



A typology of differential argument indexing

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12 May 2023



Overview

- Flashback: Differential indexing in Chechen and Kamang
- Typology of Differential Argument Marking / Indexing
 - Background
 - Our work-in-progress
 - Sample, Method and Research Questions
 - Preliminary results/example(s) of differential indexing systems
- Concluding remarks

Flashback (i): DAI in Chechen

Chechen (Nakh-Daghestanian. Molochieva et al. 2022)

- k'ant-as quor b-u'u boy
(V)-ERG pear(B).ABS B-eat.PRS
'The boy eats the pear.'

- k'ant-ana quor (∅-)go
boy(V)-DAT pear(B).ABS see.PRS
'The boy sees the pear.'

ca. 30 % of verbs index gender of S/P
(mostly but not all V-initial)

Non-indexing V-initial verbs are
slightly more frequent in discourse
(Walker & Van Lier 2023)

Flashback (ii): DAI in Kamang

- Different prefix paradigms:

/a/-series **/o/-series** **/e/-series** ...

1SG	<i>na-</i>	<i>no-</i>	<i>ne-</i>
2SG	<i>a-</i>	<i>o-</i>	<i>e-</i>
3	<i>ga-</i>	<i>wo-</i>	<i>ge-</i>
CMN	<i>ta-</i>	<i>to-</i>	<i>te-</i>
1PL.EXCL	<i>ni-</i>	<i>nio-</i>	<i>ni-</i>
1PL.INCL	<i>si-</i>	<i>sio-</i>	<i>si-</i>
2PL	<i>i-</i>	<i>io-</i>	<i>i-</i>



Different predicate classes

- Fixed prefix: S/P always indexed
- Fixed zero: S/P never indexed
- Differential indexing of S/P
 - Zero vs. prefix
 - Prefixes of different series

Flashback (ii): DAI in Kamang

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ge-tak
'3rd runs'

∅-tak
'3rd/2nd/1st
run(s)'

ga-faafa
'search.for [someone]'

∅-faafa
'search.for [something]'



Flashback (ii): DAI in Kamang

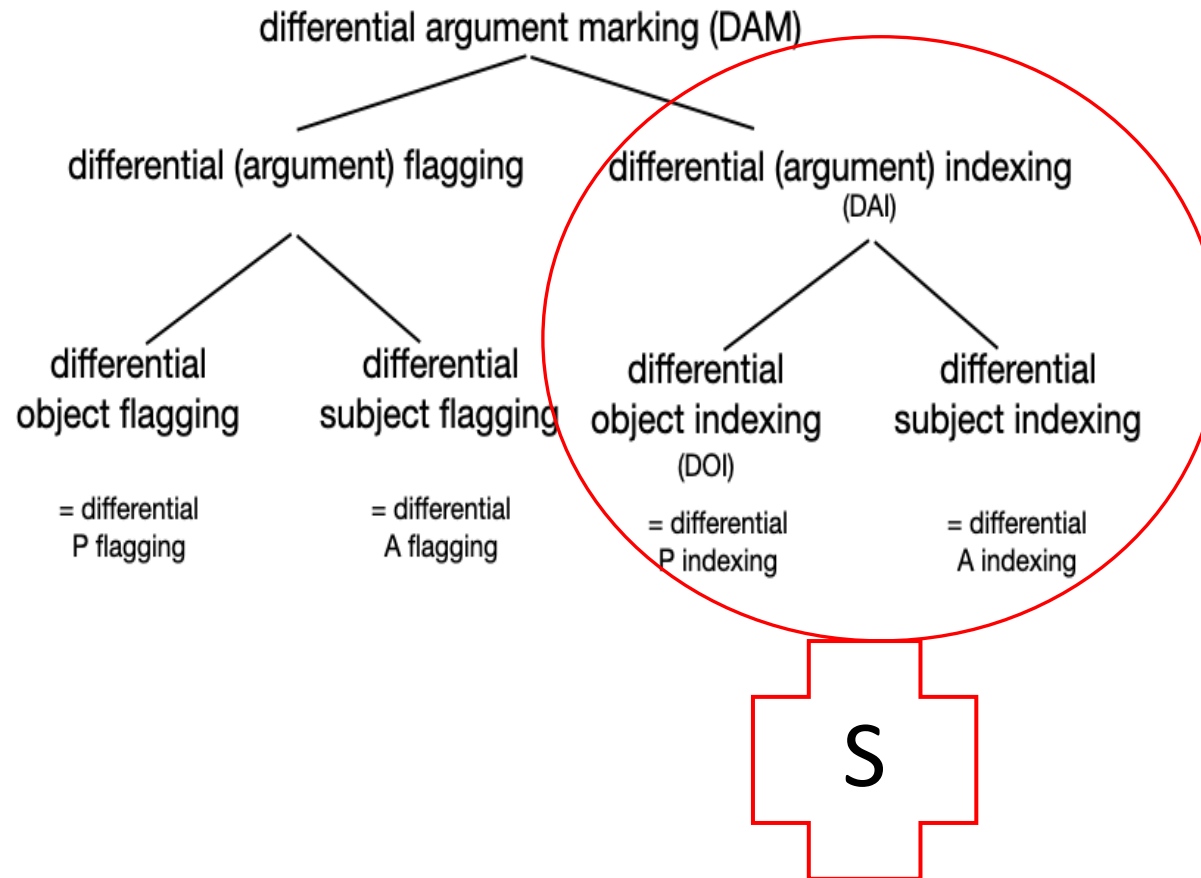
- Qualitative corpus analysis shows that different prefix paradigms respond to different conditioning factors
 - /e/-series: topical, non-pronominal S arguments
 - /o/-series: inanimate, non-topical, non-pronominal P arguments
 - /a/-series: animate, topical, non-overt S/P arguments



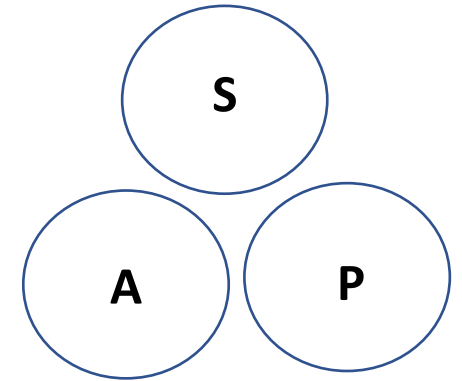
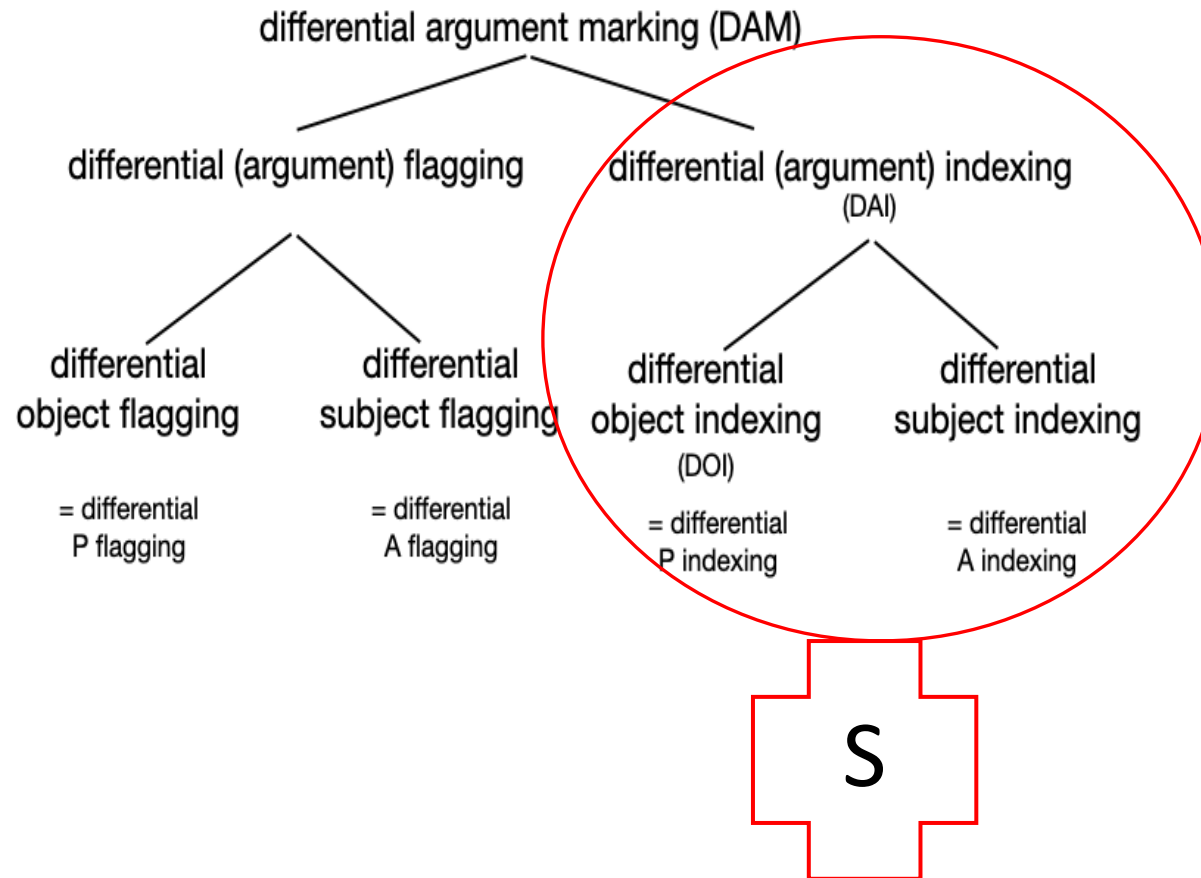
Lexical and other factors in DAI

- In Chechen, DAI (gender) is conditioned by lexical factors only
- In Kamang, DAI (person/number) is conditioned by lexical and other factors (depending on prefix series)
- Expected:
 - DAI systems conditioned by non-lexical factors only
 - Different DAI sub-systems within single language

Typology of DAM/DAI: background (Haspelmath 2023)



Typology of DAM/DAI: background (Haspelmath 2023)



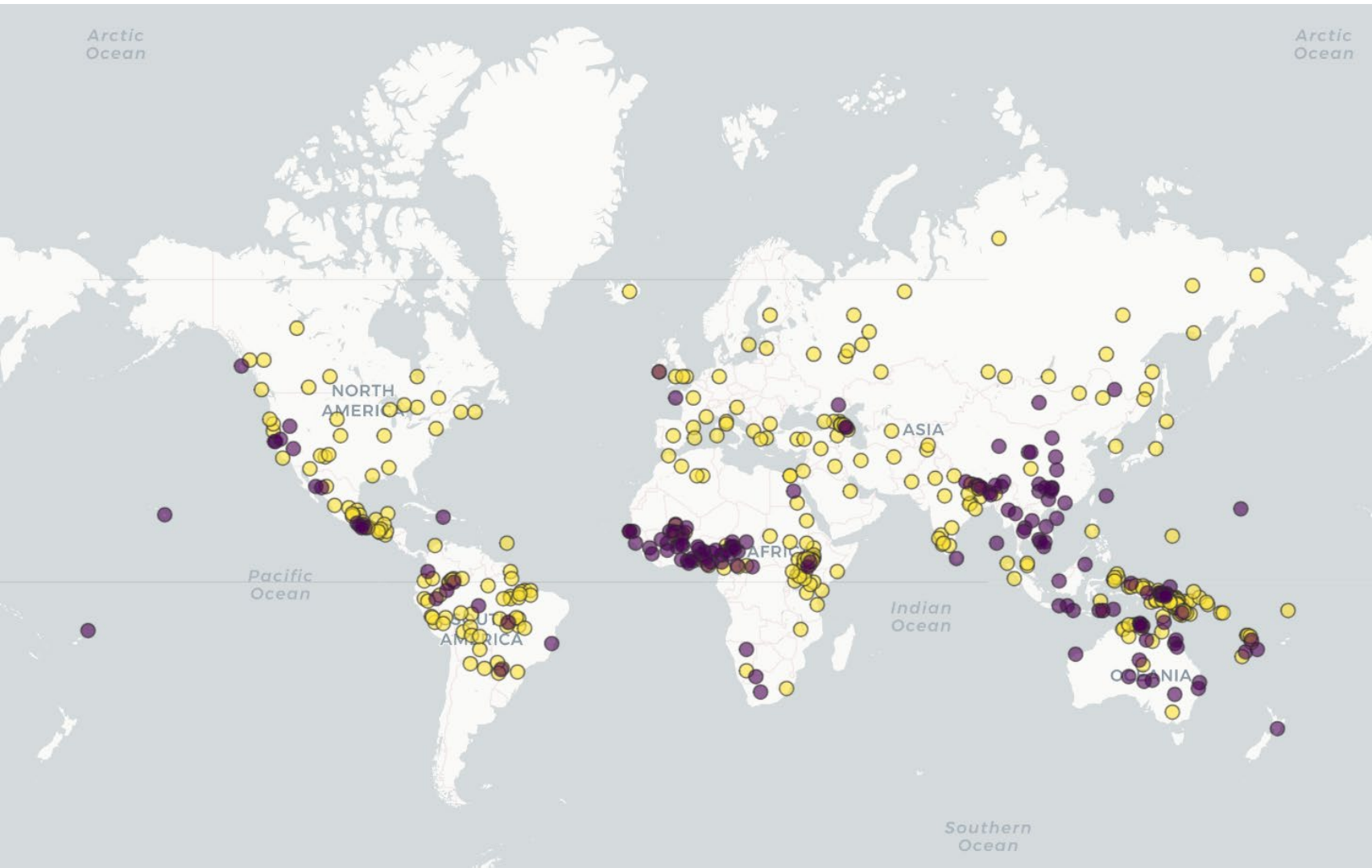
Typology of DAI: flagging vs. indexing (Haspelmath 2023)

- **Generalization 1: Lower-ranked** roles (P) tend to get **extra flagging** when the nominal is referentially ***prominent*** (definite, animate, topical, ...), and **higher-ranked** roles (A) tend to get **extra flagging** when the nominal is ***non-prominent*** (indefinite, inanimate, focal, ...)
- **Generalization 2: All arguments** tend to get **extra indexing** when the nominal is referentially **prominent**.

Typology of DAI: other factors

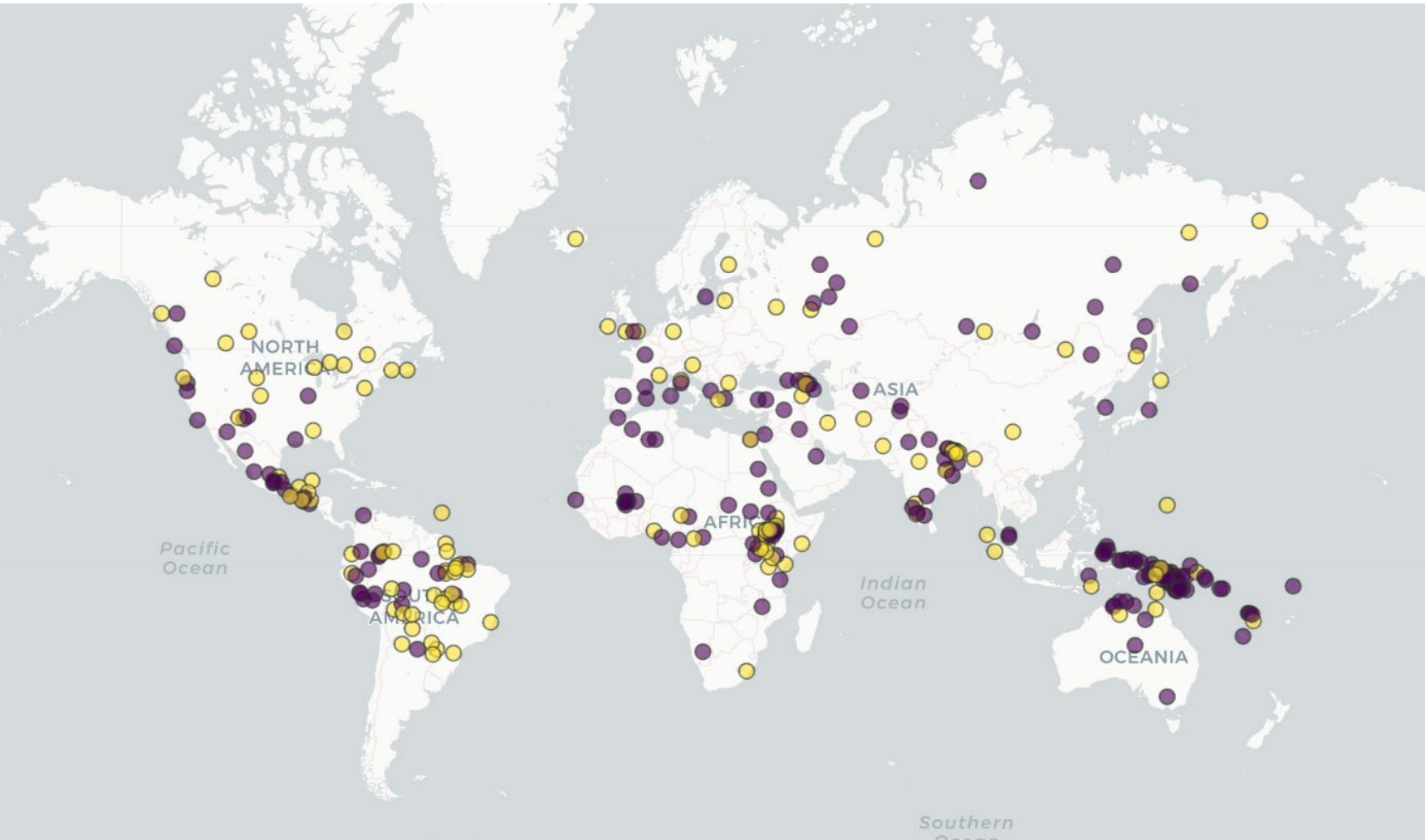
- Haspelmath ('23) mentions only argument-related factors
 - Semantic, e.g. animacy
 - discourse-based: definiteness, topicality
- We also take into account:
 - TAME+P
 - predicate classes (=lexical restrictions, cf. Fedden's 2019 "sporadic agreement")
 - co-occurrence restrictions (expression of independent pro/N argument)
 - more (systematic) data

Typology of DAI: our sample



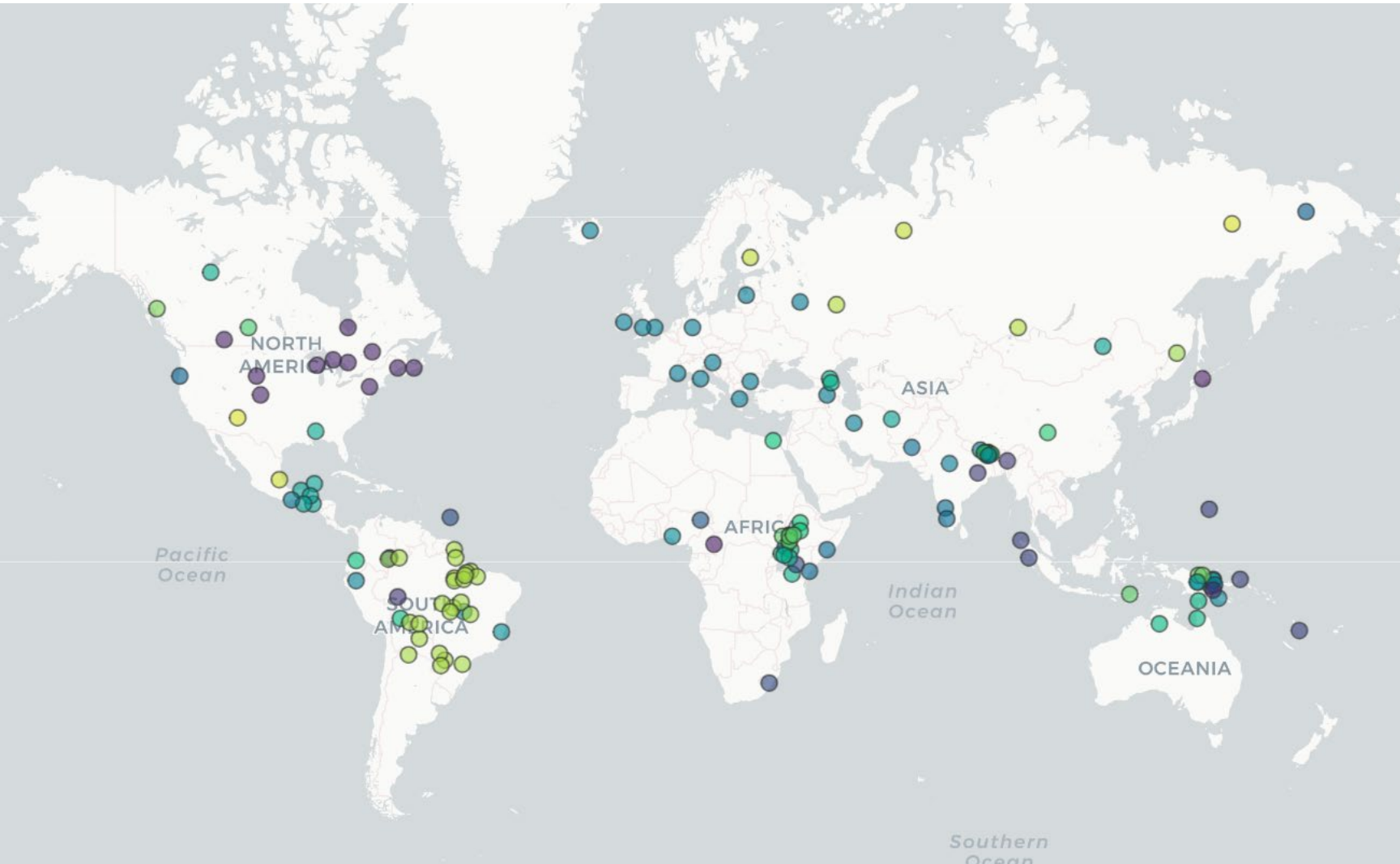
- AutoTyp (Bickel & Nichols 2022): Agreement Module: 528 languages
 - Agreement (n=370)
 - No agreement (n=158)

Typology of DAI: our sample



- AutoTyp (Bickel & Nichols): Agreement Module: 370 languages with S/A/P agreement
- DAI (n=152)
- No DAI ('default' agreement) (n=218)

Typology of DAI: our sample



Languages with DAI
(n=152), colour-
coded by stock
(n=50)

Our sample: unique
stock + branch = 85
languages
(incl. a sign language; no
sign languages in the
original agreement module
of AutoTyp)

So far: 38 languages

Typology of DAI: our variables

- Argument role (S, A, P)
- Feature(s) indexed (person, number, gender)
- Form (pre/suf/infix, pro/enclitic, suppletion, ablaut)
- Type (none, default, symmetrical/asymmetrical DAI)
- Condition/domain
 - Person/number
 - Animacy/humanness
 - Definiteness
 - Specificity
 - Topicality
 - Focus
 - Co-argument
 - TAME
 - Polarity
 - Predicate class
 - Other/unknown

Not included:
(purely) phonologically
conditioned DAI

Research Questions

- Different patterns per argument role?
 - S/A less likely to be DAI than P?
- Pairing of argument-related conditions/values with argument role
 - High/low prominence
 - Person values
- Role of predicate classes
- Co-occurrence restrictions?
- Other questions (t.b.c)
 - Correlations with (a)symmetry and/or form/position
 - Different patterns for different indexing features? (person vs. number/gender)

Preliminary results

- S/A/P DAI frequency

- Count of languages. For languages with multiple splits, one value is included according to the hierarchy asym>sym>default>none

	S	S only	A	S/A	A only	P	P only
DAI	36	21	33	18	15	25	22
Asym/sym	33/3	17/4	33/0	16/2	14/1	25/0	22/0
Default	2	1	5	5	2	2	0
none	0	0	0	0	0	11	11
TOTAL	38	22	38	23	35	38	33

- differential systems are overwhelmingly asymmetrical (include a zero somewhere)
- Highest rate of DAI: $S > A > P$
 - BUT: P is least likely to be indexed in this DAI sample

Preliminary results

Pairing of argument-related conditions/values with argument role

- High/low prominence (cf. Haspelmath)
- How many languages include prominence conditions in their DAI systems? (animacy, definiteness, specificity, topicality, focus)
 - P and S/P: 21% 8/38
 - A and S/A: 13% 5/38
 - S only: 8% 3/38
 - Other: 4% 1/38
- NB: in asymmetrical systems, high prominence = overt, low = zero

Preliminary results

- **HOWEVER: 'Classic' DAM (i.e., prominence-only system) is rare:**
 - Alto Perené P person/number indexing (suffix/zero)
 - Also has split S & DAI-A (word order)
 - Kalapalo S/P number indexing (suffix/zero)
 - Also has asymmetrical person/number S indexing (person);
 - Also has asymmetrical person/number P indexing (person & co-argument)
 - Oksapmin P person indexing (prefix/zero)
 - Also has asymmetrical number S/A indexing (TAME)
 - Sheko S/A indexing (enclitic/proclitic (TAME))
 - No P indexing

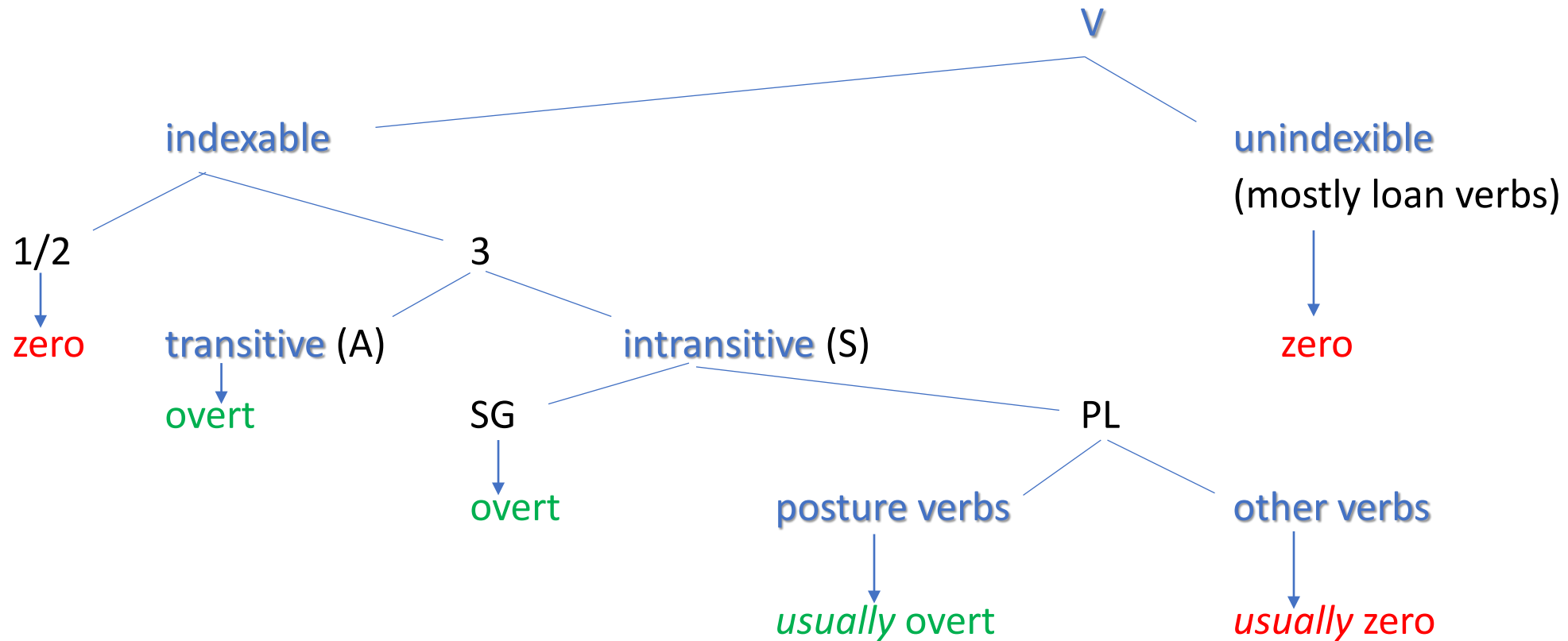
Preliminary results

Pairing of argument-related conditions/values with argument role

- Person values:
 - 3rd person is most likely to be zero:
 - South Efate: 1/2 P= overt; 3SG = mostly \emptyset
 - but there are rare exceptions:
 - Ese Eja: 1/2 S/A = \emptyset ; 3= mostly overt

Example of DAI system (i)

- Ese Ejja: S/A person indexing (Paco-Tacanan, Bolivia; Vuillermet 2012)



Preliminary results

Role of predicate classes (frequency)

- 19 languages have predicate class restrictions
 - A and S/A: 11
 - Verb class: semantic (active/stative; ‘verbs of mental transfer’)
 - Verb class: arbitrary (‘prefixing verbs’; ‘*make* and *search*’)
 - Verb class: frequency (‘common vs less common’)
 - P and S/P: 11
 - Verb class: semantic (active/stative; ‘cut and break verbs’)
 - Verb class: arbitrary (‘class 1, class 2, class 3, class 4’; ‘not *see* or *hear*’)
 - S only: 13
 - Verb class: semantic (active/stative/(middle): 9)
 - Verb class: arbitrary (‘class 1, class 2, class 3, class 4’)

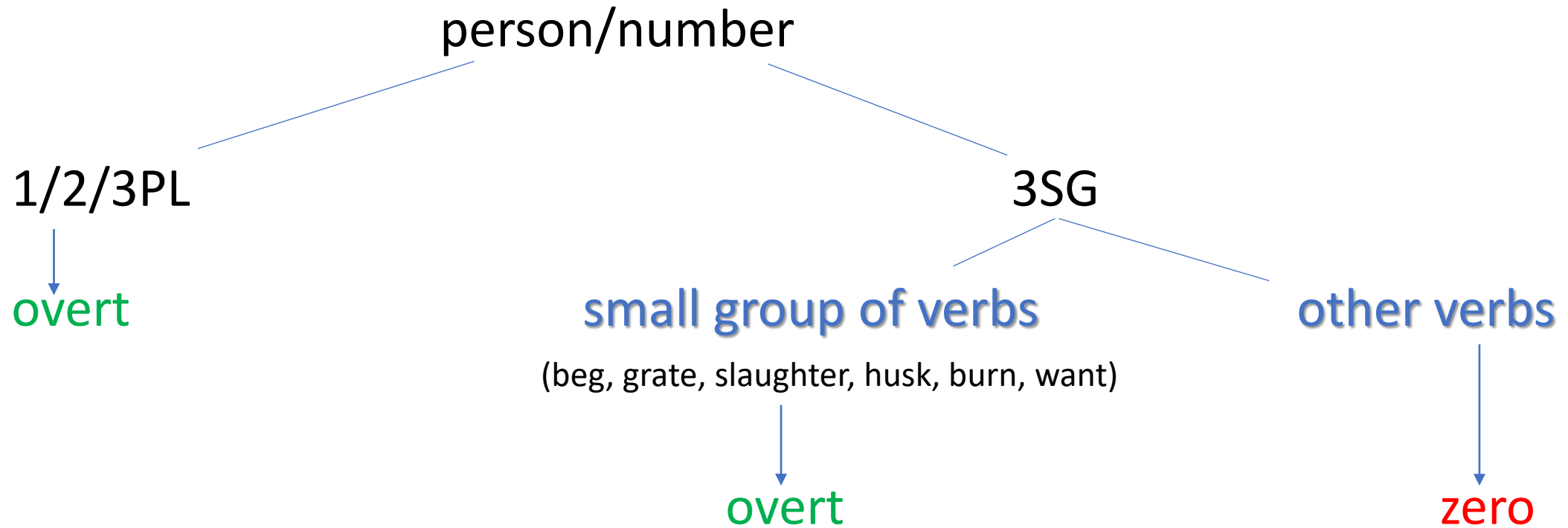
Preliminary results

Co-occurrence restrictions (i.e., can indexes and independent arguments co-occur?)

- Only 3 languages have strict co-occurrence restrictions, all for P
 - Nganasan: index and pronoun are mutually exclusive (NP is possible)
 - South Efate: index cannot co-occur with any independent argument
 - Yeri: word order (index is generally omitted if the NP follows the verb); animacy (co-referential pronoun must be human)

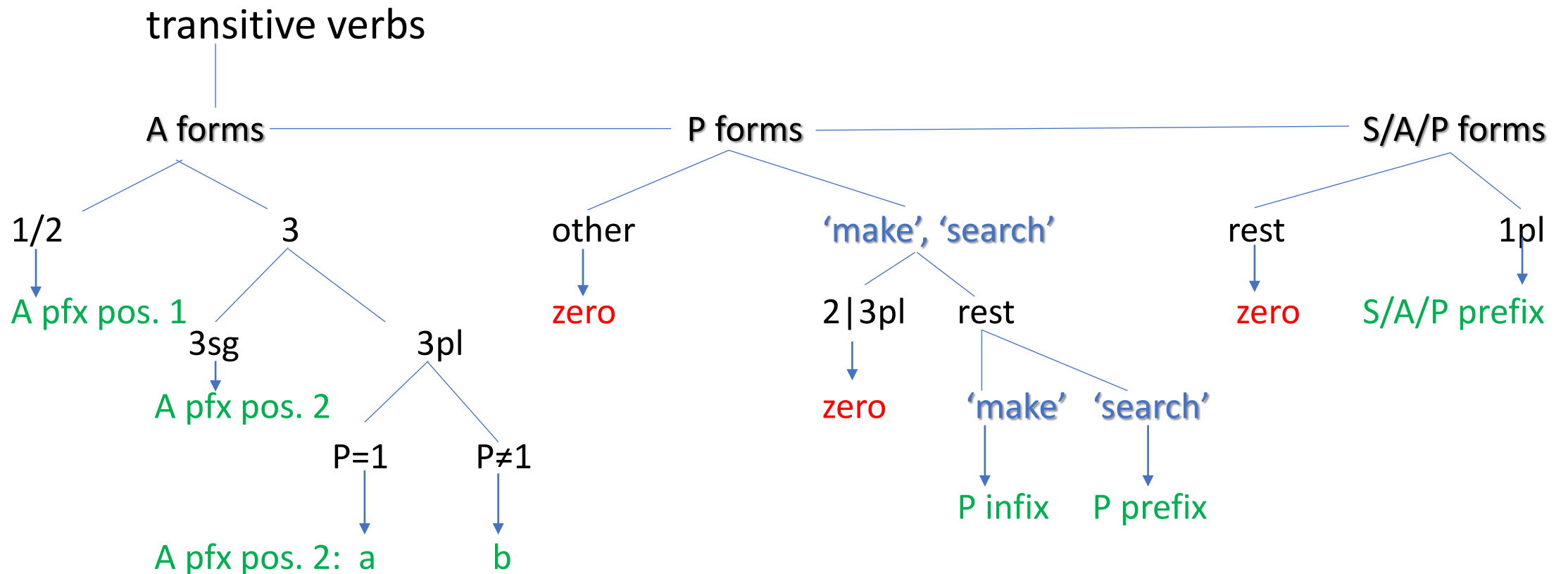
Example of DAI system (ii)

- South Efate: P person/number indexing (Oceanic, Vanuatu; Thieberger 2006)



Example of DAI system (iii)

- Coastal Marind: A person/number indexing (Anim, Indonesia; Olsson 2021)



Example of DAI system (iii)

(a) *otih ap awe m-an-d-e n-alaw*
many too game obj-1.a-dur-1pl 1.u-search
'All of us were searching for animals.' (Olsson 2021: 308)

(b) *men-ba-n-em yoman*
perf-act-3pl.a-2|3pl.gen approach
'They already met you(pl)/them.' (Olsson 2021: 308)

(c) *men-b-e-nam yoman*
perf-act-3pl>1-1.gen approach
'They already met me.' (Olsson 2021: 308)

Example of DAI system (iii)

Coastal Marind (Anim, Indonesia; Olsson 2021)

- In addition to A indexing:
 - 6 different P indexing paradigms (all verbs except ‘hear’) – arbitrary verb classes
 - ‘Hear’: DAI-P based on animacy (3rd person inanimate is zero)
 - Split S: A indexing (agentive verbs), P indexing (patientive verbs; 4 x indexing paradigms – arbitrary verb classes), A+P indexing (middle verbs; 3 x P indexing paradigms – arbitrary verb classes)
 - Number marking: 16 verbs have suppletive number marking; absolutive alignment (S, P)

Summary

- DAI is a widespread and complex phenomenon
- Conditioned by lexical and other factors
- Part of DAM typology, but not enough/encompassing/systematic data
 - in particular: non-argument related factors
 - and S/A argument roles
- Challenge: integrating fine-grained corpus-based analysis of individual language systems with large-scale typological data

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