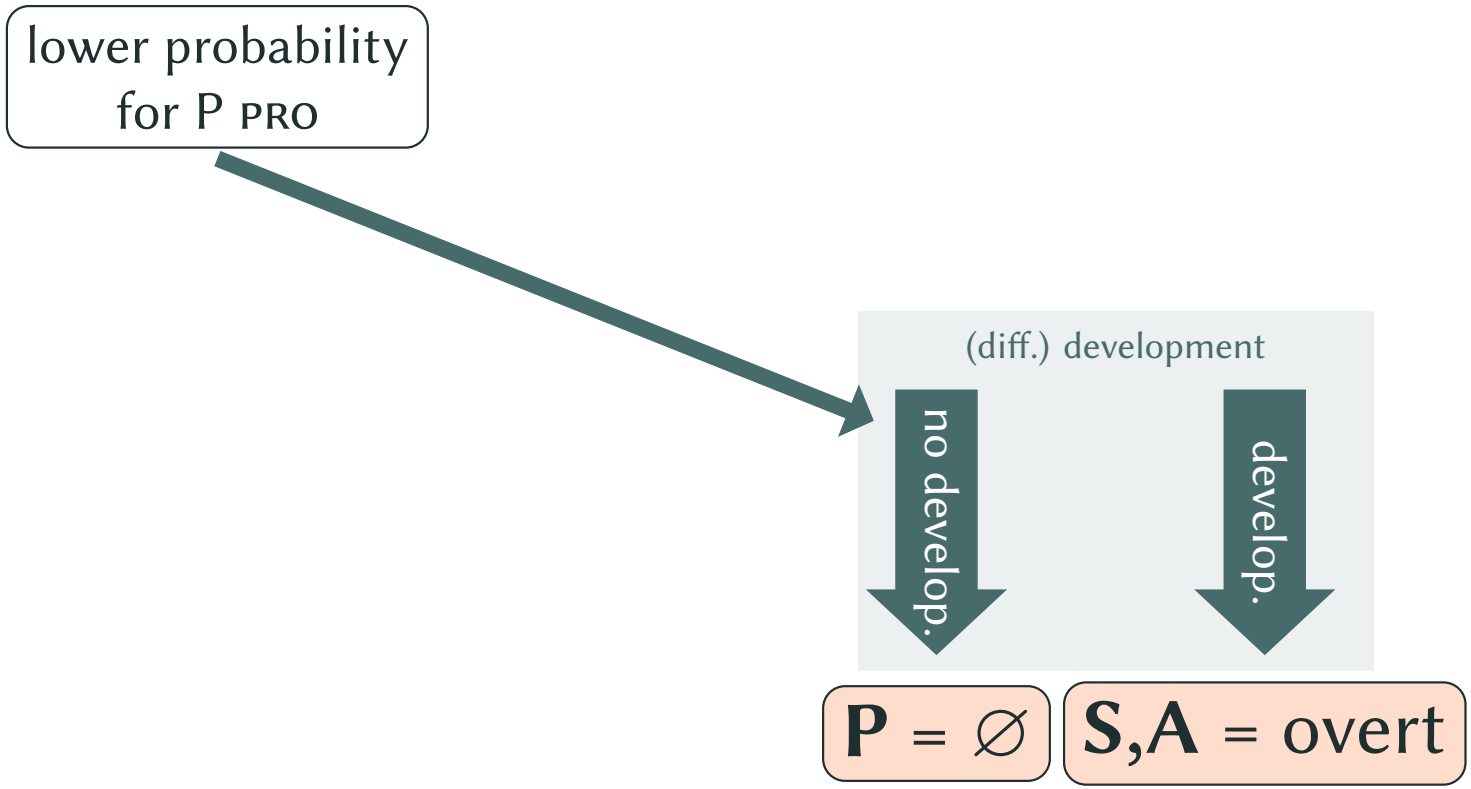
lower probability
for P PRO
(diff.) development
no develop.
develop.
P = ∅
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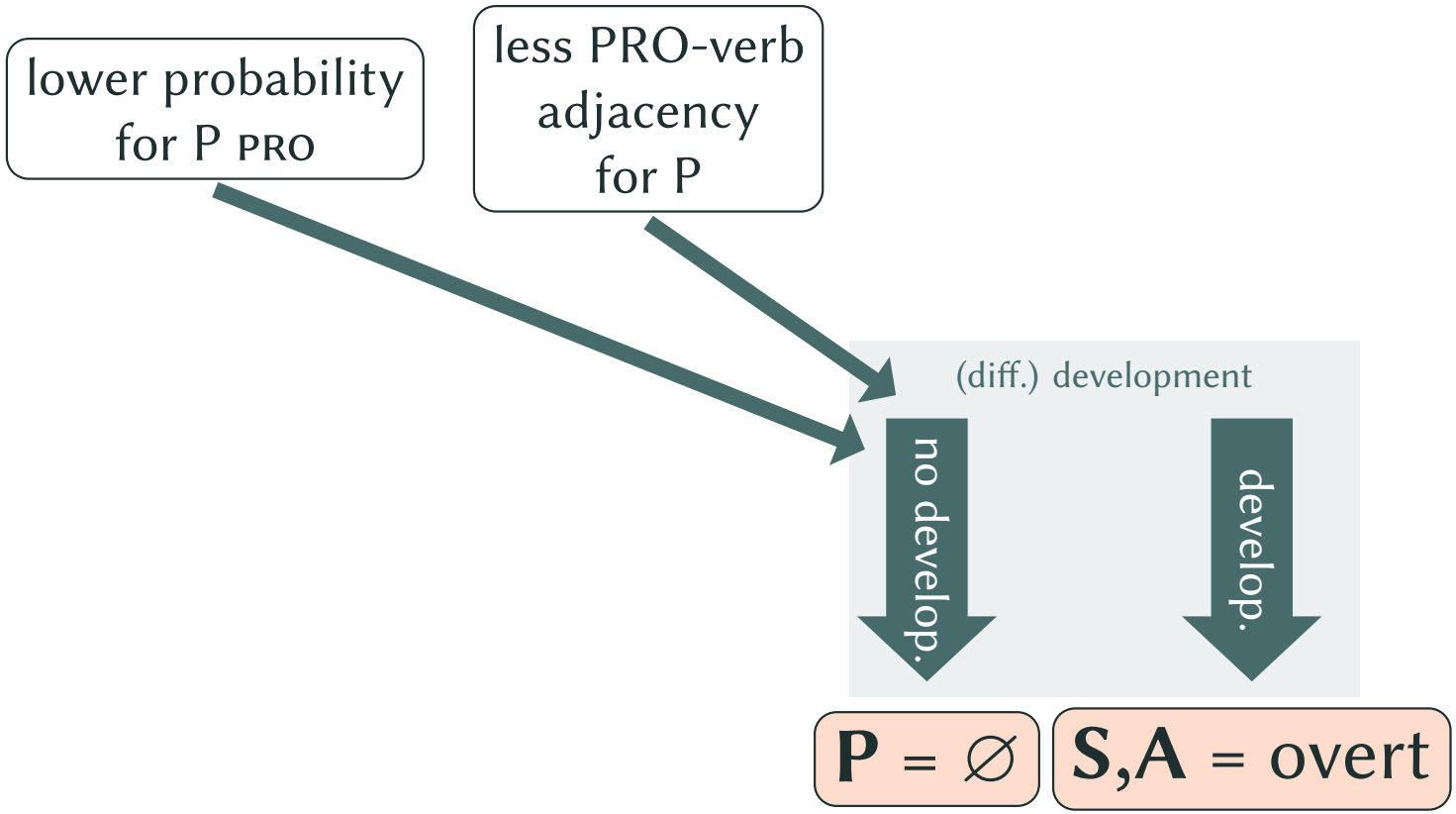
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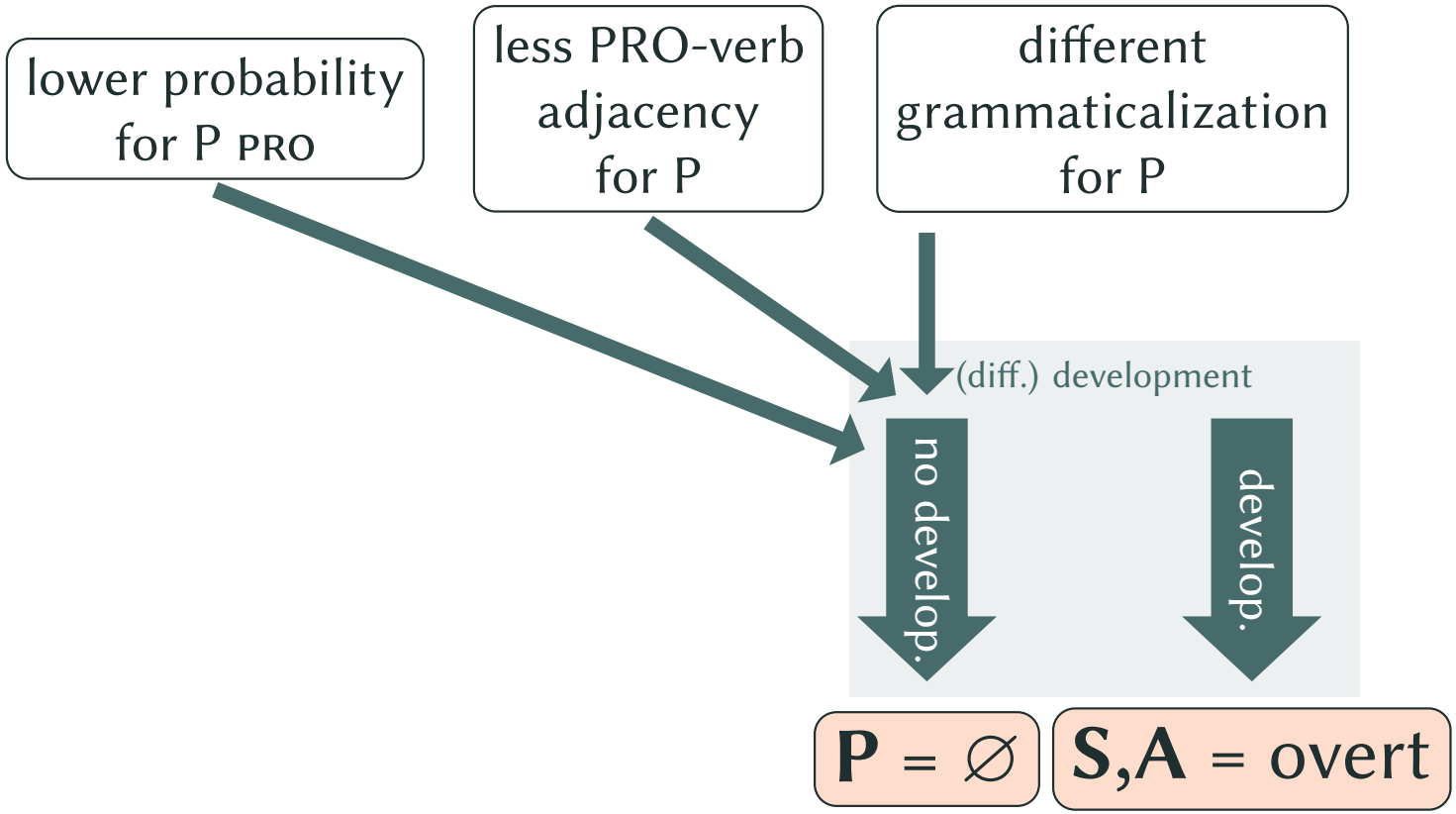

lower probability for P PRO
less PRO-verb adjacency for P
different grammaticalization for P
(diff.) development
no develop.
develop.
P = ∅
S,A = overt

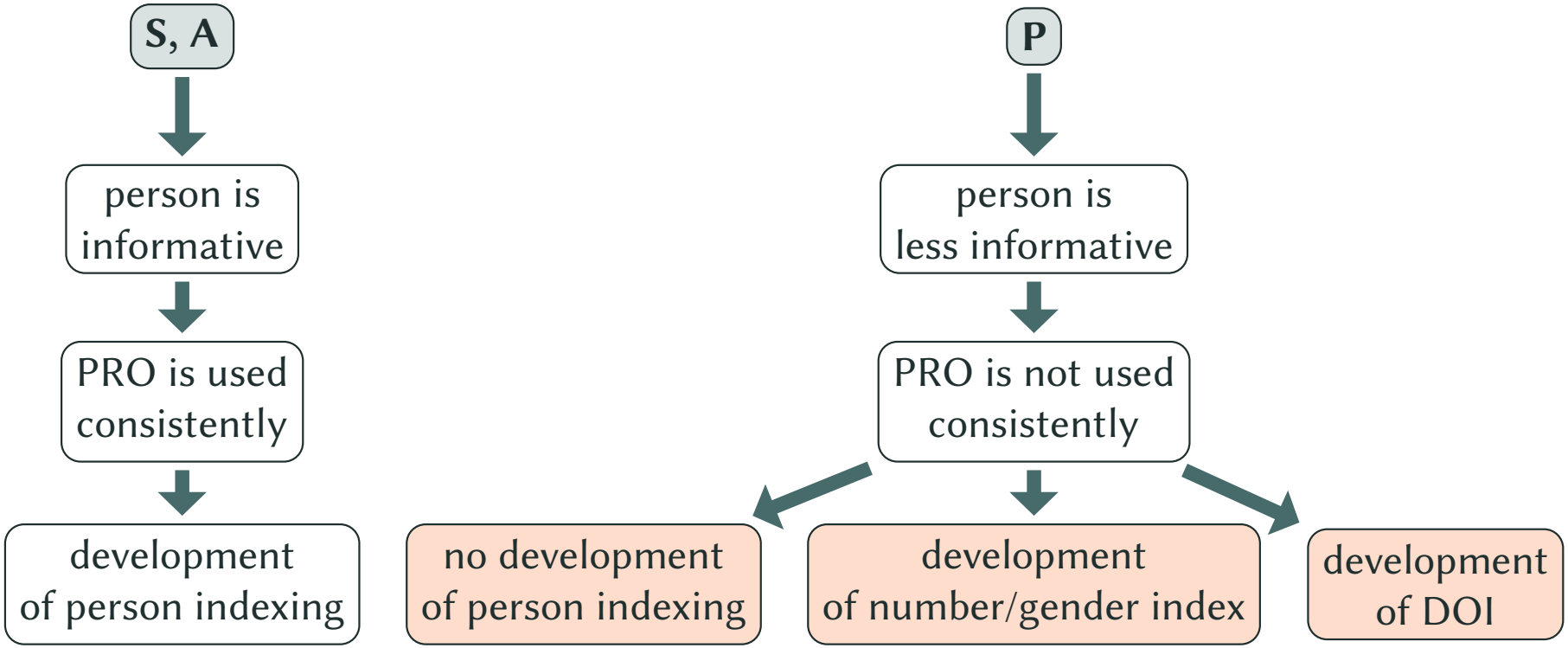
Lower probability of P PRO (3) → non-development

- in the MultiCAST data, the proportion of 3 PRO is lower for P compared to S and A

		S		A		P	
3	pro	**2071**	**(0.25)**	**1150**	**(0.24)**	**785**	**(0.10)**
	∅	**3145**		**2798**		**1347**	
	lex	**2965**		**927**		**5856**	

Different grammaticalization of P → non-development

- Haig (2018) argues for a fundamental difference between the development of S/A and P indexes



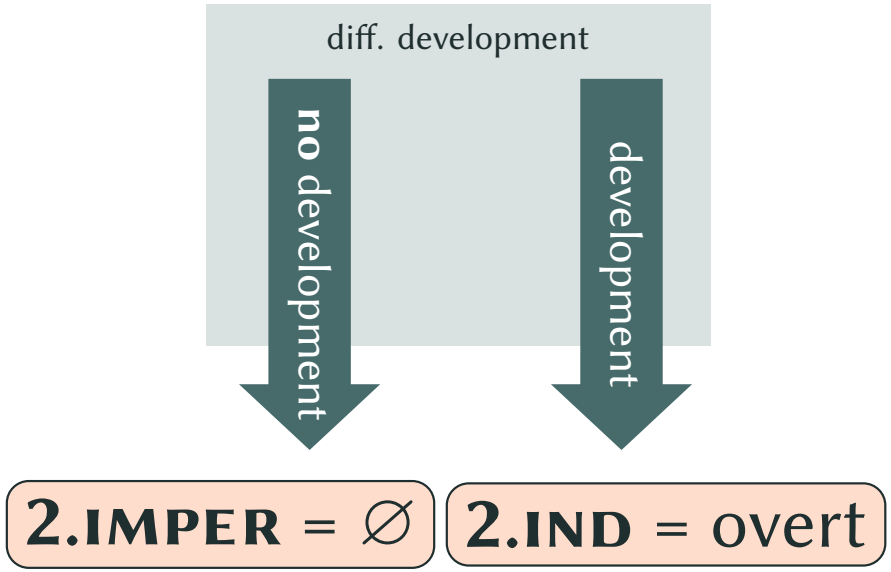
2(SG) imperative

vs.

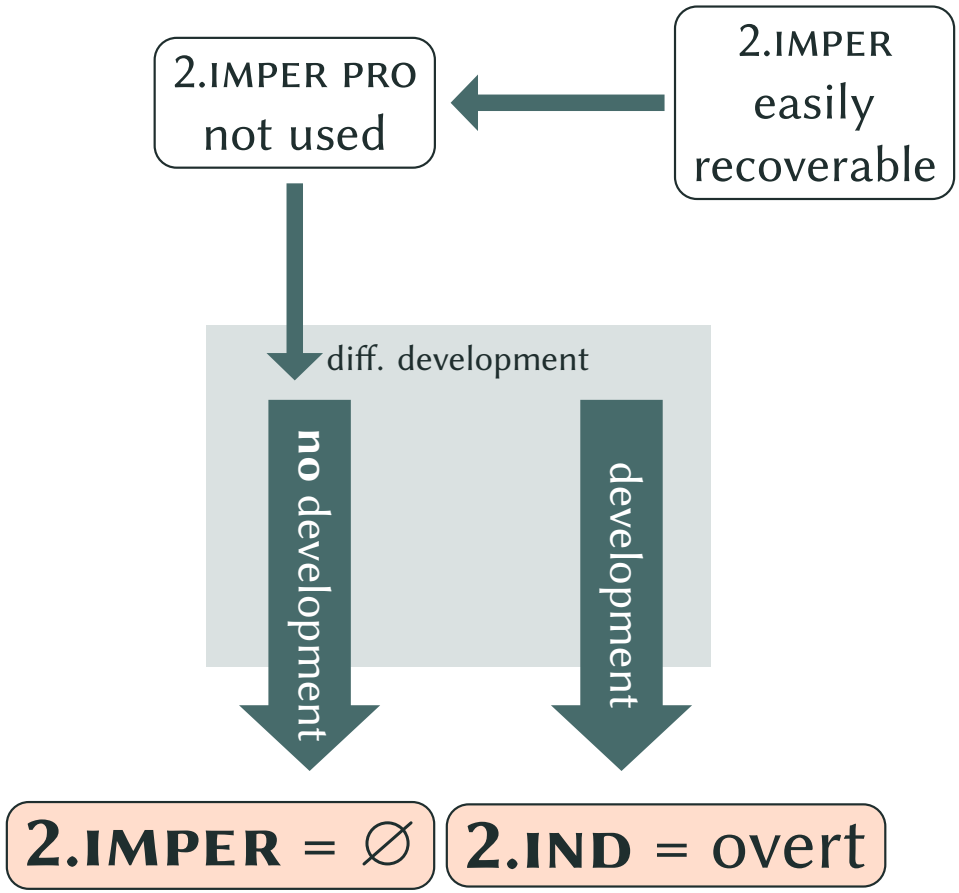
2(SG) indicative

2(SG) imperative vs. 2(SG) indicative

2.IMPER easily recoverable



2(SG) imperative vs. 2(SG) indicative



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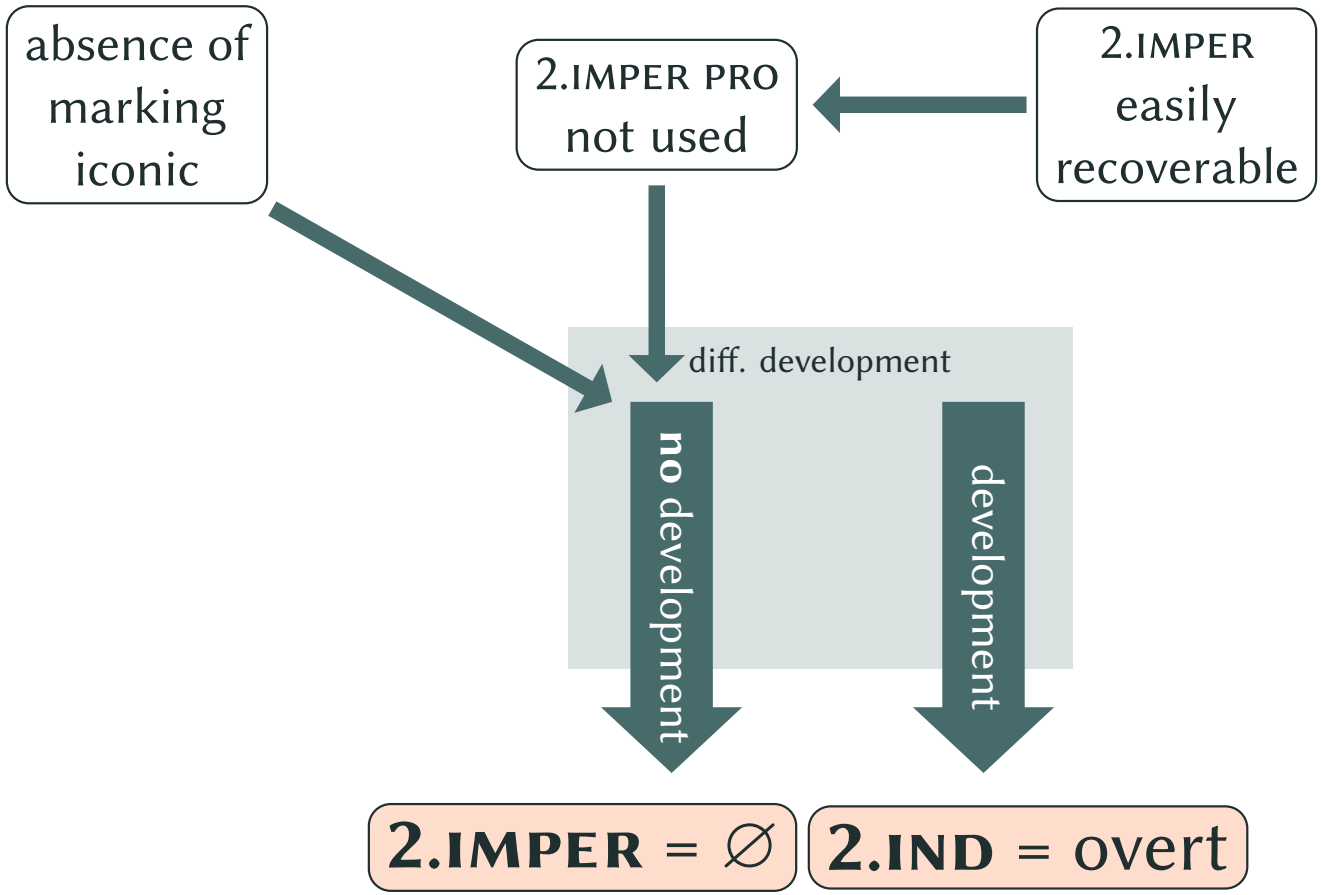

PRO not used for 2sg.imper → non-development

- in most languages, the subject of IMPER.2SG does not have to be expressed (Aikhenvald 2010: 92, Sadock and Zwicky 1985: 171)

- the MultiCAST data confirms this:

☞ imperative forms are indeed very unlikely to occur with a 2nd person pronoun in the same clause

	overt PRO	NO PRO
SG	37	247 (**0.87**)
PL	10	29 (**0.74**)

Iconicity → non-development

- **shortest** possible form → **directness**, **urgency**
  (Aikhenvald 2010: 46)

- in 30% of the languages from the sample, bare stems can be used as imperative forms

Conclusion

Multiple factors

- many different factors contribute to the distribution of zero argument indexes
- the more factors add up and do not cancel each other out, the stronger the crosslingusitic trend

☞ no single functionally motivated synchronic explanation along the lines of coding efficiency

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Differential non-development > zero

- non-development scenario most relevant for the development of (absolute) zero argument indexes
  - ☞ 3rd person > 1st, 2nd person
  - ☞ P > S, A
  - ☞ 2SG.IMP > 2SG.IND

Thank you!

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