Omnivory and what it can tell us about Agree and phi-features

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Puzzles of Agreement: Syntactic, Semantic and Psycholinguistic Perspectives
(organized by the University of Bucharest, UMass Amherst, ZAS Berlin and the University of Toronto)

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Topic of this talk

What's **omnivorous** agreement?
A permissive pattern of agreement that switches between two arguments, depending on the ϕ-features of the arguments.

(1) a. g-xedav **-t**
2.OBJ-saw-PL
'I saw **y'all**.'

b. g-xedav **-t**
2.OBJ-saw-PL
'**We** saw you.'

Georgian

- The verb agrees in plural, whether it is the subject or the object.
- The term was coined by Nevins (2011b).
- Nevins (2011b) argues that this is particular to number agreement, implying that we don't find omnivory with person agreement.
- He argues that this is evidence that number features are privative and person features are binary.
- Privacy for number: singular is the absence of a feature

Topic of this talk

- Mundari, an Austro-Asiatic language, shows omnivorous object agreement with number **and person**.
- In ditranstive constructions there is only one agreement slot for the object, and IO and DO compete over which argument enters agreement.

(2) hon-ko aiɲ ke am ke-ko ɛm-a -iɲ -ta-n-a
children-PL 1SG EMP 2SG EMP-3PL.SM give-BEN-1SG.OM-PROG-ITR-IND
'Children are giving me to you.'

(3) hon-ko am ke aiɲ ke-ko ɛm-a -iɲ -ta-n-a
children-PL 2SG EMP 1SG EMP-3PL.SM give-BEN-1SG.OM-PROG-ITR-IND
'Children are giving you to me.'

- Person scale: $1 > 2 > 3$

Topic of this talk

- In contrast to Georgian, omnivorous number agreement in Mundari ranks **singular over plural**.
- This is very unusual, as plural is cross-linguistically the more marked morphological category.

(4) aiɲ e Ravi ke hon-ko-iɲ ɛm-a -i -ta-n-a
1SG EMP Ravi EMP children-PL-1SG.SM give-BEN-3SG.OM-PROG-ITR-IND

'I am giving Ravi to children.'

(5) aiɲ hon-ko ke Ravi ke-iɲ ɛm-a -i -ta-n-a
1SG children-PL EMP Ravi EMP-1SG.SM give-BEN-3SG.OM-PROG-ITR-IND

'I am giving children to Ravi.'

- Number scale: *singular* > *plural* > *dual*

Puzzles for agreement

1. Mundari shows person omnivory ($1 > 2 > 3$) contrary to the prediction in Nevins (2011b).
   - *This could either mean that person features are not binary or that the Multiple Agree account by Nevins (2011b) is not on the right track. (We will adopt the second option.)*
2. Mundari displays a tripartite number system with a number scale (*singular* > *plural* > *dual*) which is the inverse of the universal markedness scale.
   - *No number theory on the market can derive such a scale. We will propose that probes can search for markedness features.*
3. In double object sentences where both scales are in conflict, the grammar shows agreement with the IO as a default.
   - *This will fall out from our account of omnivorous agreement.*

Outline

Acknowledgements

- This talk is based on joint work with Gurujegan Murugesan and Andrew Murphy.
- We thank our Mundari language consultants: Christina Guria, Abhishek Swarnim, Neeraj Munda, and Anukaran Marki.
- Unless stated otherwise, all Mundari data in this presentation comes from fieldwork carried out in Jharkhand, India.
- Further reading: https://ling.auf.net/lingbuzz/007981

Background on omnivorous agreement

Background

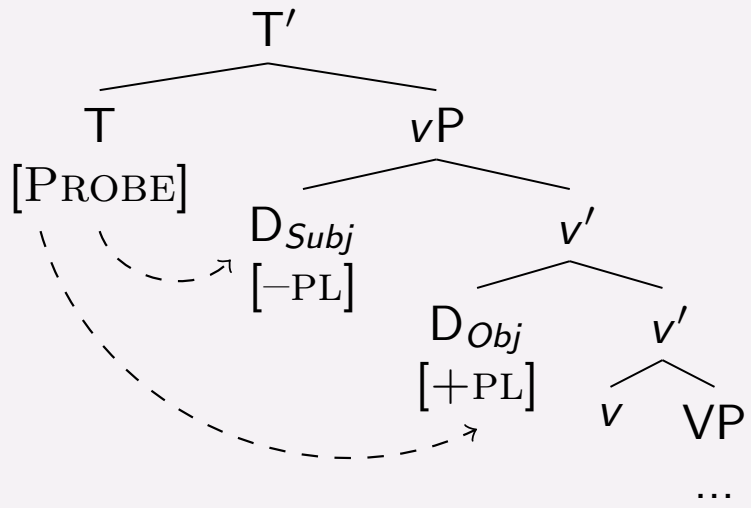
The existence of omnivorous agreement has been tied to the nature of the underlying feature system Nevins (2011b).

(6) a. g-xedav -t
2.OBJ-saw-PL
'I saw y'all.'

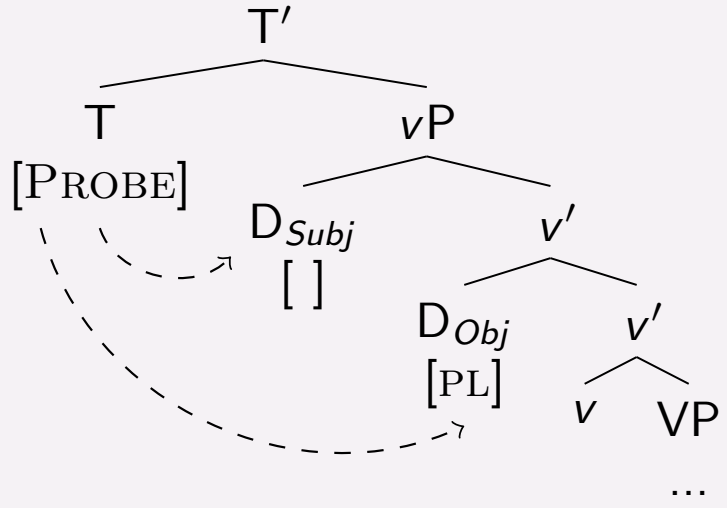
b. g-xedav -t
2.OBJ-saw-PL
'We saw you.' *Georgian*

To derive (6a), number features must be privative as in (7b), otherwise they violate Contiguous Agree (*no Multiple Agree with a marked feature across an unmarked feature*).

(7) a. ✗ Contiguous Agree



b. ✓ Contiguous Agree



Background

Since Nevins (2011b), a number of omnivory patterns have emerged. Here is an overview.

Number omnivory

	scale	source
Georgian	*pl* > *sg*	Nevins (2011b)
Mara	*pl* > *sg*	Bhattacharya and Sharma (2022)
Kichean	*pl* > *sg*	Preminger (2011); Béjar (2011)
Ariellese	*pl* > *sg*	D'Alessandro (2002)
Ketama Berber	*sg* > *pl*	Kumaran (2023)
Onondaga	*pl* > *dl* > *sg*	Barrie (2016)
Hayu	*pl* > *dl* > *sg*	Michailovsky (2017); Georgi (2019)
Mundari	*sg* > *pl* > *dl*	

Background

Person omnivory, however, has also been observed across languages.

Person omnivory

	scale	source
Kichean	$1/2 > 3$	Preminger (2011); Béjar (2011)
Chuckchi	$1/2 > 3$	Comrie (1979)
Eastern Armenian	$1/2 > 3$	Béjar and Kahnemuyipour (2017)
Blackfoot	$3 > 1/2$	Grishin (2023)
Nez Perce	$2 > 1 > 3$	Deal (2015)
Alutor	$1 > 2 > 3$	Mel'čuk (1973)
Mundari	$1 > 2 > 3$	

Language profile

Mundari belongs to the North Munda branch of the Austroasiatic language family.

- spoken in the north of India
- only a handful of descriptive works: Hofmann (1978); Anderson (2007); Osada (1992, 2008)
- SOV language
- tripartite number marking
- no case marking
- extensive morphological marking in the verbal domain
- subject and object markers on the verb (analyzed as clitics)

Figure: Austro-Asiatic languages

Language profile

The verbal template and an example for a transitive sentence in Mundari:

(8) *Verbal inflection*

a. VERB-ASPECT-VALENCY-OM-MOOD-SM

b. pusi-kin seta-ko hua-ke-d-ko-a-kin
cat-DU dog-PL bite-COMPL-TR-3PL.OM-IND-3DU.SM
'The two cats bit the dogs.'

On the nouns, plural and dual are marked, while singular is left unmarked:

(9) *Number inflections on nouns* (Osada 2008: 108)

a. hon 'child' hon-ko 'child-PL' hon-kin 'child-DU'

b. ipil 'star' ipil-ko 'star-PL' ipil-kin 'star-DU'

Language profile

There is a close resemblance between the form of the pronouns on the one hand and the form of the subject and object markers on the other:

SM and OM paradigm
(Osada 2008: 120)

	SG	DU	PL
1(INCL)	-ñ	-laŋ	-bu
1(EXCL)		-laŋ	-le
2	-m	-ben	-pe
3	-eʔ/-iʔ/-e/-i	-kin	-ko

Pronominal paradigm
(Osada 2008: 109)

	SG	DU	PL
1(INCL)	añ	alaŋ	abu
1(EXCL)		alaŋ	ale
2	am	aben	ape
3	aeʔ	akin	ako

We will analyze the subject and object markers on the verb as the result of clitic doubling.

Omnivorous person agreement

The OM always co-refers with the object which encodes the higher person.
(Both objects are singular)

(10) hon-ko aiɲ ke am ke-ko ɛm-a -iɲ -ta-n-a
children-PL 1SG EMP 2SG EMP-3PL.SM give-BEN-1SG.OM-PROG-ITR-IND
'Children are giving me to you.'

(11) hon-ko am ke aiɲ ke-ko ɛm-a -iɲ -ta-n-a
children-PL 2SG EMP 1SG EMP-3PL.SM give-BEN-1SG.OM-PROG-ITR-IND
'Children are giving you to me.'

- Person scale in Mundari: **1 > 2** > 3

Omnivorous person agreement

The OM always co-refers with the object which encodes the higher person.
(Both objects are singular)

(12) hon-ko am ke Ravi ke-ko ɛm-a -m -ta-n-a
children-PL 2SG EMP Ravi EMP-3PL.SM give-BEN-2SG.OM-PROG-ITR-IND
'Children are giving you to Ravi.'

(13) hon-ko Ravi ke am ke-ko ɛm-a -m -ta-n-a
children-PL Ravi EMP 2SG EMP-3PL.SM give-BEN-2SG.OM-PROG-ITR-IND
'Children are giving Ravi to you.'

- Person scale in Mundari: 1 > **2 > 3**

Omnivorous person agreement

The OM always co-refers with the object which encodes the higher person.
(Both objects are singular)

(14) hon-ko aiɲ ke Ravi ke-ko ɛm-a -iɲ -ta-n-a
children-PL 1SG EMP Ravi EMP-3PL.SM give-BEN-1SG.OM-PROG-ITR-IND
'Children are giving me to Ravi.'

(15) hon-ko Ravi ke aiɲ ke-ko ɛm-a -iɲ -ta-n-a
children-PL Ravi EMP 1SG EMP-3PL.SM give-BEN-1SG.OM-PROG-ITR-IND
'Children are giving Ravi to me.'

- Person scale in Mundari: **1** > 2 > **3**

Omnivorous number agreement

The OM always co-refers with the object which encodes the higher number.
(Both objects are 3rd person)

(16) aiɲ e Ravi ke hon-ko-iɲ ɛm-a -i -ta-n-a
1SG EMP Ravi EMP children-PL-1SG.SM give-BEN-3SG.OM-PROG-ITR-IND
'I am giving Ravi to children.'

(17) aiɲ hon-ko ke Ravi ke-iɲ ɛm-a -i -ta-n-a
1SG children-PL EMP Ravi EMP-1SG.SM give-BEN-3SG.OM-PROG-ITR-IND
'I am giving children to Ravi.'

- Number scale in Mundari: **sg** > **pl** > dl

Omnivorous number agreement

The OM always co-refers with the object which encodes the higher number.
(Both objects are 3rd person)

(18) aiɲ bhilai-kin hon-ko ke-iɲ ɛm-a -ko -ta-n-a
1SG cat-DL children-PL EMP-1SG.SM give-BEN-3PL.OM-PROG-ITR-IND
'I am giving two cats to children.'

(19) aiɲ bhilai-ko hon-kin-iɲ ɛm-a -ko -ta-n-a
1SG cat-PL children-DL-1SG.SM give-BEN-3PL.OM-PROG-ITR-IND
'I am giving cats to two children.'

- Number scale in Mundari: sg > **pl > dl**

Omnivorous number agreement

The OM always co-refers with the object which encodes the higher number. (Both objects are 3rd person)

(20) aiɲ Ravi ke hon-kin-iɲ ɛm-a -i -ta-n-a
1SG Ravi EMP children-DL-1SG.SM give-BEN-3SG.OM-PROG-ITR-IND
'I am giving Ravi to two children.'

(21) aiɲ hon-kin Ravi ke-iɲ ɛm-a -i -ta-n-a
1SG children-DL Ravi EMP-1SG.SM give-BEN-3SG.OM-PROG-ITR-IND
'I am giving two children to Ravi .'

- Number scale in Mundari: **sg** > pl > **dl**

Scale interactions

Now we can look at interactions of person and number. If one argument outranks the other in number and person, this argument will be agreed with. This is expected.

(22) hon-ko aiɲ ke ako ke-ko ɛm-a -iɲ -ta-n-a
children-PL 1SG EMP 3PL EMP-3PL.SM give-BEN-1SG.OM-PROG-ITR-IND
'Children are giving me to them.'

(23) hon-ko ako ke aiɲ ke-ko ɛm-a -iɲ -ta-n-a
children-PL 3PL EMP 1SG EMP-3PL.SM give-BEN-1SG.OM-PROG-ITR-IND
'Children are giving them to me.'

- Person scale in Mundari: 1 > 2 > 3
- Number scale in Mundari: sg > pl > dl

Scale interactions

What's more interesting is what happens when there is a dilemma, that is if each argument outranks the other in only one ϕ-feature. In such cases the IO will always be agreed with.

(24) hon-ko Ravi ke ape ke-ko ɛm-a -pe -ta-n-a
children-PL Ravi EMP 2PL EMP-3PL.SM give-BEN-2PL.OM-PROG-ITR-IND
'Children are giving Ravi to you(pl).'

(25) hon-ko ape ke Ravi ke-ko ɛm-a -i -ta-n-a
children-PL 2PL EMP Ravi EMP-3SG.SM give-BEN-3SG.OM-PROG-ITR-IND
'Children are giving you(pl) to Ravi.'

- Person scale in Mundari: 1 > 2 > 3
- Number scale in Mundari: sg > pl > dl

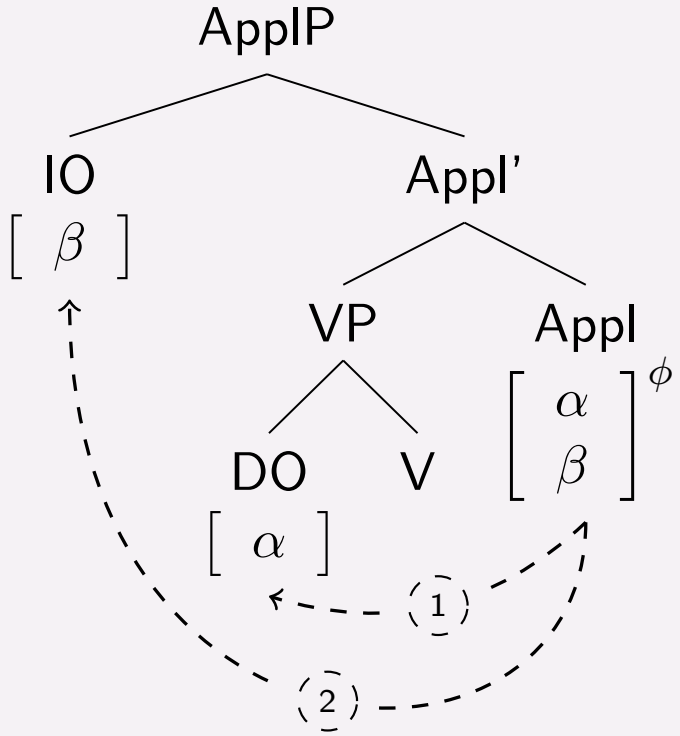
Interim summary

- In ditransitives, the choice between IO and DO for the OM slot is determined by the following hierarchies:
  - Person hierarchy: $1 > 2 > 3$
  - Number hierarchy: $\textsc{sg} > \textsc{pl} > \textsc{du}$
- Given these scales, the DO can be cross-referenced by the OM slot if and only if the DO outranks the IO on both the person and number scales. If the IO outranks the DO on either the person or number scale, the OM tracks the IO instead.

Ditransitives in Mundari

We assume the following underlying structure for ditransitives in Mundari. A Φ-probe on Appl undergoes Agree with both objects. We will adopt a sequential multi-valuation analysis.

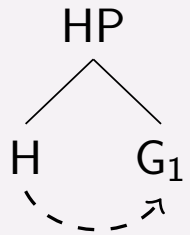
(26) *Structure of Mundari ditransitives*



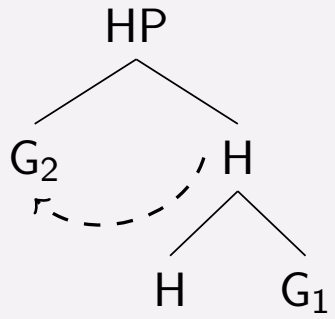
Cyclic Agree

Our proposal takes a lot of inspiration from the Cyclic Agree model by Béjar and Rezac (2009).

(27) First cycle Agree



(29) Second cycle Agree



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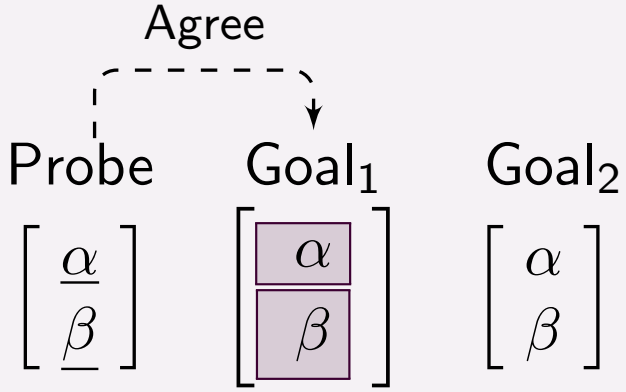

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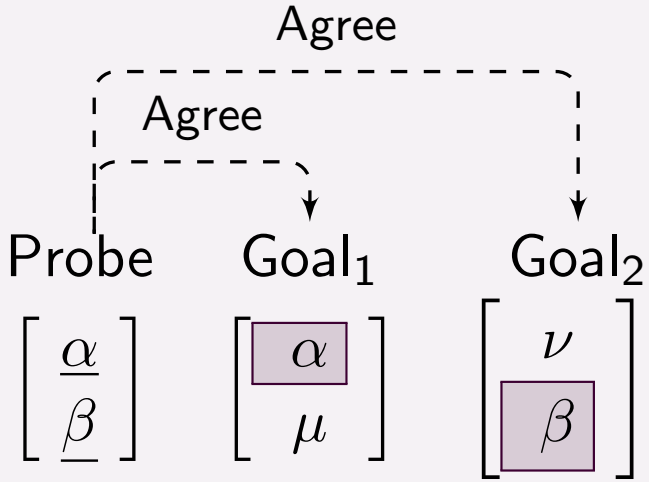
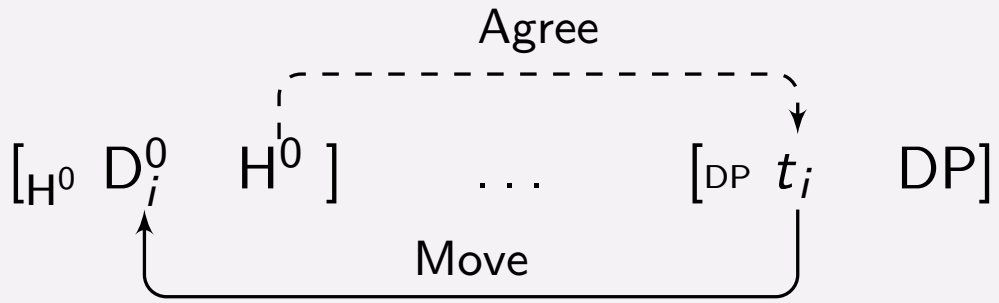


Clitic doubling

We adopt the 'Big DP' analysis (Torrego 1992; Belletti 2005; Arregi and Nevins 2012; Preminger 2019).

(31)



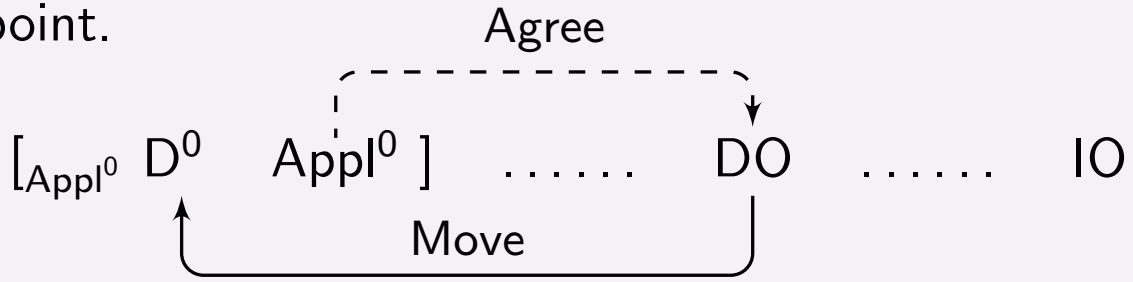
- Agree happens with a defective D^o attached to the goal.
- D^o moves and adjoins to the probing head H^o as a consequence of Agree.
- The result is a doubled clitic (i.e., OM in Mundari).

Overwriting in post-syntax derives omnivory

Recall that there is always only one OM in Mundari. In order to derive this pattern, we propose an overwriting mechanism in the post-syntactic component.

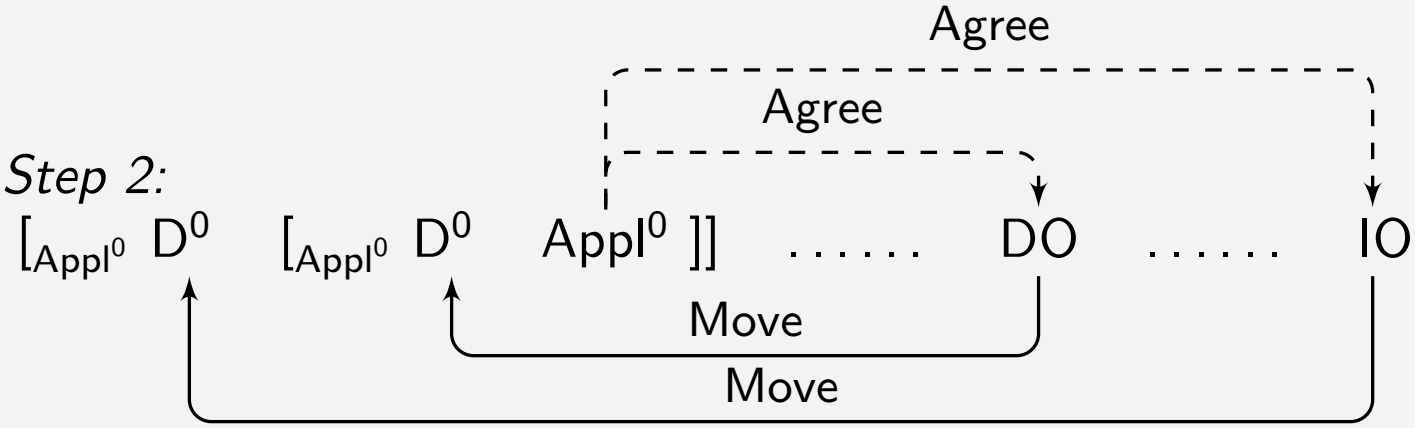
If DO matches all features on the probe on Appl, then the derivation is successful at this point.

(32) *Step 1:*



If there are still unvalued features on Appl, there is going to be a second Agree cycle where a second clitic is created.

(33) *Step 2:*



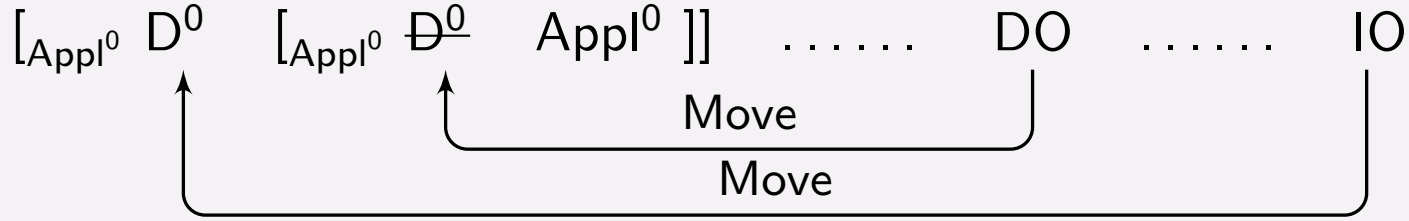
Overwriting in post-syntax derives omnivory

In such cases a post-syntactic rule triggers obliteration (Arregi and Nevins 2012) of the innermost clitic (cf. Perlmutter 1968; Nevins 2007):

(34) *Obliteration rule*
$D^0 \longrightarrow \emptyset$ / $[_{Appl^0}\ D^0\ [\ \_\_\ Appl^0\ ]]$

The result is that the IO clitic overwrites the DO clitic.

(35) *Step 3:*



Person omnivory

We adopt a binary person feature system (Noyer 1992; Halle 1997; Nevins 2007; Harbour 2016).

Decomposition of person features

1st person	2nd person	3rd person
$\begin{bmatrix} \pi: & +\text{author} \\ & +\text{participant} \end{bmatrix}$	$\begin{bmatrix} \pi: & -\text{author} \\ & +\text{participant} \end{bmatrix}$	$\begin{bmatrix} \pi: & -\text{author} \\ & -\text{participant} \end{bmatrix}$

Given this decomposition, we can derive the person hierarchy in Mundari by assuming that the person probe is specified as in (36).

(36) *Person probe in Mundari*

$$\begin{bmatrix} \pi: & +\text{author} \\ & +\text{participant} \end{bmatrix}$$

Omnivorous person agreement

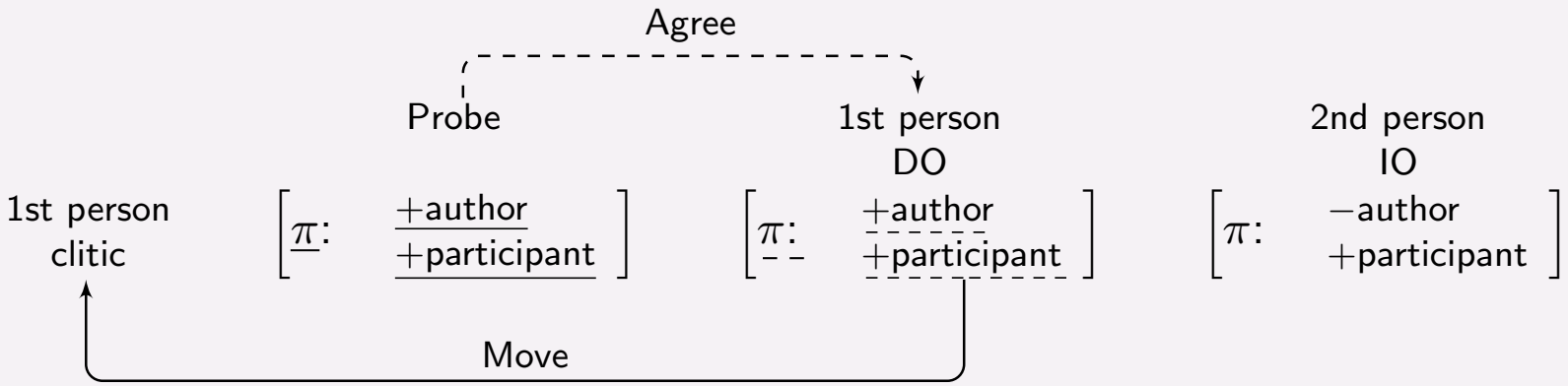
Person scale in Mundari: **1 > 2** > 3

(37) hon-ko aiɲ ke am ke-ko ɛm-a -iɲ -ta-n-a

children-PL 1SG EMP 2SG EMP-3PL.SM give-BEN-1SG.OM-PROG-ITR-IND

'Children are giving me to you.'

(38)



Omnivorous person agreement

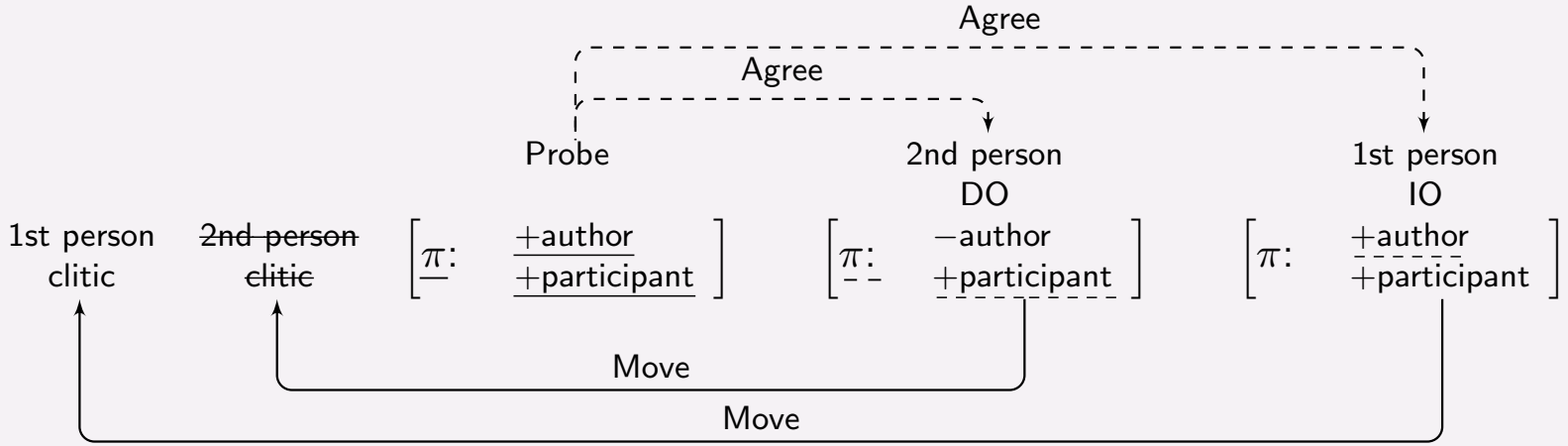
Person scale in Mundari: **1 > 2** > 3

(39) hon-ko am ke aiɲ ke-ko ɛm-a -iɲ -ta-n-a

children-PL 2SG EMP 1SG EMP-3PL.SM give-BEN-1SG.OM-PROG-ITR-IND

'Children are giving you to me.'

(40)



Number omnivory

Key to deriving scale effects is that the feature decomposition has to happen in such a way that higher members of the scale match more subfeatures of the probe than lower members of the scale.

(41)

Probe	A	>	B	>	C
$\begin{bmatrix} \alpha \\ \beta \\ \gamma \end{bmatrix}$	$\begin{bmatrix} \alpha \\ \beta \\ \gamma \end{bmatrix}$		$\begin{bmatrix} \alpha \\ \beta \end{bmatrix}$		$[\ \alpha\ ]$

For person features the commonly adopted feature decomposition can easily derive the person scale in Mundari:

(42)

Probe	1	>	2	>	3
$\begin{bmatrix} \pi \\ +\ \text{PART} \\ +\ \text{AUTH} \end{bmatrix}$	$\begin{bmatrix} \pi \\ +\ \text{PART} \\ +\ \text{AUTH} \end{bmatrix}$		$\begin{bmatrix} \pi \\ +\ \text{PART} \end{bmatrix}$		$[\ \pi\ ]$

Number omnivory

The problem with the number scale in Mundari is that there is no decomposition on the market that would derive such a scale.

Take for example the semantically well-motivated binary feature decomposition below (Noyer 1992; Harbour 2008):

Decomposition of number features

singular	plural	dual
[#: +singular, −augmented]	[#: −singular, +augmented]	[#: −singular, −augmented]

(43)

Probe		singular	>	plural	>	dual
[# ?? + SING]		[# ?? + SING]		[# ??]		[#]

Number omnivory

The problem is not tied to binary feature systems.

Privative systems similarly struggle to derive the scale (Harley 1994; Smith et al. 2019):

singular	plural	dual
#	#	#
	group	group
		minimal

(44)

Probe	singular	>	plural	>	dual
[# ?? ??]	[# ?? ??]		[# ??]		[#]

Number omnivory

What is remarkable about the number scale in Mundari (singular $>$ plural $>$ dual) is that it is the inverse of the universal markedness hierarchy.

(45) *Universal markedness hierarchy for number*

$$\underset{\left[\begin{smallmatrix}+\text{singular}\\+\text{augmented}\end{smallmatrix}\right]}{*} > \underset{\left[\begin{smallmatrix}-\text{singular}\\-\text{augmented}\end{smallmatrix}\right]}{\text{DU}} > \underset{\left[\begin{smallmatrix}-\text{singular}\\+\text{augmented}\end{smallmatrix}\right]}{\text{PL}} > \underset{\left[\begin{smallmatrix}+\text{singular}\\-\text{augmented}\end{smallmatrix}\right]}{\text{SG}}$$

(marked) (marked) (unmarked) (unmarked)

We therefore propose that the number scale in Mundari encodes:

- a preference for singular over non-singulars
- a preference for unmarked feature constellations over marked ones

Number omnivory

How do we get from the markedness hierarchy to a feature which heads can probe for?

(46) *Universal markedness hierarchy for number*

$$\underset{\left[\begin{array}{c}+\text{singular}\\+\text{augmented}\end{array}\right]}{\overset{*}{\text{(marked)}}} > \underset{\left[\begin{array}{c}-\text{singular}\\-\text{augmented}\end{array}\right]}{\overset{\text{DU}}{\text{(marked)}}} > \underset{\left[\begin{array}{c}-\text{singular}\\+\text{augmented}\end{array}\right]}{\overset{\text{PL}}{\text{(unmarked)}}} > \underset{\left[\begin{array}{c}+\text{singular}\\-\text{augmented}\end{array}\right]}{\overset{\text{SG}}{\text{(unmarked)}}}$$

We can understand the hierarchy in terms of contextual markedness (Noyer 1998; Nevins 2011a).

→ [+augmented] is the unmarked value in the context of [−singular] since together they yield a less marked category (plural) than the alternative value [−augmented] (corresponding to dual)

(47) *Decomposed number hierarchy in Mundari*

$$\underset{\left[\begin{array}{c}+\text{singular}_u\\-\text{augmented}_u\end{array}\right]}{\text{SG}} > \underset{\left[\begin{array}{c}-\text{singular}_u\\+\text{augmented}_u\end{array}\right]}{\text{PL}} > \underset{\left[\begin{array}{c}-\text{singular}_m\\-\text{augmented}_m\end{array}\right]}{\text{DU}}$$

Number omnivory

(48) *Decomposed number hierarchy in Mundari*

$$\underset{\text{SG}}{\begin{bmatrix} +\text{singular}_u \\ -\text{augmented}_u \end{bmatrix}} > \underset{\text{PL}}{\begin{bmatrix} -\text{singular}_u \\ +\text{augmented}_u \end{bmatrix}} > \underset{\text{DU}}{\begin{bmatrix} -\text{singular}_m \\ -\text{augmented}_m \end{bmatrix}}$$

With the new subfeatures in place, we can finally derive the number scale in Mundari.

(49) *Number probe in Mundari*

$$\begin{bmatrix} \#: & +\text{singular} \\ & \text{Uaugmented} \end{bmatrix}$$

(50)

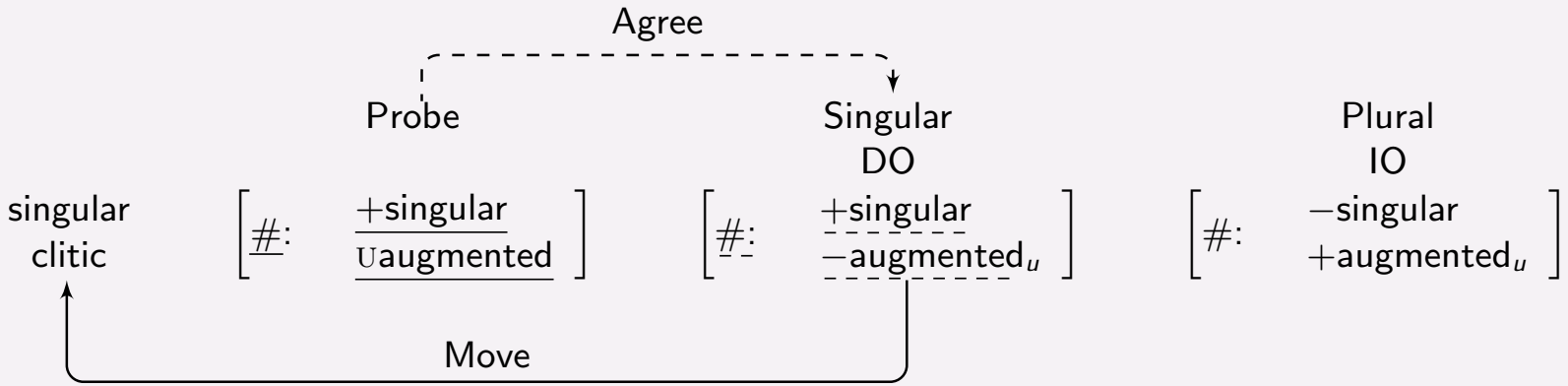
$$\underset{\text{Probe}}{\begin{bmatrix} \# \\ \text{Uaugm} \\ +\text{ SING} \end{bmatrix}} \quad \underset{\text{singular}}{\begin{bmatrix} \# \\ \text{Uaugm} \\ +\text{ SING} \end{bmatrix}} > \underset{\text{plural}}{\begin{bmatrix} \# \\ \text{Uaugm} \end{bmatrix}} > \underset{\text{dual}}{\begin{bmatrix} \# \end{bmatrix}}$$

Omnivorous number agreement

Number scale in Mundari: **sg** > **pl** > dl

(51) aiɲ e Ravi ke hon-ko-iɲ ɛm-a -i -ta-n-a
1SG EMP Ravi EMP children-PL-1SG.SM give-BEN-3SG.OM-PROG-ITR-IND
'I am giving Ravi to children.'

(52)

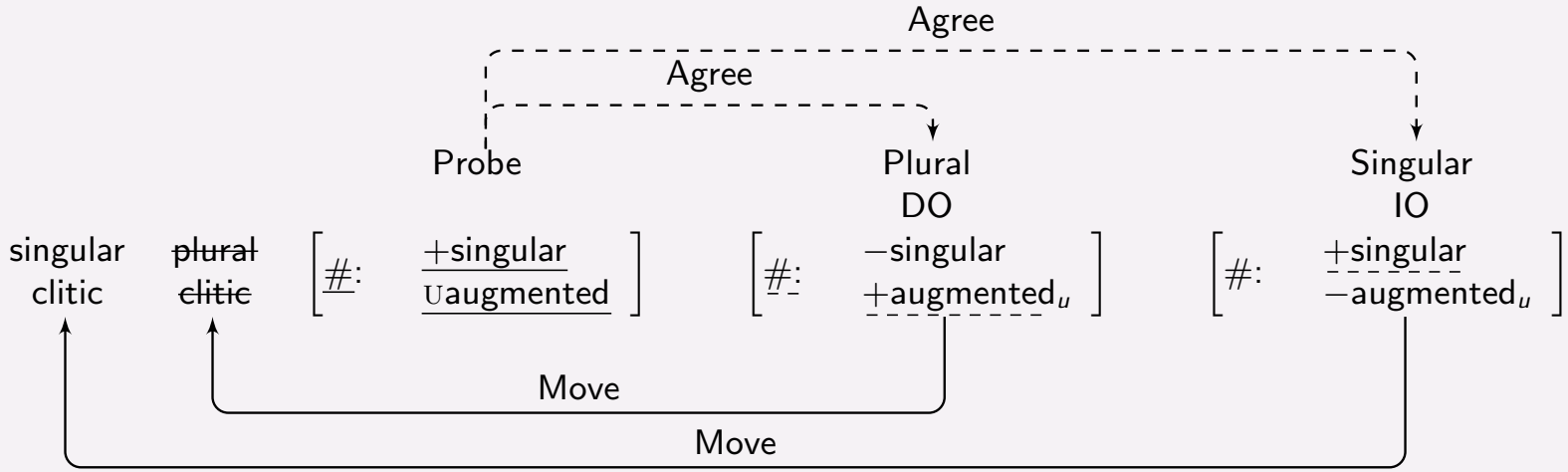


Omnivorous number agreement

Number scale in Mundari: **sg** > **pl** > dl

(53) aiɲ hon-ko ke Ravi ke-iɲ ɛm-a -i -ta-n-a
1SG children-PL EMP Ravi EMP-1SG.SM give-BEN-3SG.OM-PROG-ITR-IND
'I am giving children to Ravi.'

(54)

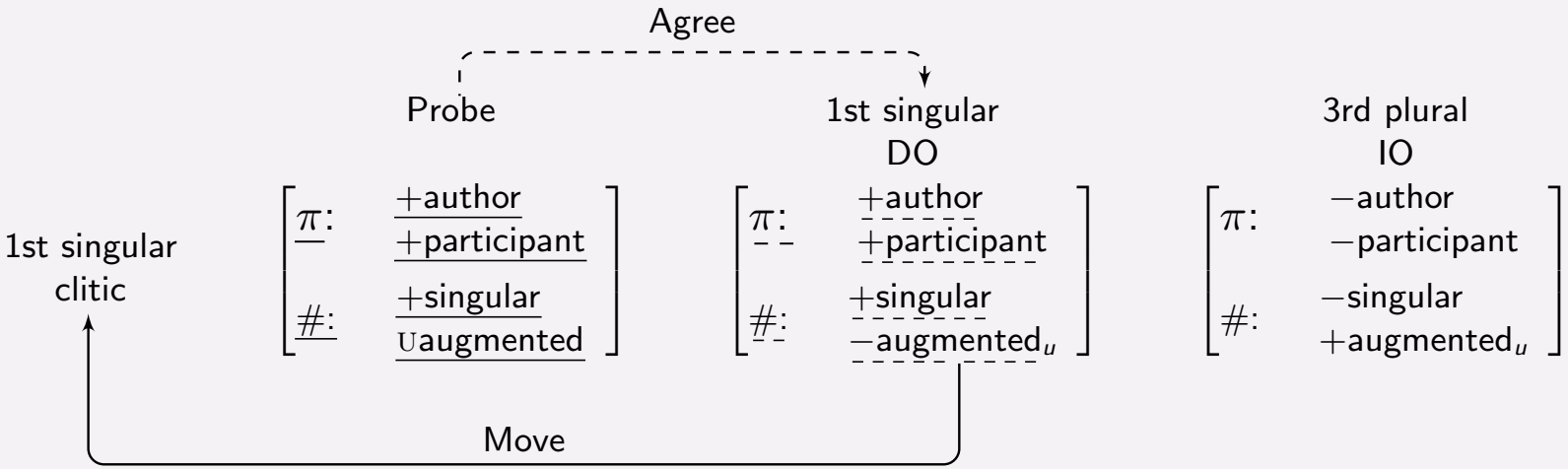


Scale interactions

- Person scale in Mundari: 1 > 2 > 3
- Number scale in Mundari: sg > pl > dl

(55) hon-ko aiɲ ke ako ke-ko ɛm-a -iɲ -ta-n-a
children-PL 1SG EMP 3PL EMP-3PL.SM give-BEN-1SG.OM-PROG-ITR-IND
'Children are giving me to them.'

(56)

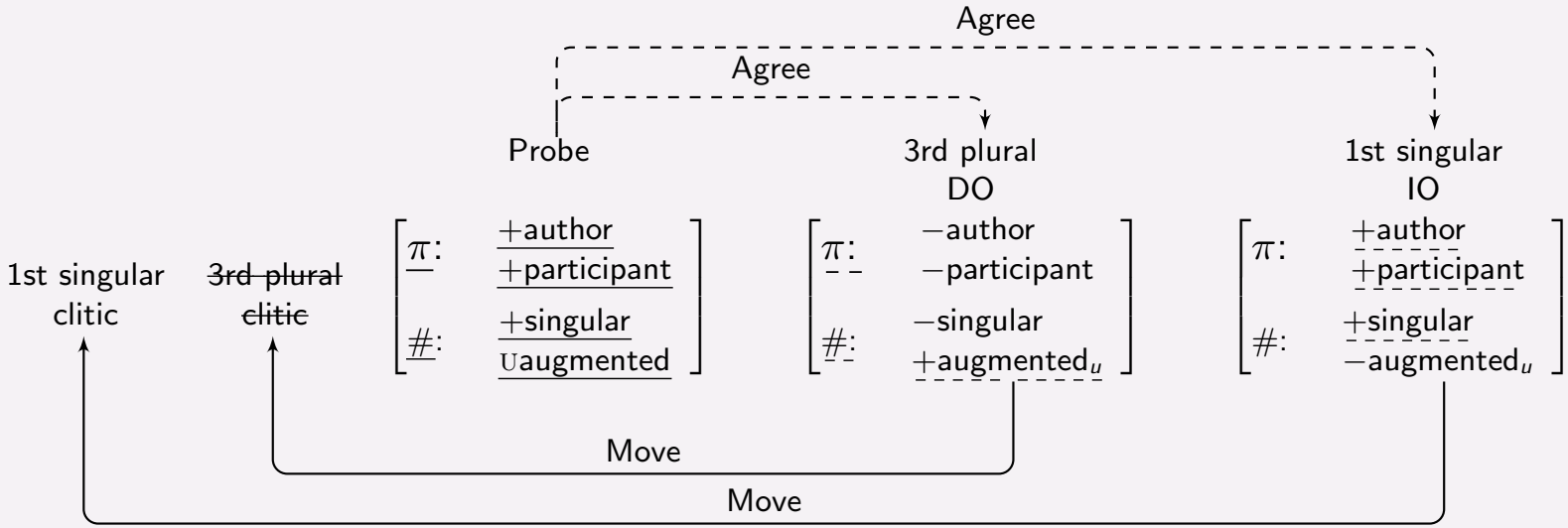


Scale interactions

- Person scale in Mundari: 1 > 2 > 3
- Number scale in Mundari: sg > pl > dl

(57) hon-ko ako ke aiɲ ke-ko ɛm-a -iɲ -ta-n-a
children-PL 3PL EMP 1SG EMP-3PL.SM give-BEN-1SG.OM-PROG-ITR-IND
'Children are giving them to me.'

(58)

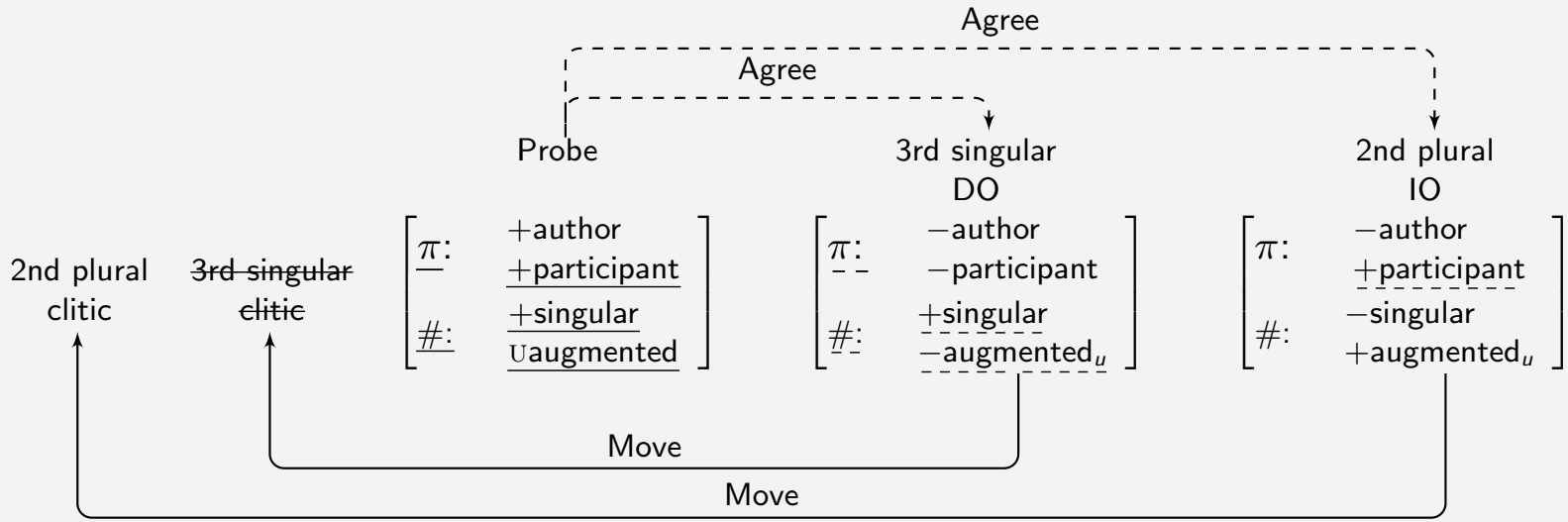


Scale interactions

- Person scale in Mundari: 1 > 2 > 3
- Number scale in Mundari: sg > pl > dl

(59) hon-ko Ravi ke ape ke-ko ɛm-a -pe -ta-n-a
children-PL Ravi EMP 2PL EMP-3PL.SM give-BEN-2PL.OM-PROG-ITR-IND
'Children are giving Ravi to you(pl).'

(60)

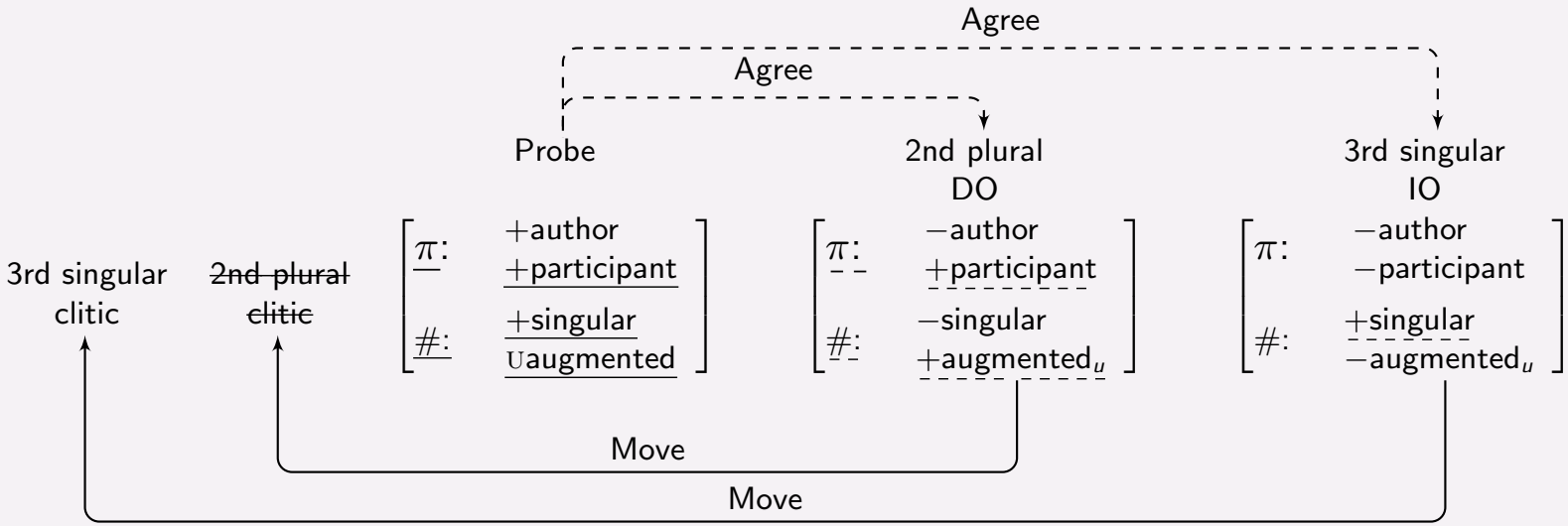


Scale interactions

- Person scale in Mundari: 1 > 2 > 3
- Number scale in Mundari: sg > pl > dl

(61) hon-ko ape ke Ravi ke-ko ɛm-a -i -ta-n-a
children-PL 2PL EMP Ravi EMP-3SG.SM give-BEN-3SG.OM-PROG-ITR-IND
'Children are giving you(pl) to Ravi.'

(62)



Conclusion

- Ditranisitive construction in Mundari display an omnivorous agreement pattern for person and number.
- The object marker tracks the argument which ranks highest on:
  - the person scale: $1 > 2 > 3$
  - the number scale: sg $>$ pl $>$ dl
- We propose an analysis along the lines of Cyclic Agree (Béjar and Rezac 2009) with an additional post-syntactic overwriting rule to resolve clitic clusters.
- Our analysis is built on binary features for person and number.
- The highly unusual number scale in Mundari was derived by a probing mechanism with a preference for singulars and unmarked features.

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Appendix

App I: More derivations

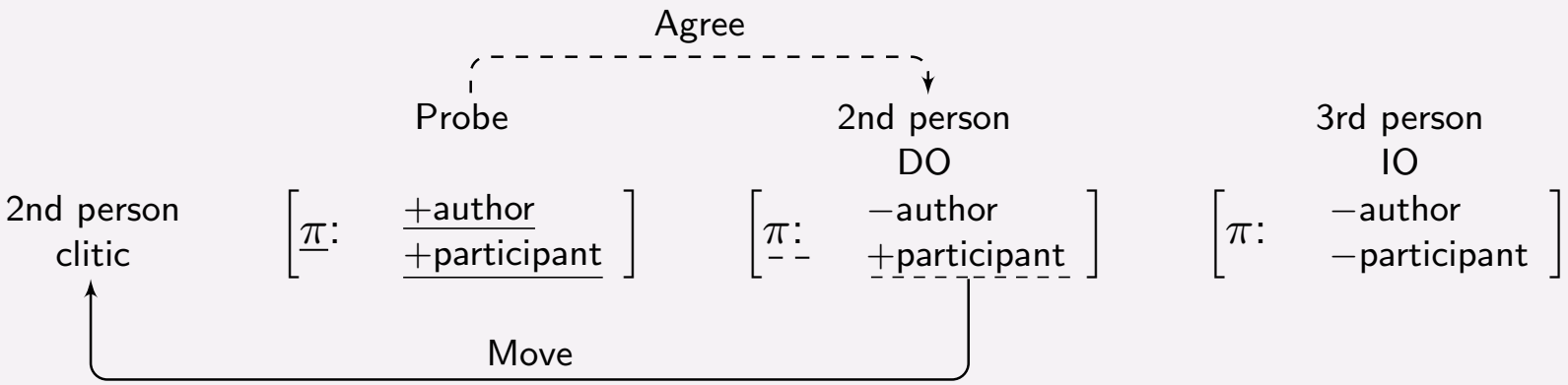
App II: Predictions

Omnivorous person agreement

Person scale in Mundari: 1 > **2 > 3**

(63) hon-ko am ke Ravi ke-ko ɛm-a -m -ta-n-a
children-PL 2SG EMP Ravi EMP-3PL.SM give-BEN-2SG.OM-PROG-ITR-IND
'Children are giving you to Ravi.'

(64)

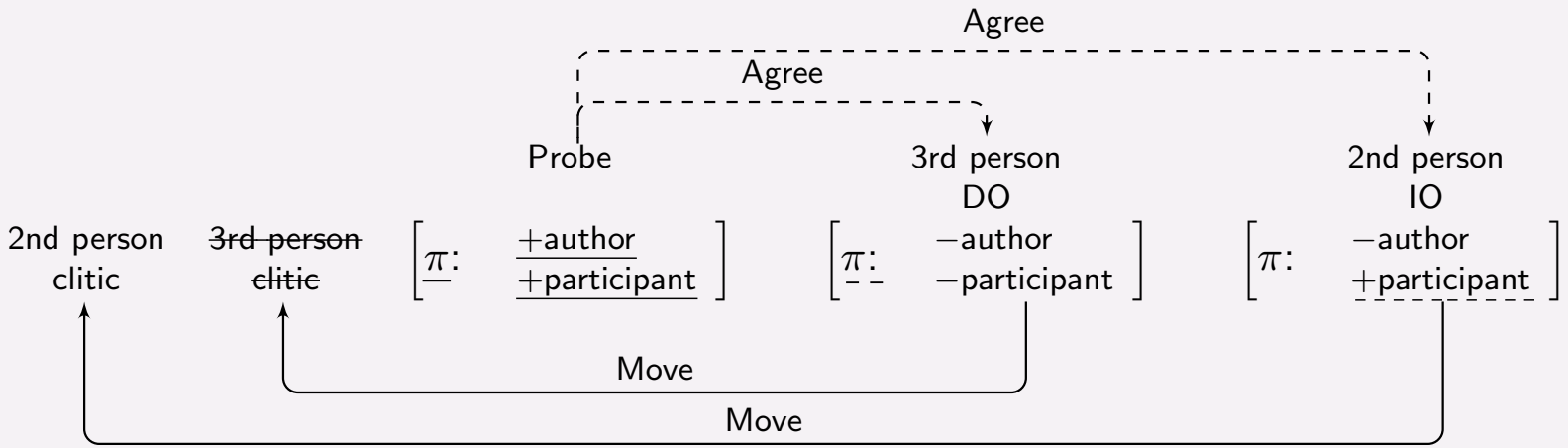


Omnivorous person agreement

Person scale in Mundari: 1 > **2 > 3**

(65) hon-ko Ravi ke am ke-ko ɛm-a -m -ta-n-a
children-PL Ravi EMP 2SG EMP-3PL.SM give-BEN-2SG.OM-PROG-ITR-IND
'Children are giving Ravi to you.'

(66)

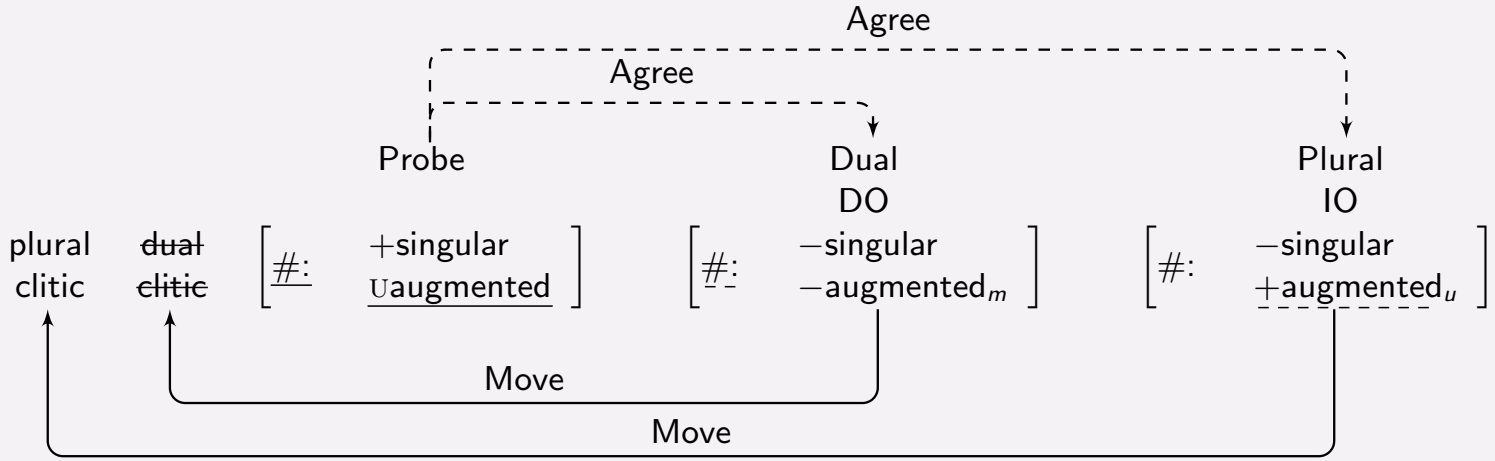


Omnivorous number agreement

Number scale in Mundari: sg > **pl** > **dl**

(67) aiɲ bhilai-kin hon-ko ke-iɲ ɛm-a -ko -ta-n-a
1SG cat-DL children-PL EMP-1SG.SM give-BEN-3PL.OM-PROG-ITR-IND
'I am giving two cats to children.'

(68)



Omnivorous number agreement

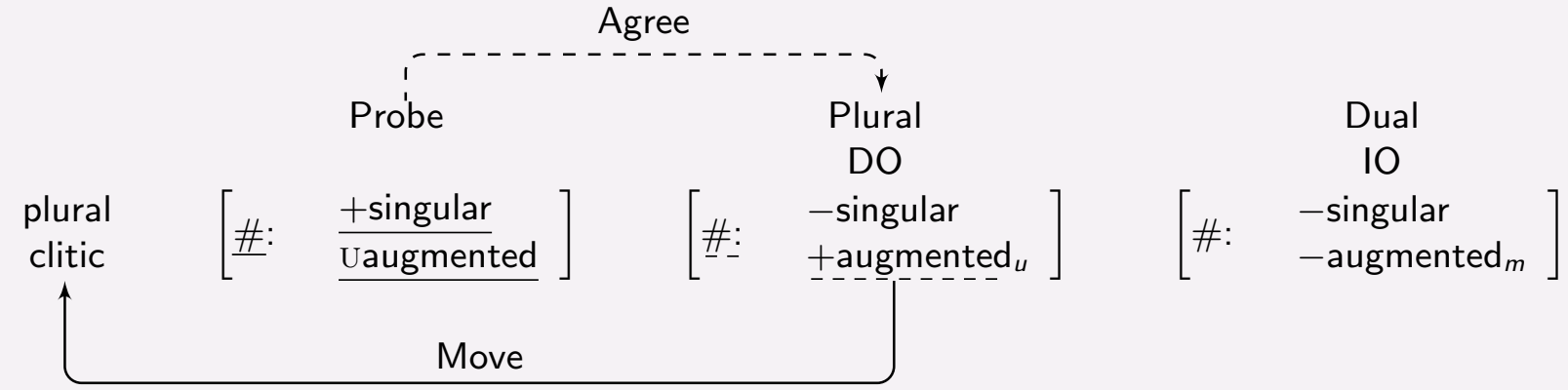
Number scale in Mundari: sg > **pl > dl**

(69) aiɲ bhilai-ko hon-kin-iɲ ɛm-a -ko -ta-n-a

1SG cat-PL children-DL-1SG.SM give-BEN-3PL.OM-PROG-ITR-IND

'I am giving cats to two children.'

(70)



App I: More derivations

App II: Predictions

Predictions for number scales

Predicted scales with simple two-way number probes:

(71) a. +singular = $\boxed{\text{SG} > \text{PL}}$ b. −singular = $\boxed{\text{PL} > \text{SG}}$

Predicted scales with simple three-way number probes:

(72) a. Msingular = $\text{DU} > \text{SG}/\text{PL}$
b. Usingular = $\text{SG}/\text{PL} > \text{DU}$
c. Maugmented = $\text{DU} > \text{SG}/\text{PL}$
d. Uaugmented = $\text{SG}/\text{PL} > \text{DU}$
e. +singular = $\text{SG} > \text{PL}/\text{DU}$
f. −singular = $\text{DU}/\text{PL} > \text{SG}$
g. +augmented = $\text{PL} > \text{SG}/\text{DU}$
h. −augmented = $\text{SG}/\text{DU} > \text{PL}$

Predicated scales with elaborate three-way number probes:

	+augmented	−augmented	Maugmented	Uaugmented
+singular	$\text{SG}/\text{PL} > \text{DU}$	$\text{SG} > \text{DU} > \text{PL}$	$\text{SG}/\text{DU} > \text{PL}$	$\boxed{\text{SG} > \text{PL} > \text{DU}}$
−singular	$\boxed{\text{PL} > \text{DU} > \text{SG}}$	$\text{DU} > \text{PL}/\text{SG}$	$\text{DU} > \text{PL} > \text{SG}$	$\boxed{\text{PL} > \text{DU} > \text{SG}}$
Msingular	$\text{PL}/\text{DU} > \text{SG}$	$\text{DU} > \text{SG} > \text{PL}$	$\text{DU} > \text{SG}/\text{PL}$	$\text{SG}/\text{PL}/\text{DU}$
Usingular	$\text{PL} > \text{SG} > \text{DU}$	$\text{SG} > \text{DU}/\text{PL}$	$\text{SG}/\text{PL}/\text{DU}$	$\text{SG}/\text{PL} > \text{DU}$

Predictions for person scales

Predicted scales with simple person probes:

(73)
a. Mparticipant = $\boxed{2 > 1/3}$
b. Uparticipant = $1/3 > 2$
c. Mauthor = $\boxed{1 > 2/3}$
d. Uauthor = $2/3 < 1$
e. +participant = $\boxed{1/2 > 3}$
f. −participant = $3 > 1/2$
g. +author = $\boxed{1 > 2/3}$
h. −author = $2/3 < 1$

Predicated scales with elaborate person probes:

	+participant	−participant	Mparticipant	Uparticipant
+author	$\boxed{1 > 2 > 3}$	$1/3 > 2$	$\boxed{1/2 > 3}$	$1 > 3 > 2$
−author	$\boxed{2 > 1/3}$	$3 > 1/2$	$2/3 > 1$	$3 > 2 > 1$
Mauthor	$\boxed{1 > 2 > 3}$	$1/3 > 2$	$\boxed{1/2 > 3}$	$1 > 3 > 2$
Uauthor	$\boxed{2 > 1/3}$	$3 > 2 > 1$	$2 > 3 > 1$	$3 > 1/2$