Omnivorous Person, Number, and Gender
The view from Mundari

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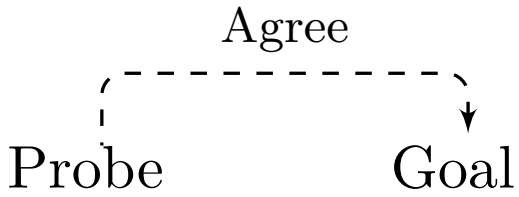
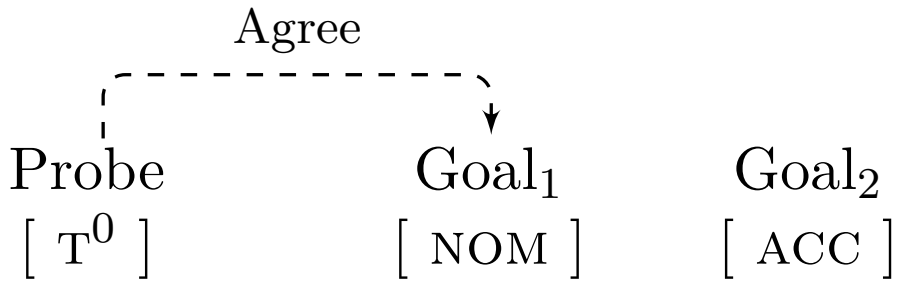
Agree: Probe-Goal

(1)



(2) NOM-ACC



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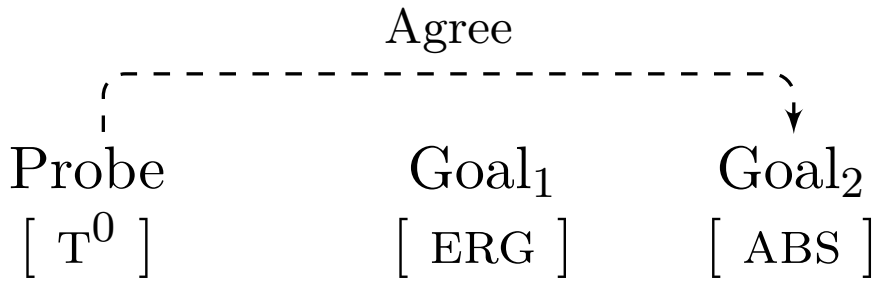
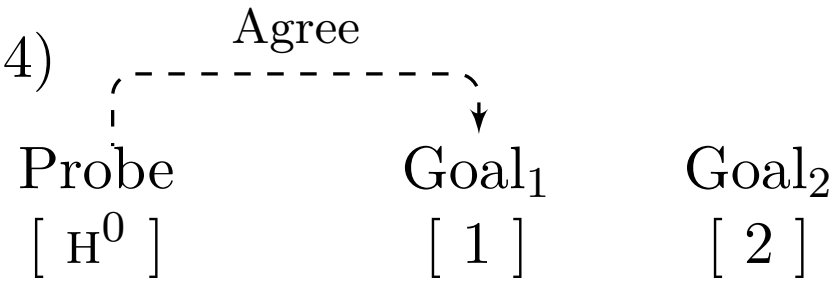


Omnivorous pattern: Person

(4)



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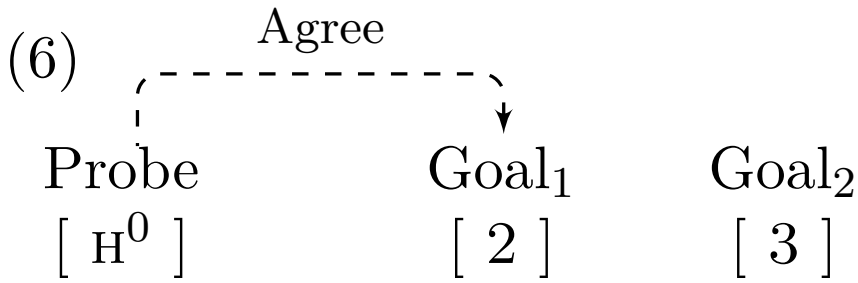

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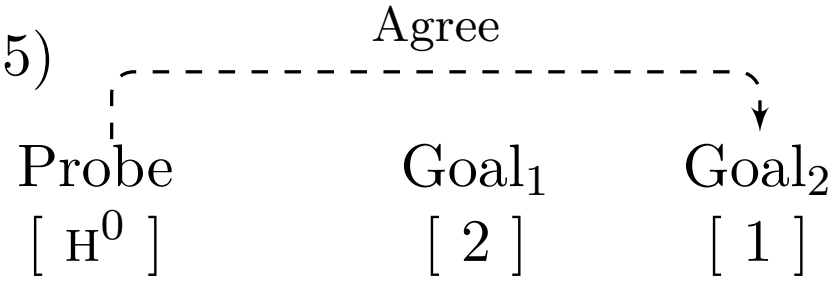

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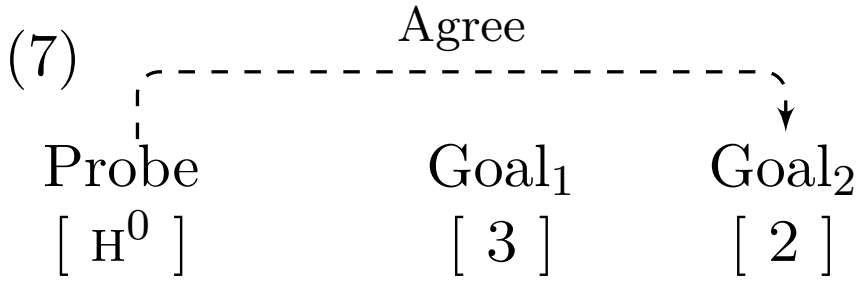
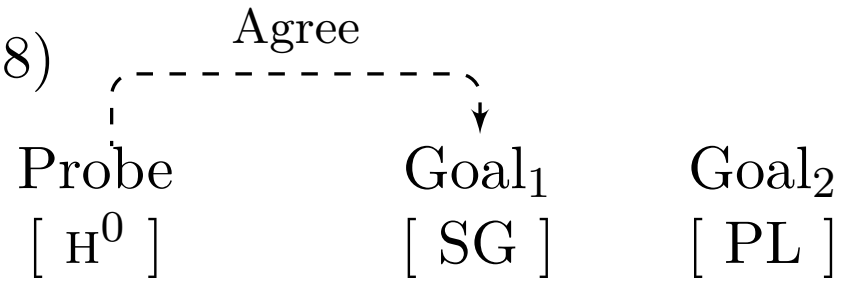


☞ Person: $1 > 2 > 3$

Omnivorous pattern: Number

(8)



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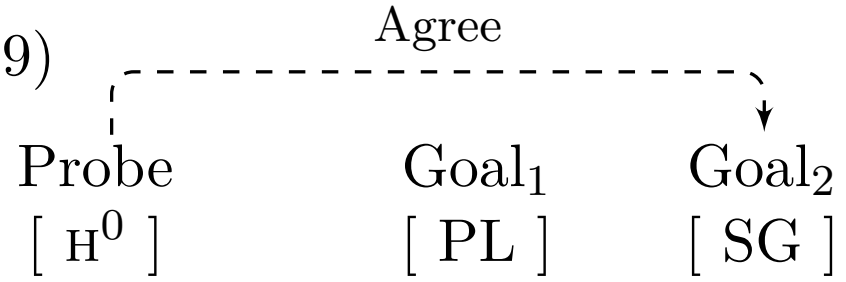

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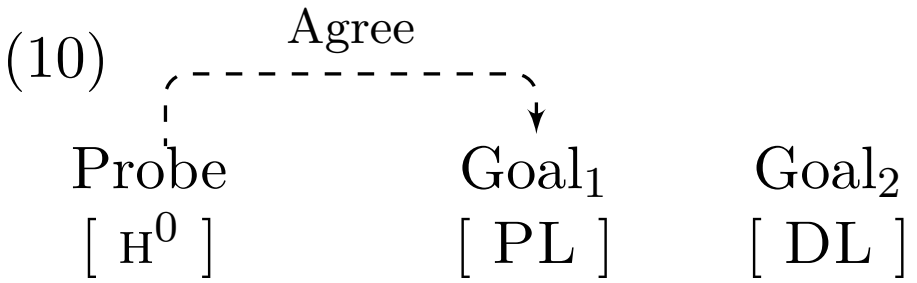

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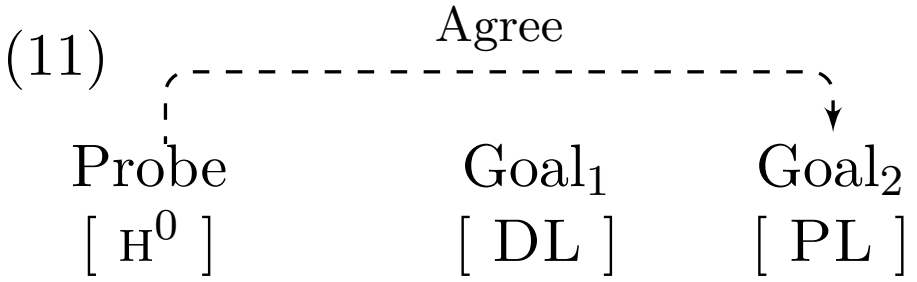


☞ Number: SG > PL > DL

Person and Number combinations

Person scale: $1 > 2 > 3$

Number scale: SG > PL > DL

☞ 1SG and 2PL = ?

☞ 1PL and 2SG = ?

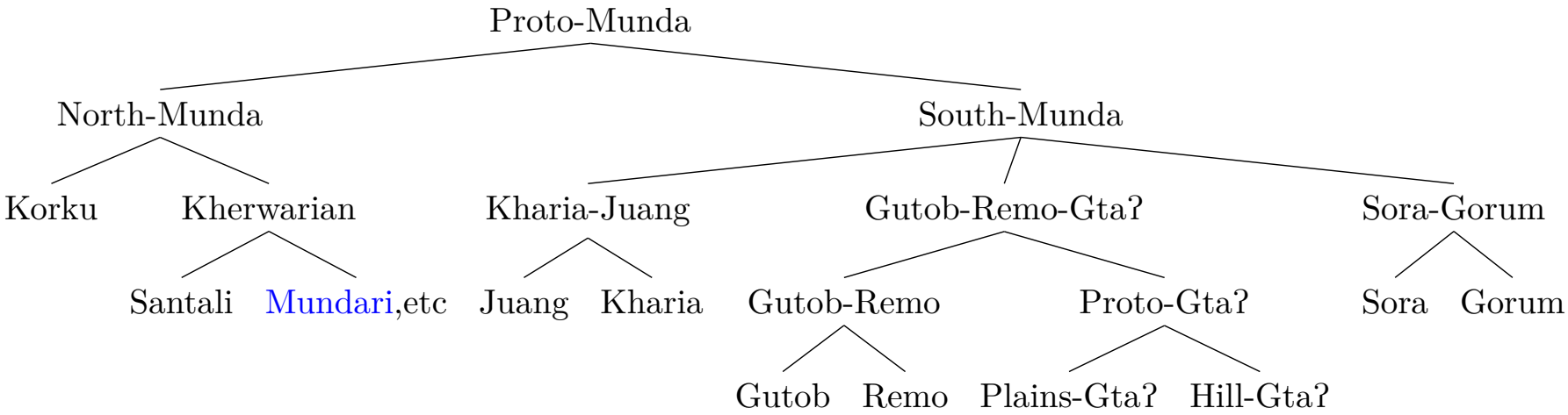
Structure of the talk

1. Typological overview of Mundari.
2. Person, number and gender omnivorous patterns.
3. Agree model based on Deal's *interaction and satisfaction*
4. Derivation
5. Cross-linguistic extension
6. Conclusion

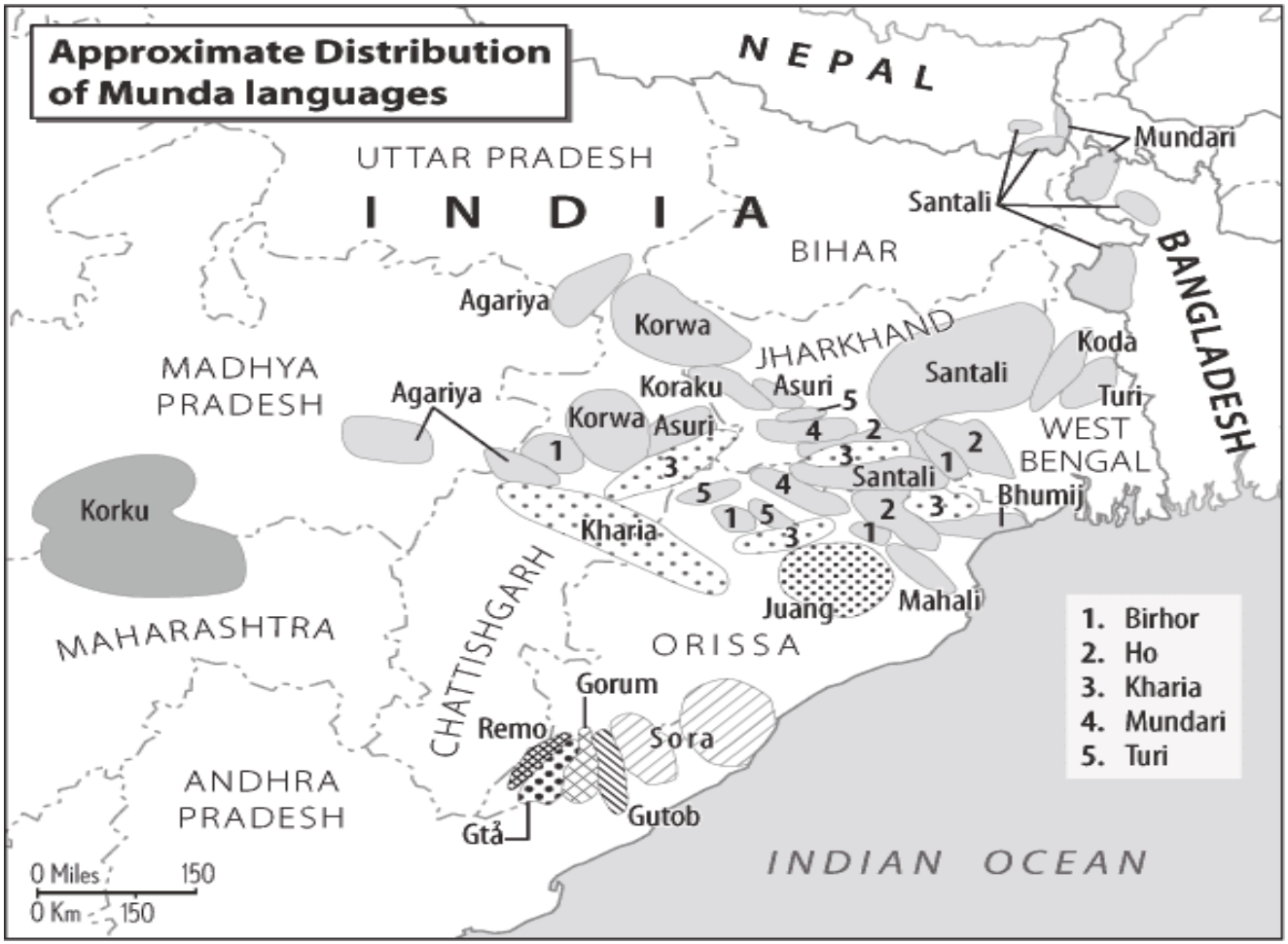
Austroasiatic language family

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

Munda languages



Munda languages



Simple transitive sentence

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

- SOV, no case inflection, dual marking, complex verbal domain.

Clitics paradigm: SM and OM

	SG	DL	PL
1(incl)	-ñ	-laŋ	-bu
1(excl)		-laŋ	-le
2	-m	-ben	-pe
3	-eʔ/-iʔ/-e/-i	-kin	-ko

Pronominal paradigm

	SG	DL	PL
1(incl)	añ	alaŋ	abu
1(excl)		alaŋ	ale
2	am	aben	ape
3	aeʔ	akin	ako

Subject clitic: Type 5 distribution

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

(14) pusi-kin seta-ko-kin hua-ke-d-ko-a
cat-DL dog-PL-3DL.SM bite-COMPL-TR-3PL.OM-IND
'The two cats bit the dogs.' (Osada 2008: 108 (9))

(15) kumbuɽu-kin hola-kin sab-ja-n-a
thief-DL yesterday-3DL.SM catch-INGR-ITR-IND
'Two thieves were caught yesterday' (Osada 2008: 122 (39))

☞ Klavans (1985) Type 5 clitic

Object clitic: Is it DO or IO ?

(16) Subject Direct Object Indirect Object Verb-OM

Kidwai (2005): It is the direct object that is referred by the object marking.
Gosh (2008): It is the indirect object that is referred by the object marking.
Osada (2008): It could be either DO or IO depending on the aspect.

Person: 1st and 2nd person

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

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

☞ 1st person outranks the 2nd person

Person: 2nd and 3rd person

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

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

☞ 2nd person outranks the 3rd person

Person: 1st and 3rd person

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

b. hon-ko Ravi ke aiɲ ke-ko
children-PL Ravi EMP 1SG EMP-3PL.SM
ɛm-a-[iɲ]-ta-n-a
give-BEN-[1SG.OM]-PROG-ITR-IND
'Children are giving Ravi to me.' 3SG DO & 1SG IO

☞ 1st person outranks the 3rd person

Mundari person hierarchy: $1 > 2 > 3$

Number: Singular and Plural

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

b. aiɲ hon-ko ke Ravi ke-iɲ
1SG children-PL EMP Ravi EMP-1SG
ɛm-a-[i]-ta-n-a
give-BEN-[3SG.OM]-PROG-ITR-IND
'I am giving children to Ravi.' 3PL DO & 3SG IO

☞ Singular outranks Plural

Number: Plural and Dual

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

b. aiɲ bilai-ko ke hon-kin-iɲ
1SG cat-PL EMP children-PL-1SG.SM
ɛm-a-[ko]-ta-n-a
give-BEN-[3PL.OM]-PROG-ITR-IND
'I am giving cats to two children.' 3PL DO & 3DL IO

☞ Plural outranks Dual

Number: Singular and Dual

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

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

☞ Singular outranks Dual

Mundari number hierarchy: SG > PL > DL

Gender: Animate and Inanimate

(23) a. aiɲ bilai-ko ke oɽak'-iɲ
1SG cat-PL EMP house-1SG.SM
ɛm-a-ko-ta-n-a
give-BEN-3PL.OM-PROG-ITR-IND
'I am giving cats to the house.' Anim DO & Inanim IO

b. aiɲ oɽak bilai-ko ke-iɲ
1SG house cat-PL EMP-1SG.SM
ɛm-a-ko-ta-n-a
give-BEN-3PL.OM-PROG-ITR-IND
'I am giving a house to the cats.' Inanim DO & Anim IO

☞ Animate outranks Inanimate

Lower ranked arguments

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

(25) aiɲ oɽak daru ke-iɲ ɛm-a-ta-n-a
1SG house tree EMP-1SG.SM give-BEN-PROG-ITR-IND
'I am giving a house to the tree.' Inanim DO & Inanim IO

☞ No agreement with Inanimate arguments

(26) *Person*

DO	IO	OM
1	2	1
2	1	1

DO	IO	OM
2	3	2
3	2	2

DO	IO	OM
1	3	1
3	1	1

(27) *Number*

DO	IO	OM
SG	PL	SG
PL	SG	SG

DO	IO	OM
PL	DL	PL
DL	PL	PL

DO	IO	OM
SG	DL	SG
DL	SG	SG

(28) *Gender*

DO	IO	OM
Animate	Inanimate	Animate
Inanimate	Animate	Animate

DO	IO	OM
1	2	1
2	1	1

DO	IO	OM
SG	PL	SG
PL	SG	SG

☞ Higher ranked: 1 and SG

☞ Lower ranked: 2 and PL

DO	IO	OM
1SG	2PL	?
2PL	1SG	?

DO	IO	OM
2SG	1PL	?
1PL	2SG	?

Higher ranked vs Lower ranked: 1SG and 2PL

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

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

☞ Agreement with higher ranked argument

Mismatch: 2SG and 1PL

(30) a. hon-ko am ke abu ke-ko
children-PL 2SG EMP 1PL EMP-3PL.SM
ɛm-a-[bu]-ta-n-a
give-BEN-[1PL.OM]-PROG-ITR-IND
'Children are giving you(SG) to us.' 2SG DO & 1PL IO

b. hon-ko abu ke am ke-ko
children-PL 1PL EMP 2SG EMP-3PL.SM
ɛm-a-[m]-ta-n-a
give-BEN-[2SG.OM]-PROG-ITR-IND
'Children are giving us to you(SG).' 1PL DO & 2SG IO

☞ Agreement with an indirect object

Higher ranked vs Lower ranked

DO	IO	OM
1SG	2PL	1SG
2PL	1SG	1SG

DO	IO	OM
1SG	3PL	1SG
3PL	1SG	1SG
2PL	3DL	2PL
3DL	2PL	2PL

☞ Omnivorous agreement

Mismatch

DO	IO	OM
2SG	1PL	1PL
1PL	2SG	2SG

DO	IO	OM
3SG	1PL	1PL
1PL	3SG	3SG
2SG	1PL	1PL
1PL	2SG	2SG

☞ No omnivorous agreement

Data summary

☞ In the ditransitive construction, the choice between IO and DO for the OM slot is determined by the following hierarchies:

- Person hierarchy: $1 > 2 > 3$
- Number hierarchy: SG > PL > DL

☞ Given these scales, the DO can be cross-referenced by the OM slot if and only if the DO ranks at least as highly as the IO on both the person and number scales; otherwise, OM will simply resort to IO.

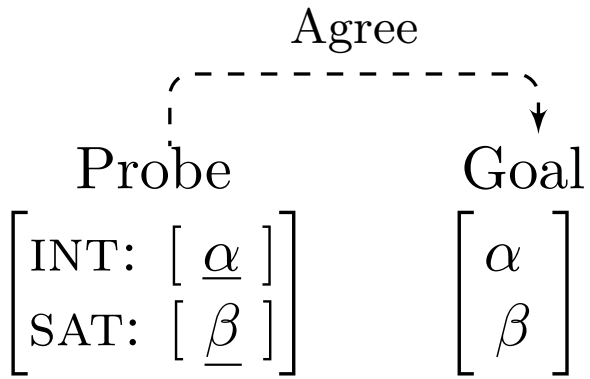
☞ The hierarchies and their interaction are subject to gender restriction, where only animate arguments can be cross-referenced by OM.

Deal (2015, 2021)

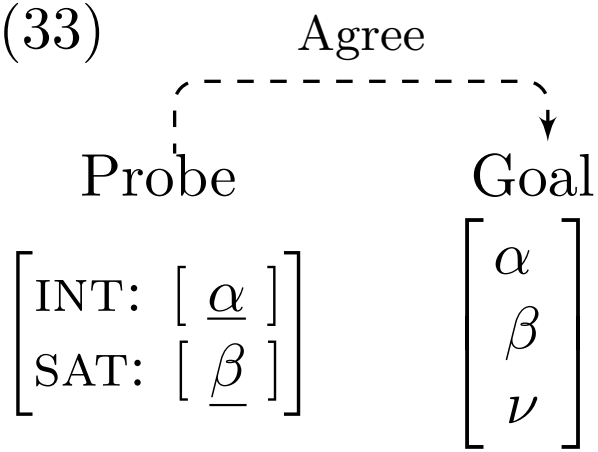
(31) a. Interaction: A probe H interacts with feature F by copying F back to H.

b. Satisfaction: A probe H is satisfied by feature G iff copying G back to H terminates further probing for G by H.

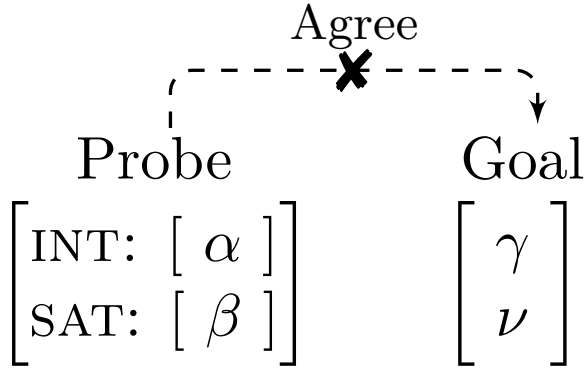
(32)


Agree
Probe
Goal
INT: [α]
SAT: [β]
α
β

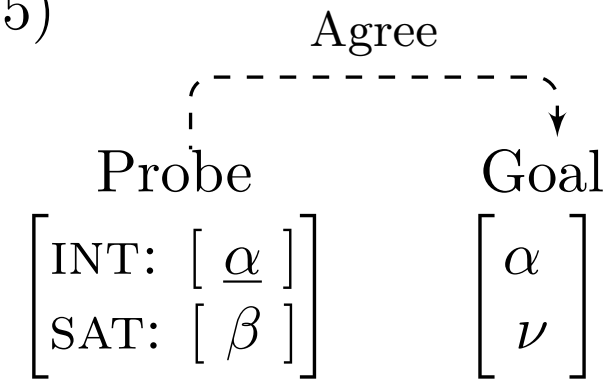
(33)


Agree
Probe
Goal
INT: [α]
SAT: [β]
α
β
ν

(34)


Agree
Probe
Goal
INT: [α]
SAT: [β]
γ
ν

(35)



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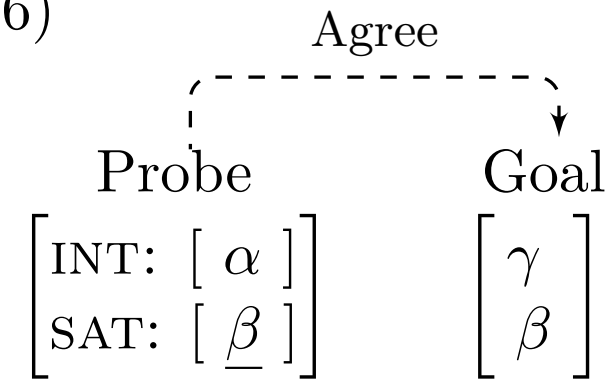

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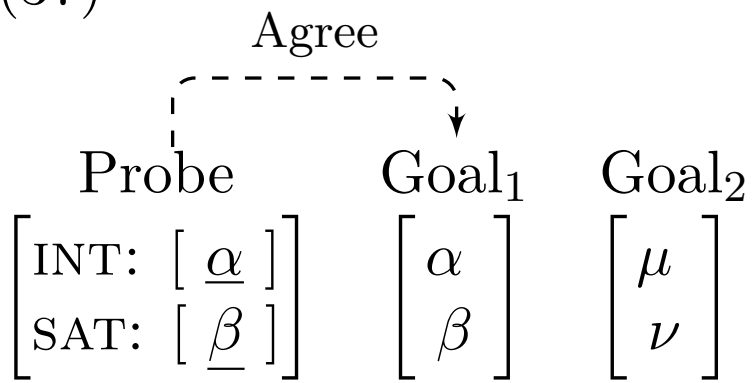
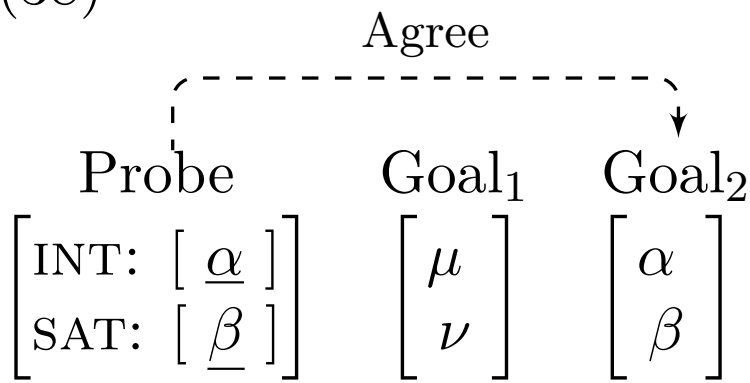
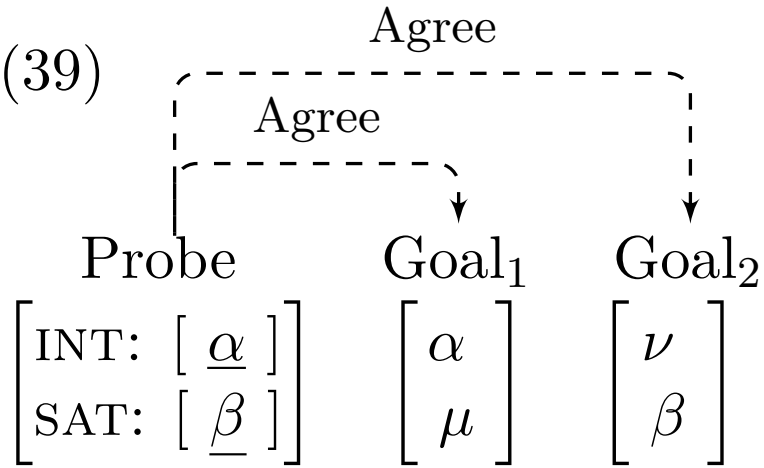

Agree
Probe
Goal$_1$
Goal$_2$
INT: [$\underline{\alpha}$]
SAT: [$\underline{\beta}$]
α
β
μ
ν

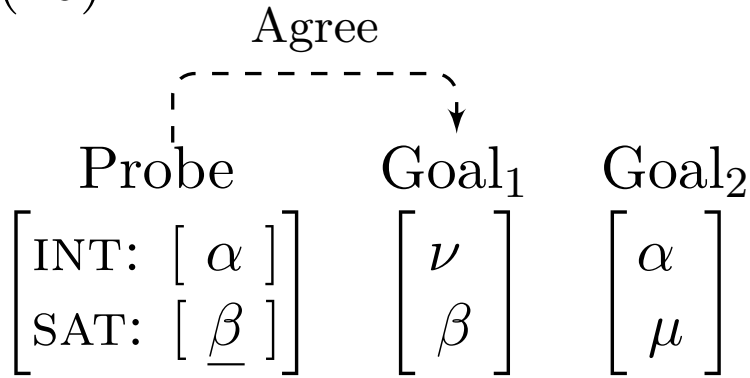
(38)


Agree
Probe
Goal$_1$
Goal$_2$
INT: [$\underline{\alpha}$]
SAT: [$\underline{\beta}$]
μ
ν
α
β

(39)

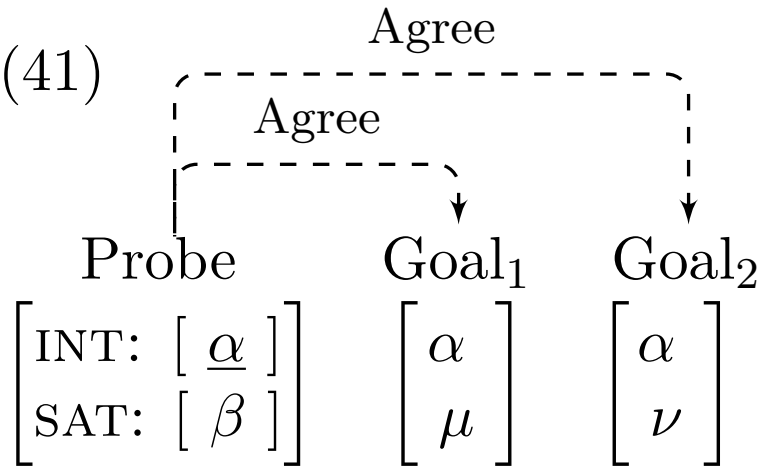

Agree
Agree
Probe
Goal$_1$
Goal$_2$
INT: [$\underline{\alpha}$]
SAT: [$\underline{\beta}$]
α
μ
ν
β

(40)


Agree
Probe
Goal$_1$
Goal$_2$
INT: [α]
SAT: [$\underline{\beta}$]
ν
β
α
μ

☞ Restriction: Interaction cannot be for the same feature [α] with more than one goal.

(41)



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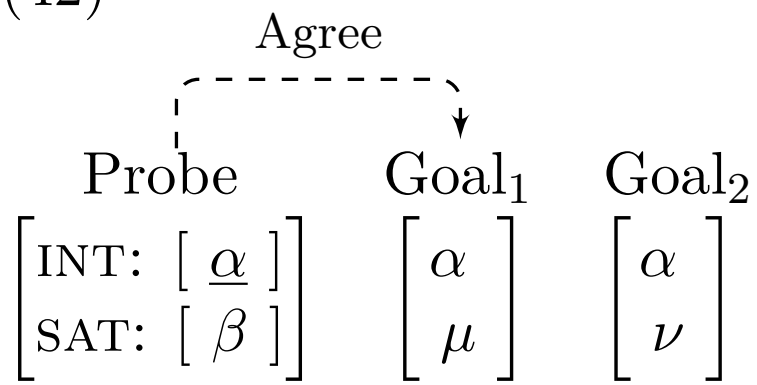
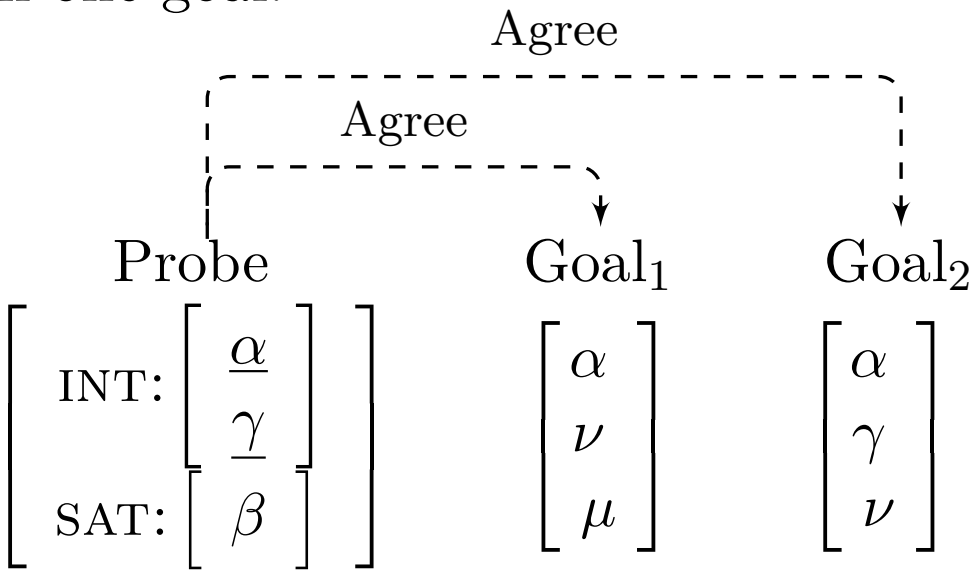


☞ Restriction: Interaction cannot be for the same feature [α] with more than one goal.

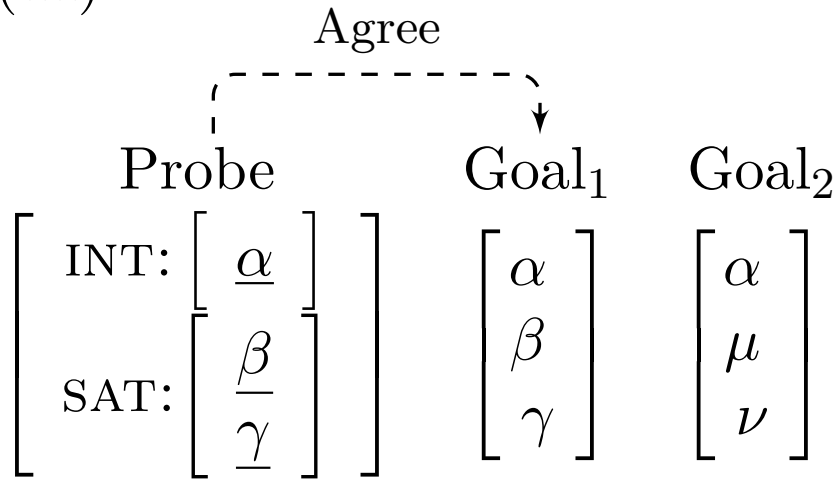
(43)



☞ This restriction does not stop further probing. It only prevents interaction for the same feature twice.

☞ Extension: The probing will only stop when all the satisfaction features of the probe have undergone Agree.

(44)



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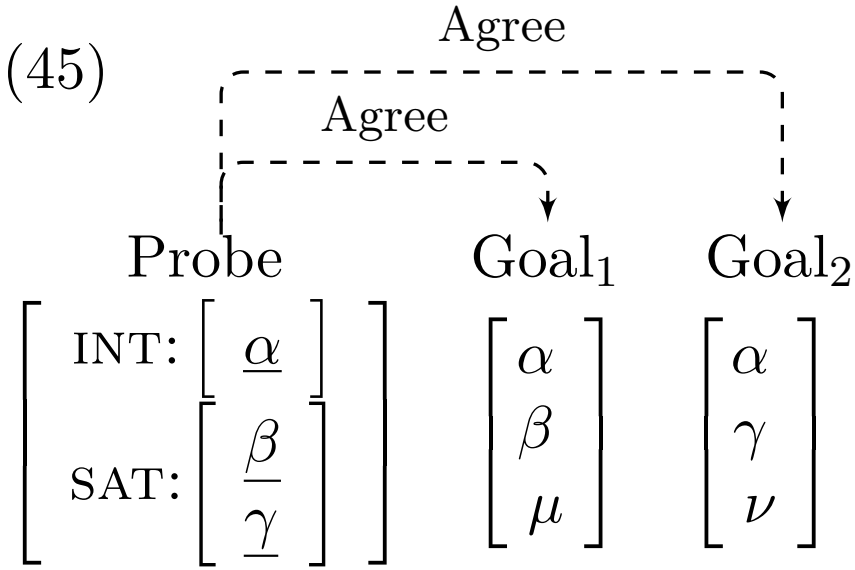
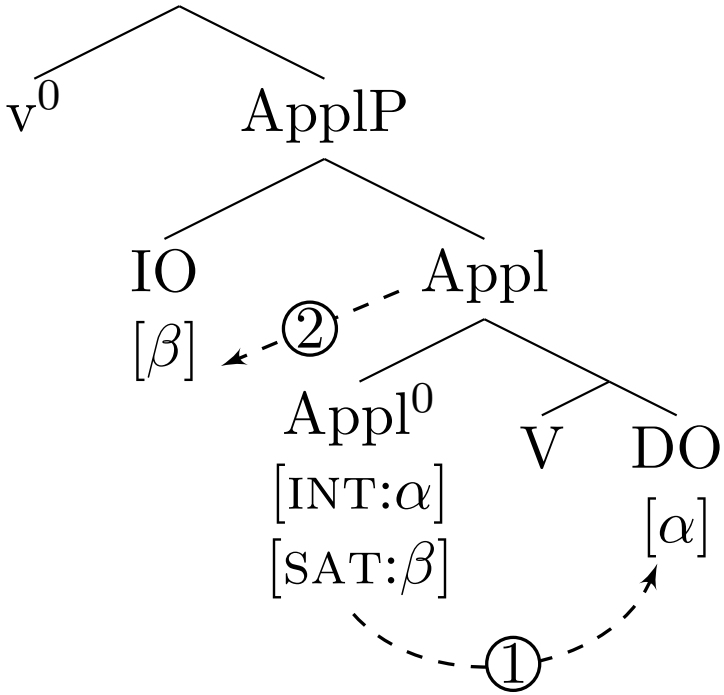


(46) Ditransitive construction



☞ Simple transitives: VERB-ASPECT-VALENCY-OM-MOOD

☞ Ditransitives: VERB-BENEFACTIVE-OM-ASPECT-VALENCY-MOOD

☞ When IO binds DO, DO can no longer linearly precede IO.

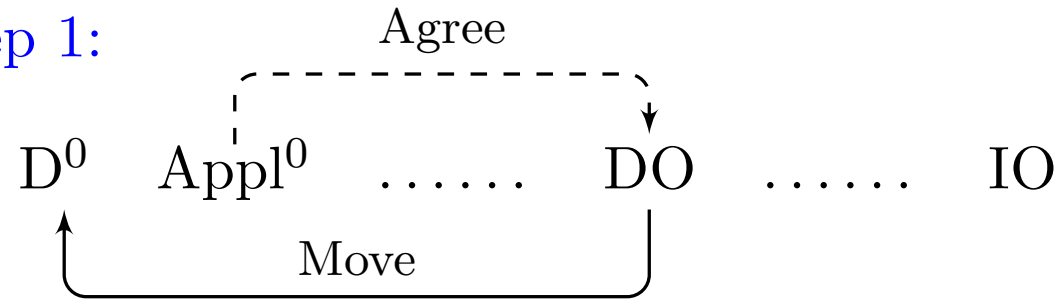
(47) a. *aiɲ inku-aʔ$_i$-puti hon-ko$_i$-iɲ
1SG their-GEN-books children-3PL-1SG
ɛm-a-ko-ta-n-a
give-BEN-3PL-PROG-ITR-IND
'I am giving their$_i$ books to children$_i$.'

b. aiɲ hon-ko$_i$ inku-aʔ$_i$-puti-iɲ
1SG children-3PL their-GEN-books-1SG
ɛm-a-ko-ta-n-a
give-BEN-3PL-PROG-ITR-IND
'I am giving their$_i$ books to children$_i$.'

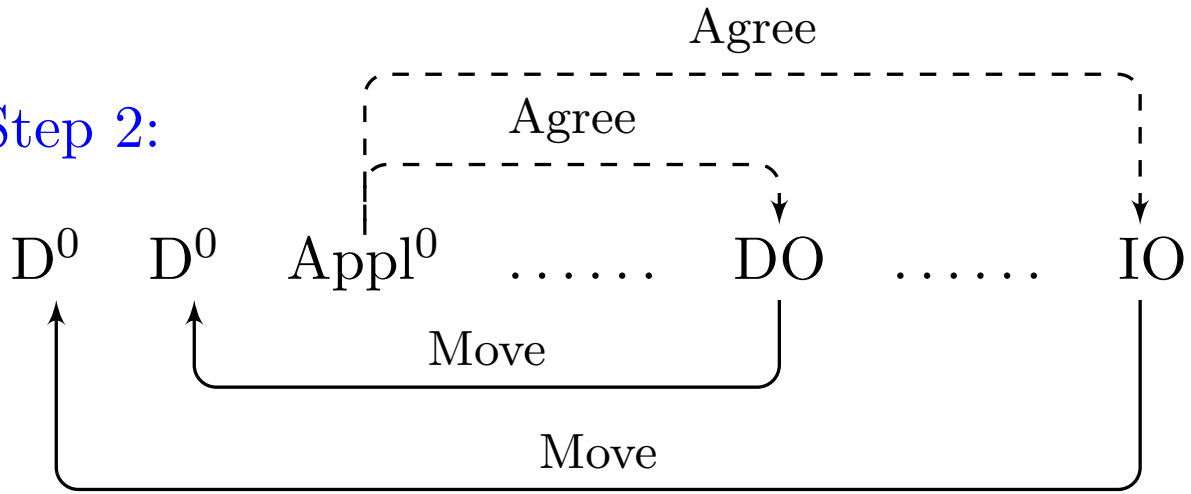
☞ Base order IO ≺ DO.

Clitic movement

(48) Step 1:



(49) Step 2:



(50) Step 3: $D^0 \longrightarrow \emptyset / [_{Appl}\ D^0\ [\ \_\ Appl]\ ]$

Bivalent feature system

(51) Person features

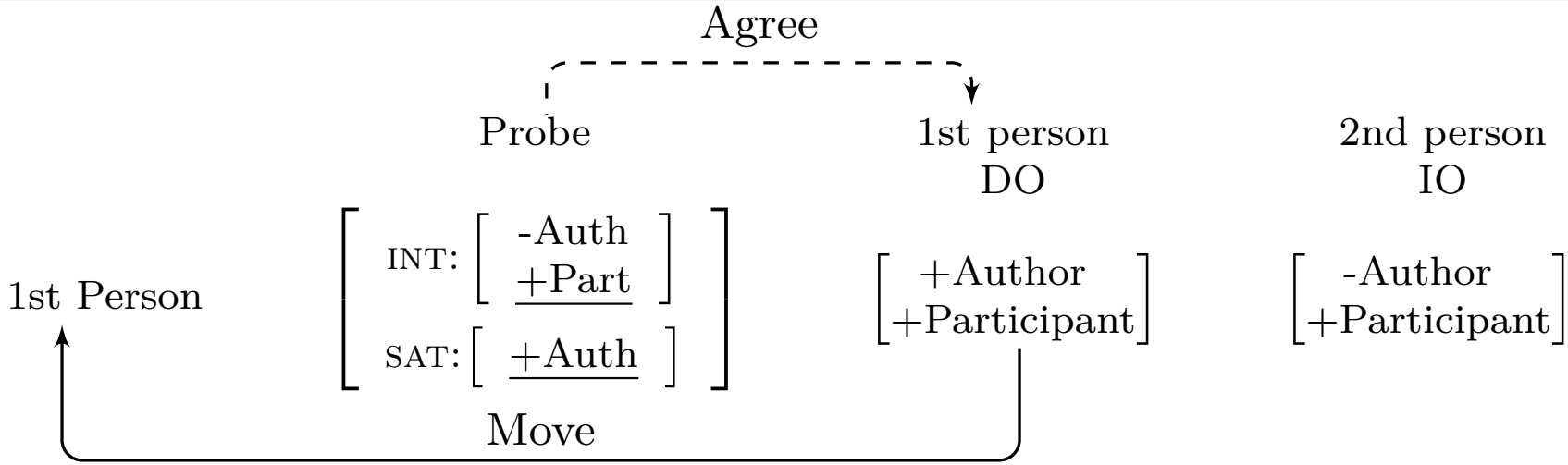
1st Person	2nd Person	3rd Person
[+Author]	[-Author]	[-Author]
[+Participant]	[+Participant]	[-Participant]

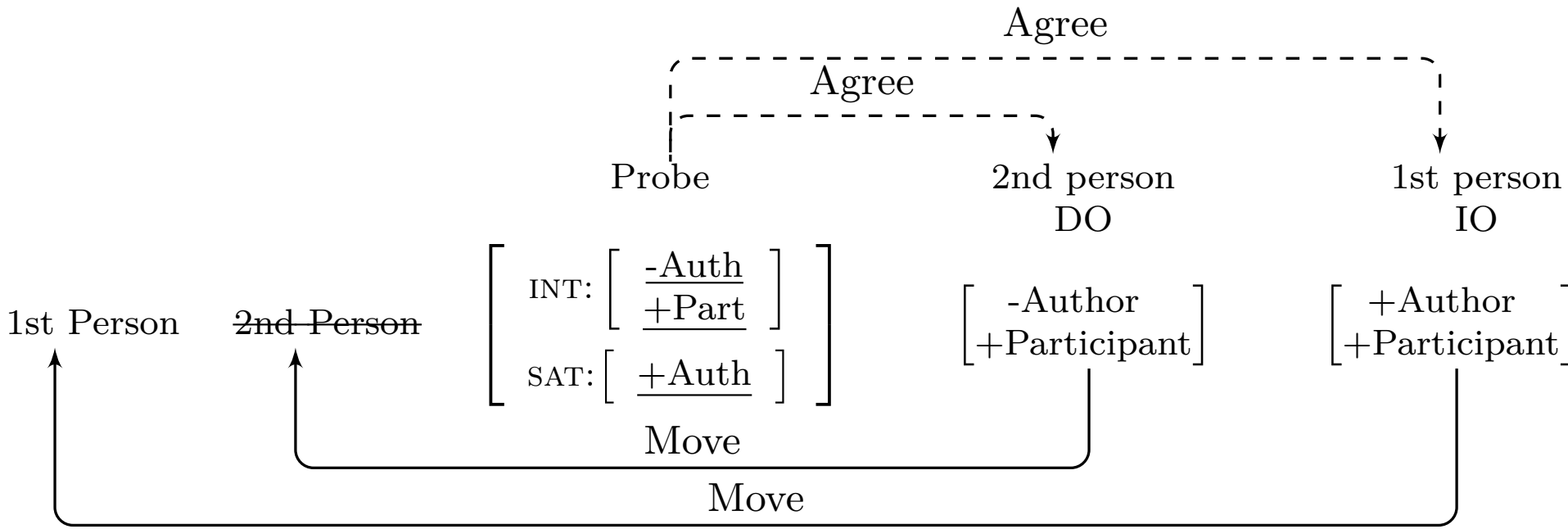
(52) Person Probe

$$\begin{bmatrix} \text{INT:} \begin{bmatrix} \text{-Auth} \\ \text{+Part} \end{bmatrix} \\ \text{SAT:} \begin{bmatrix} \text{+Auth} \end{bmatrix} \end{bmatrix}$$

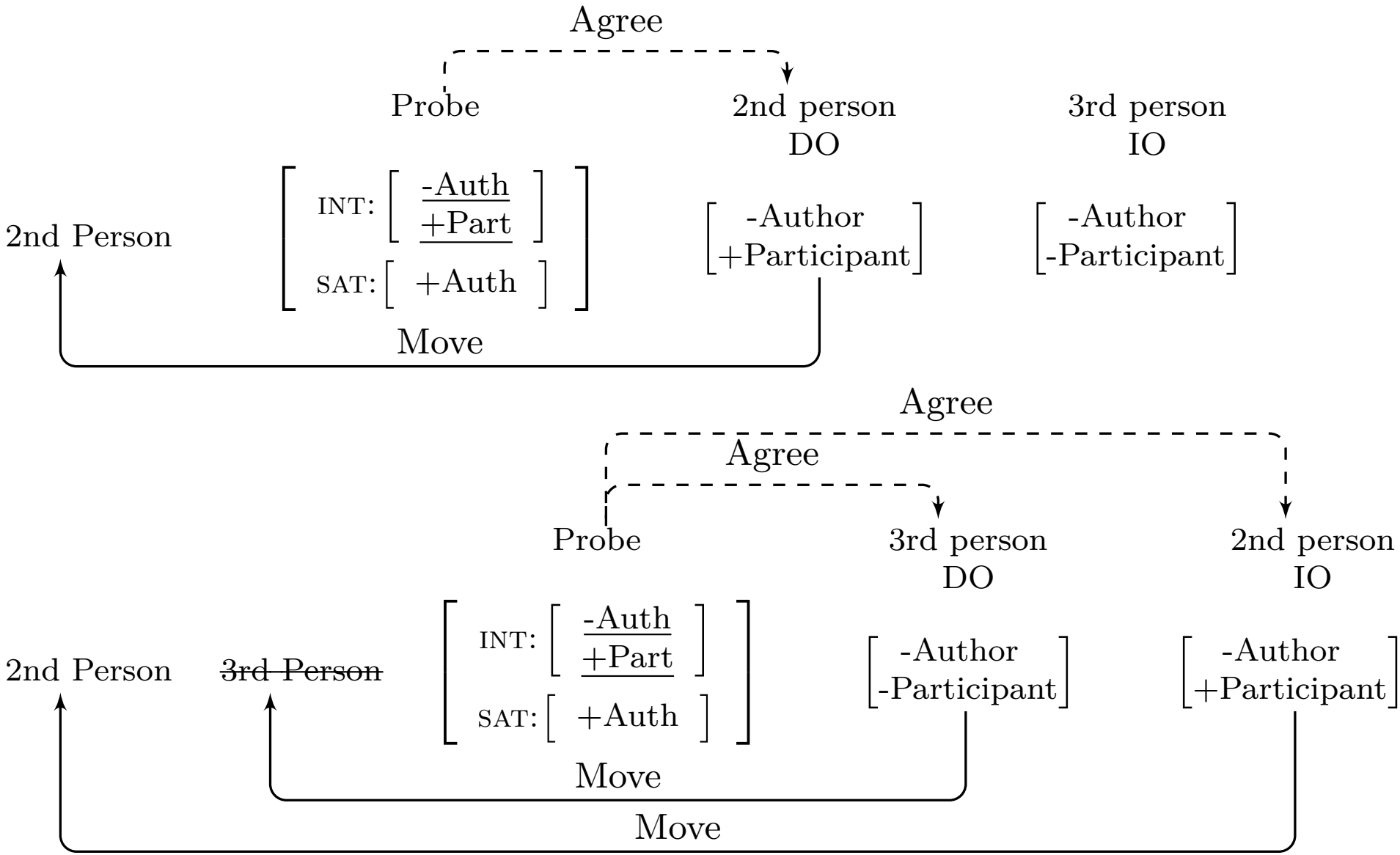
☞ With this specification of the probe, the person hierarchy can be straightforwardly derived

1 > 2

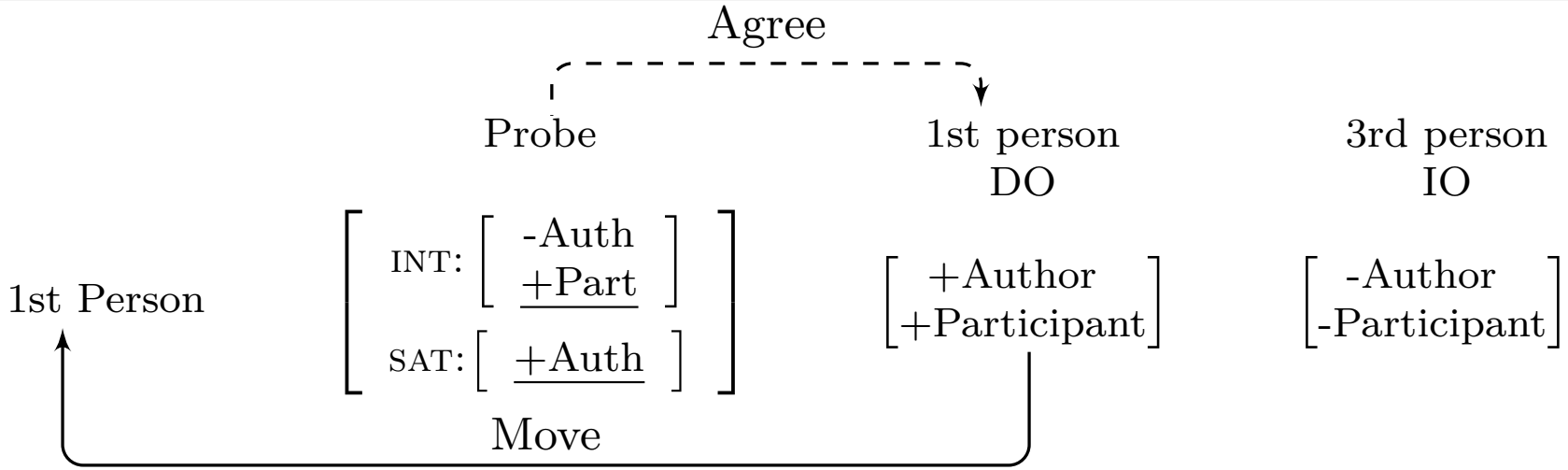

Agree
Probe
1st person
DO
2nd person
IO
1st Person
INT: -Auth +Part
SAT: +Auth
+Author +Participant
-Author +Participant
Move

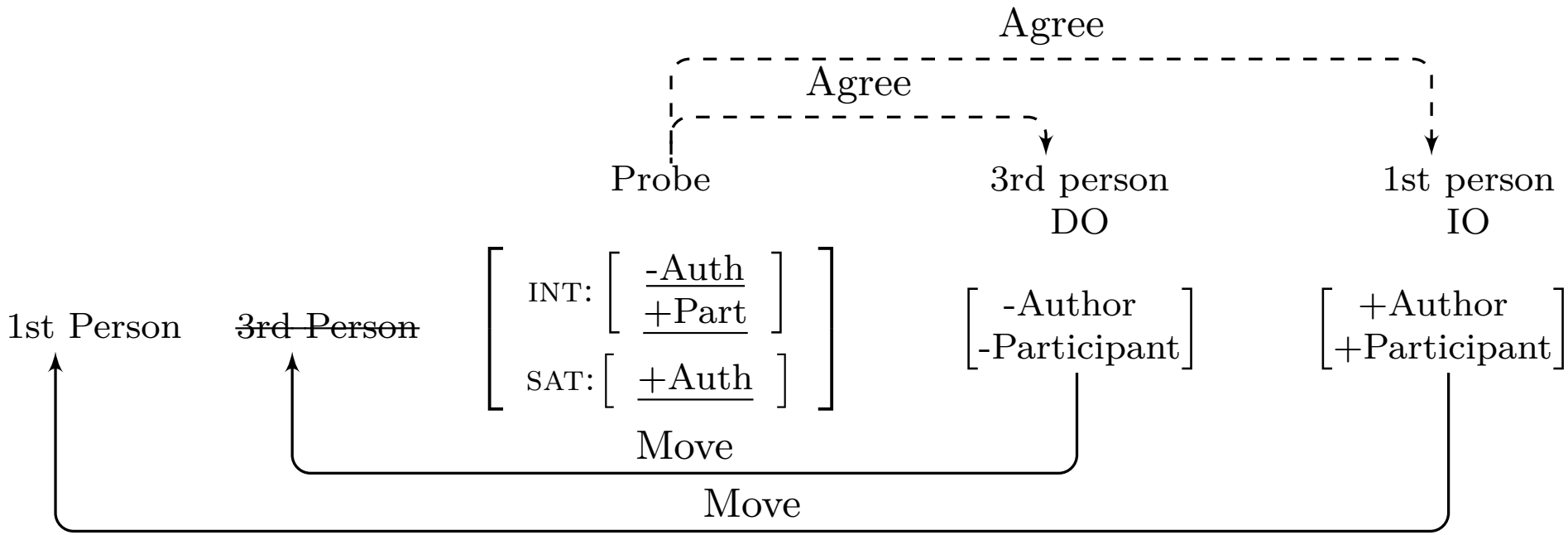

Agree
Agree
Probe
2nd person
DO
1st person
IO
1st Person
2nd Person
INT: -Auth +Part
SAT: +Auth
-Author +Participant
+Author +Participant
Move
Move

2 > 3


Agree
Probe
2nd person
DO
3rd person
IO
2nd Person
INT: -Auth +Part
SAT: +Auth
-Author +Participant
-Author -Participant
Move
Agree
Agree
Probe
3rd person
DO
2nd person
IO
2nd Person
3rd Person
INT: -Auth +Part
SAT: +Auth
-Author -Participant
-Author +Participant
Move
Move

1 > 3


Agree
Probe
1st person
DO
3rd person
IO
1st Person
INT:
-Auth
+Part
SAT:
+Auth
+Author
+Participant
-Author
-Participant
Move


Agree
Agree
Probe
3rd person
DO
1st person
IO
1st Person
3rd Person
INT:
-Auth
+Part
SAT:
+Auth
-Author
-Participant
+Author
+Participant
Move
Move

☞ Thus, the proposed Agree model along with the characterization of the person probe straightforwardly derives $1 > 2 > 3$.

Harbour (2008, 2011, 2014)

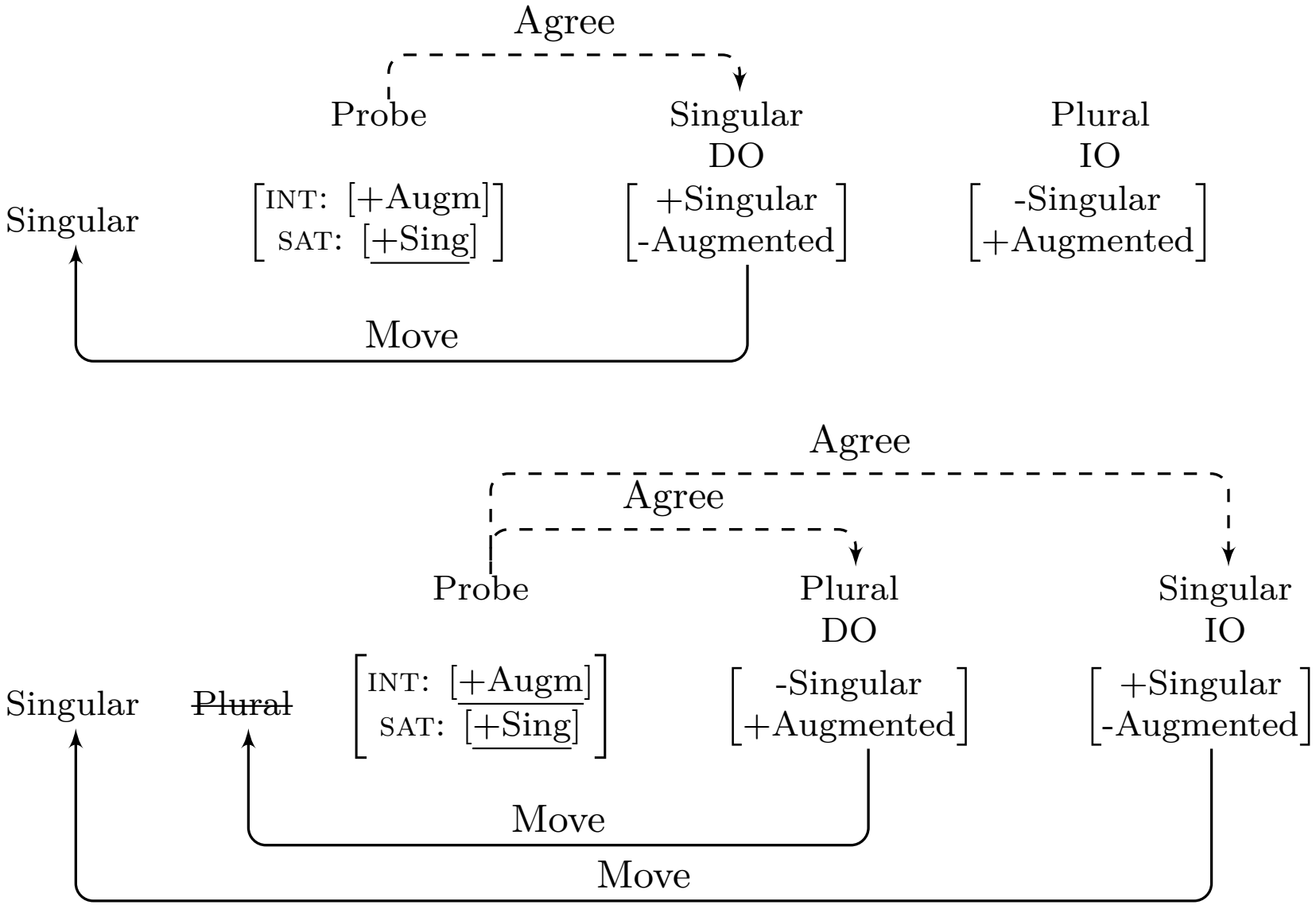
(53) Number features

Singular	Dual	Plural
[+Singular]	[-Singular]	[-Singular]
[-Augmented]	[-Augmented]	[+Augmented]

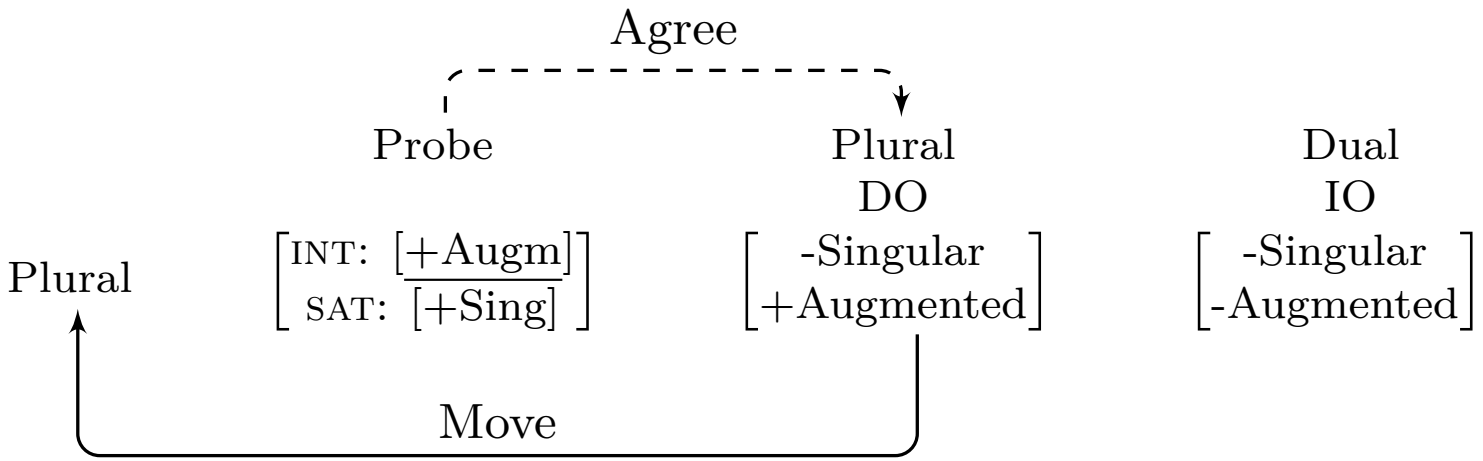
(54) Number Probe

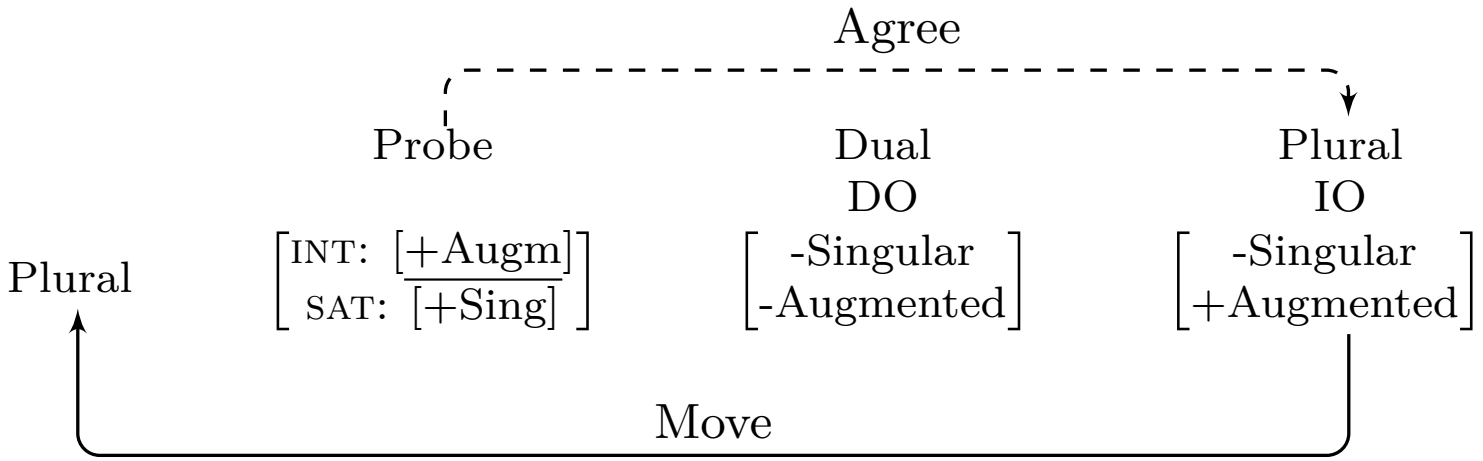
$$\begin{bmatrix} \text{INT:}[+\text{Augm}] \\ \text{SAT:}[+\text{Sing}] \end{bmatrix}$$

SG > PL

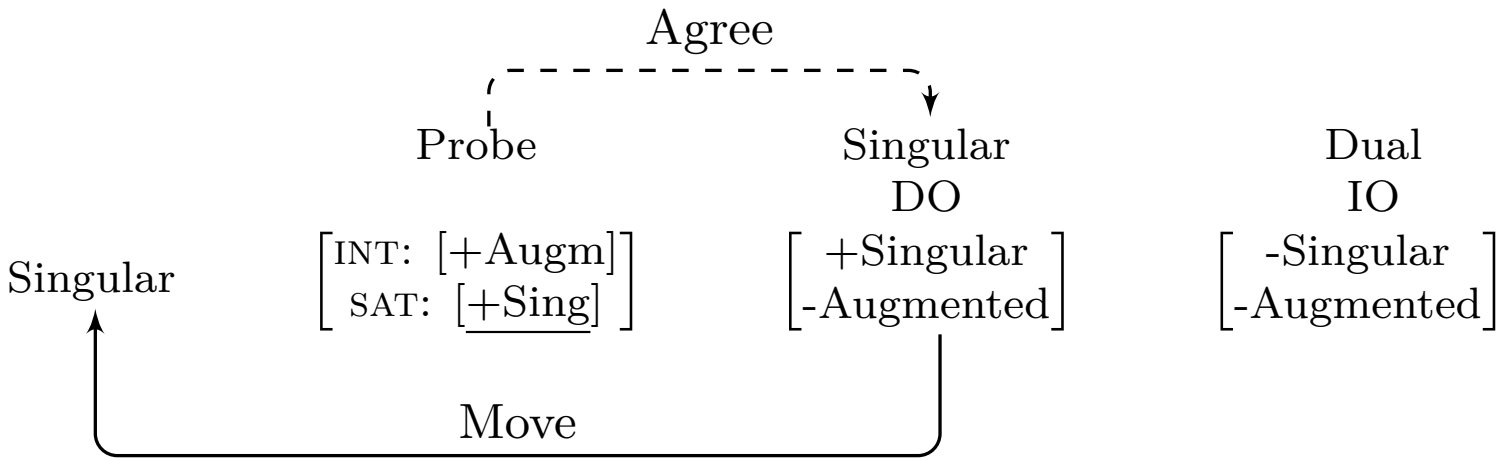

Agree
Probe
Singular
DO
Plural
IO
Singular
INT: [+Augm]
SAT: [+Sing]
+Singular
-Augmented
-Singular
+Augmented
Move
Agree
Agree
Probe
Plural
DO
Singular
IO
Singular
Plural
INT: [+Augm]
SAT: [+Sing]
-Singular
+Augmented
+Singular
-Augmented
Move
Move

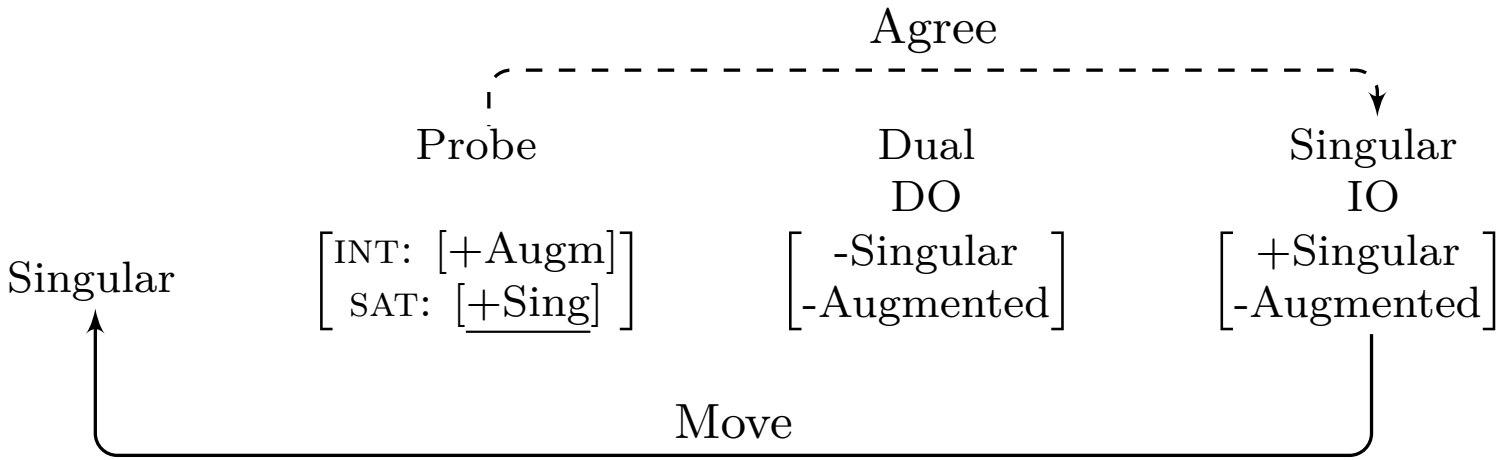
PL > DL


Agree
Probe
Plural
DO
Dual
IO
Plural
INT: [+Augm]
SAT: [+Sing]
-Singular
+Augmented
-Singular
-Augmented
Move


Agree
Probe
Dual
DO
Plural
IO
Plural
INT: [+Augm]
SAT: [+Sing]
-Singular
-Augmented
-Singular
+Augmented
Move

SG > DL


Agree
Probe
Singular DO
Dual IO
Singular
INT: [+Augm]
SAT: [+Sing]
+Singular
-Augmented
-Singular
-Augmented
Move


Agree
Probe
Dual DO
Singular IO
Singular
INT: [+Augm]
SAT: [+Sing]
-Singular
-Augmented
+Singular
-Augmented
Move

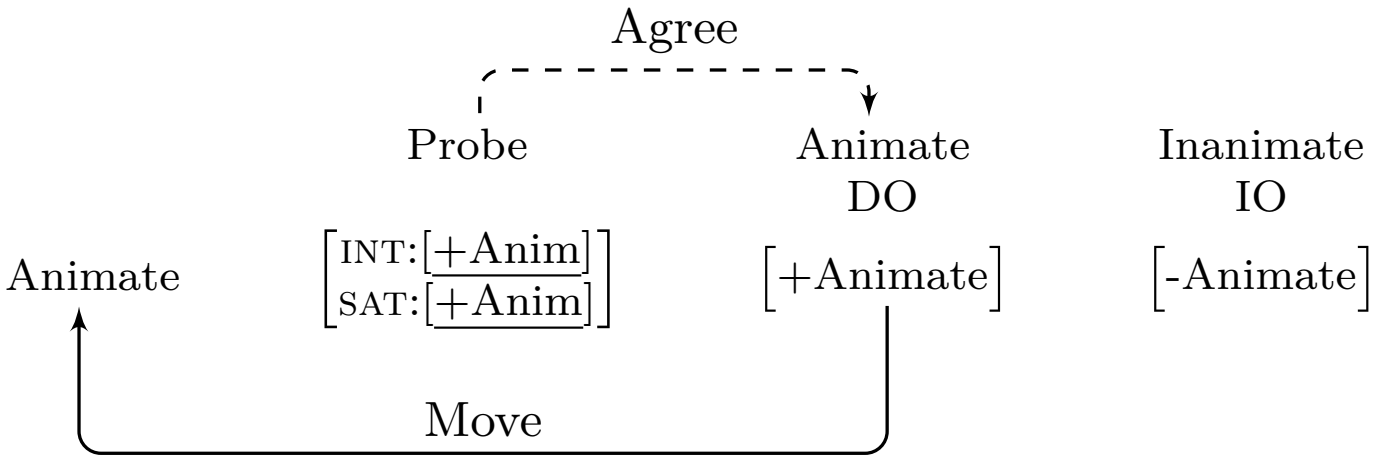
☞ Again, our Agree system can derive SG > PL > DL

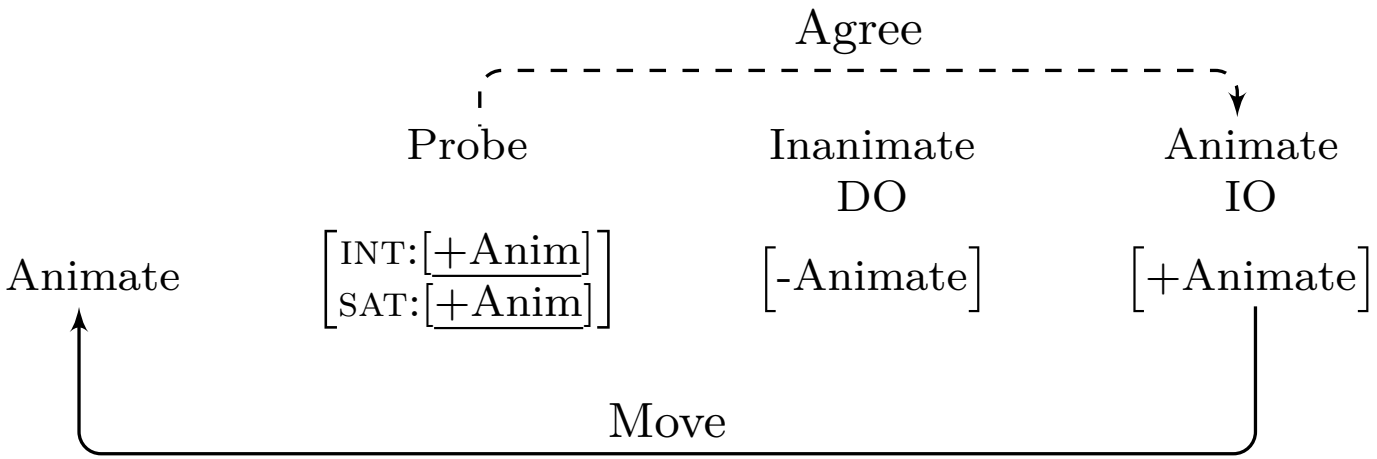
(55) Gender features

Animate	Inanimate
[+Animate]	[-Animate]

(56) Gender Probe

$$\begin{bmatrix} \text{INT:}[+\text{Anim}] \\ \text{SAT:}[+\text{Anim}] \end{bmatrix}$$


Agree
Probe
Animate
DO
Inanimate
IO
Animate
INT:[+Anim]
SAT:[+Anim]
[+Animate]
[-Animate]
Move


Agree
Probe
Inanimate
DO
Animate
IO
Animate
INT:[+Anim]
SAT:[+Anim]
[-Animate]
[+Animate]
Move

☞ Our Agree model accounts for gender restriction as well.

Higher ranked vs Lower ranked

DO	IO	OM
1SG	2PL	1SG
2PL	1SG	1SG

DO	IO	OM
1SG	3PL	1SG
3PL	1SG	1SG
2PL	3DL	2PL
3DL	2PL	2PL

☞ Omnivorous agreement

Mismatch

DO	IO	OM
2SG	1PL	1PL
1PL	2SG	2SG

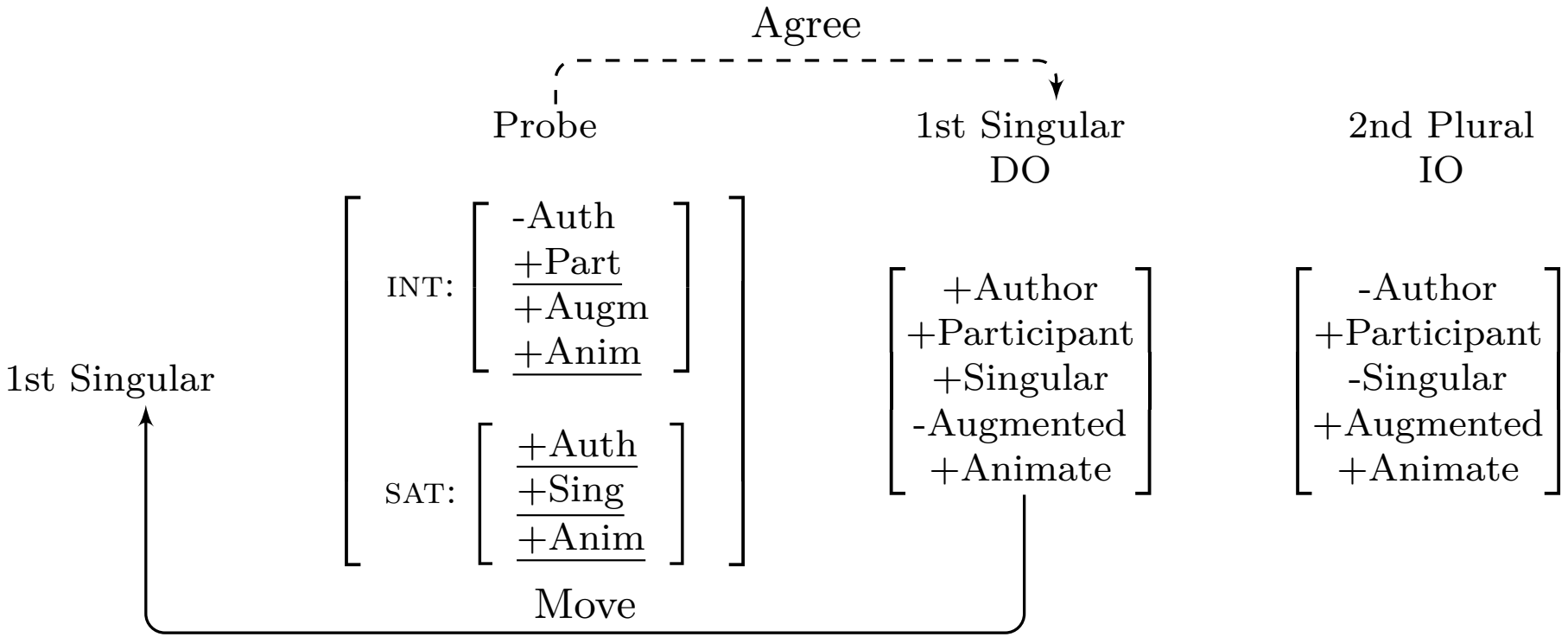
DO	IO	OM
3SG	1PL	1PL
1PL	3SG	3SG
2SG	1PL	1PL
1PL	2SG	2SG

☞ No omnivorous agreement

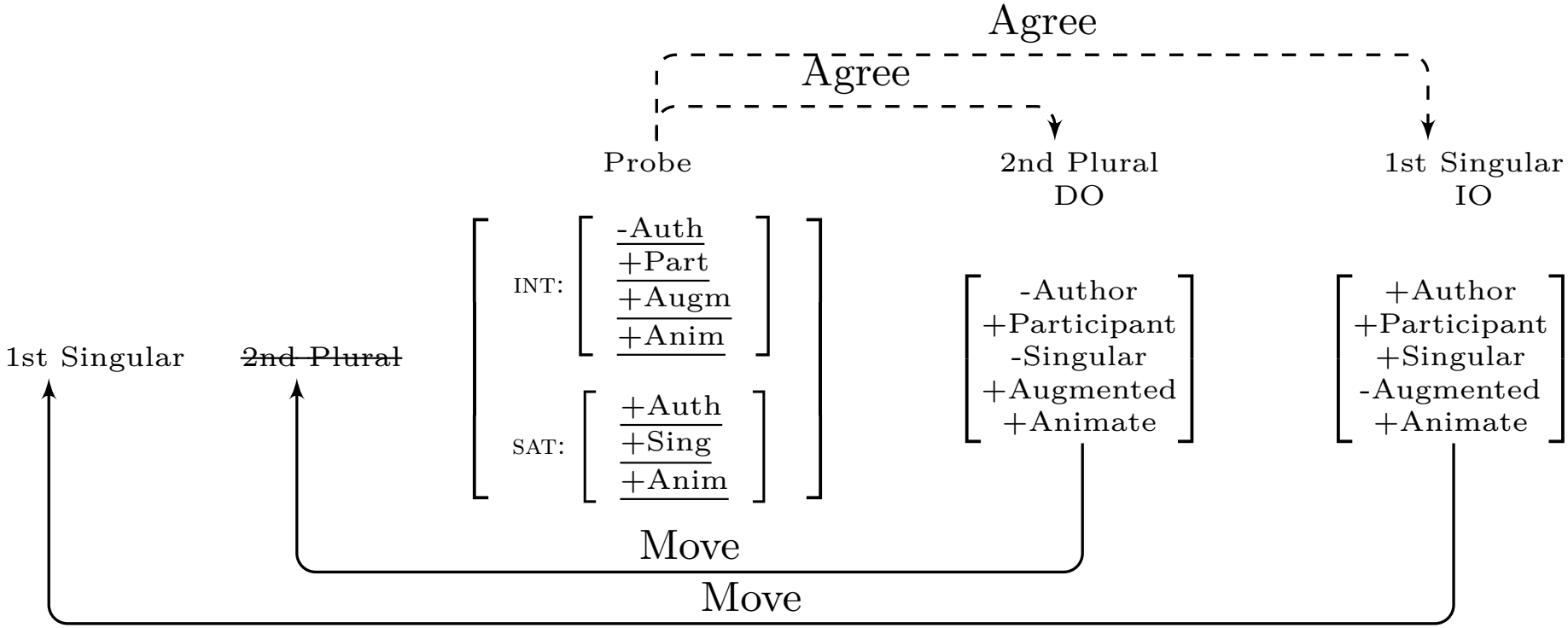
Mundari probe

$$\begin{bmatrix} \text{INT:} \begin{bmatrix} \text{-Auth} \\ \text{+Part} \end{bmatrix} \\ \text{SAT:} \begin{bmatrix} \text{+Auth} \end{bmatrix} \end{bmatrix} + \begin{bmatrix} \text{INT:[+Augm]} \\ \text{SAT:[+Sing]} \end{bmatrix} + \begin{bmatrix} \text{INT:[+Anim]} \\ \text{SAT:[+Anim]} \end{bmatrix} = \begin{bmatrix} \text{INT:} \begin{bmatrix} \text{-Auth} \\ \text{+Part} \\ \text{+Augm} \\ \text{+Anim} \end{bmatrix} \\ \text{SAT:} \begin{bmatrix} \text{+Auth} \\ \text{+Sing} \\ \text{+Anim} \end{bmatrix} \end{bmatrix}$$

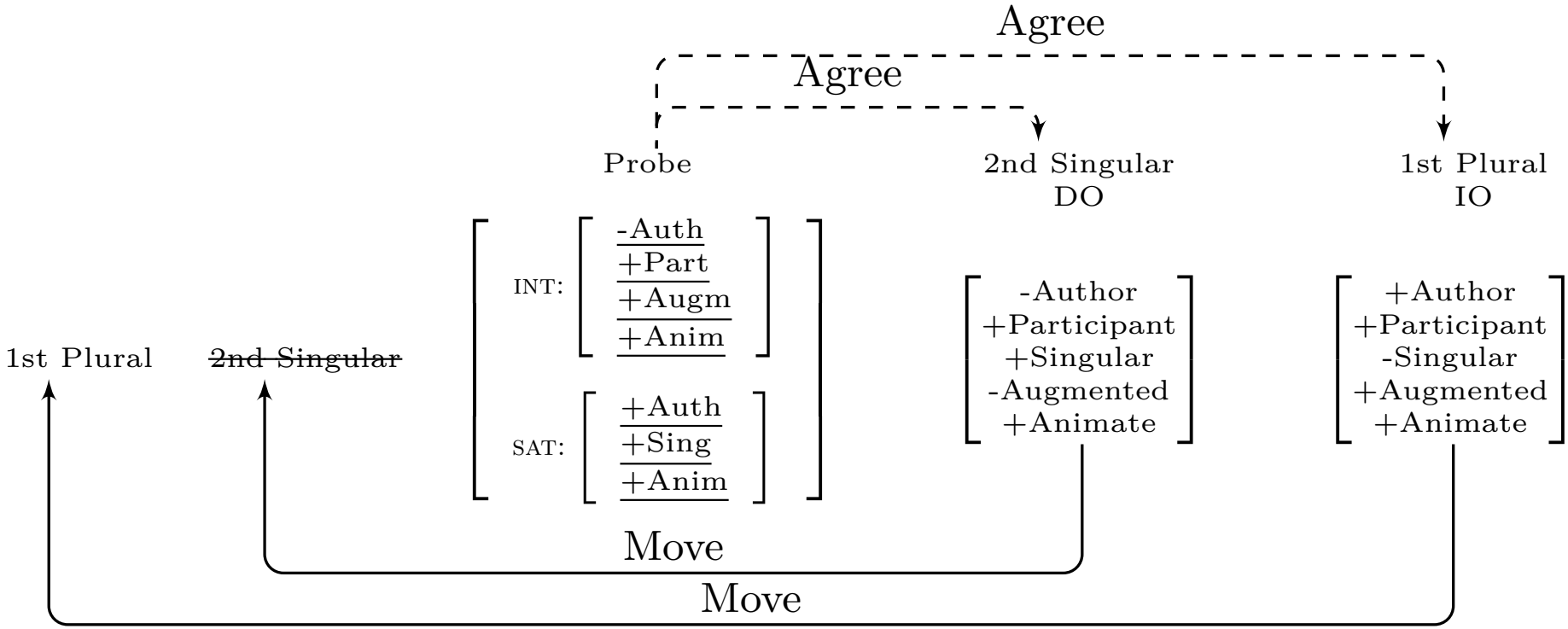
1SG DO and 2PL IO



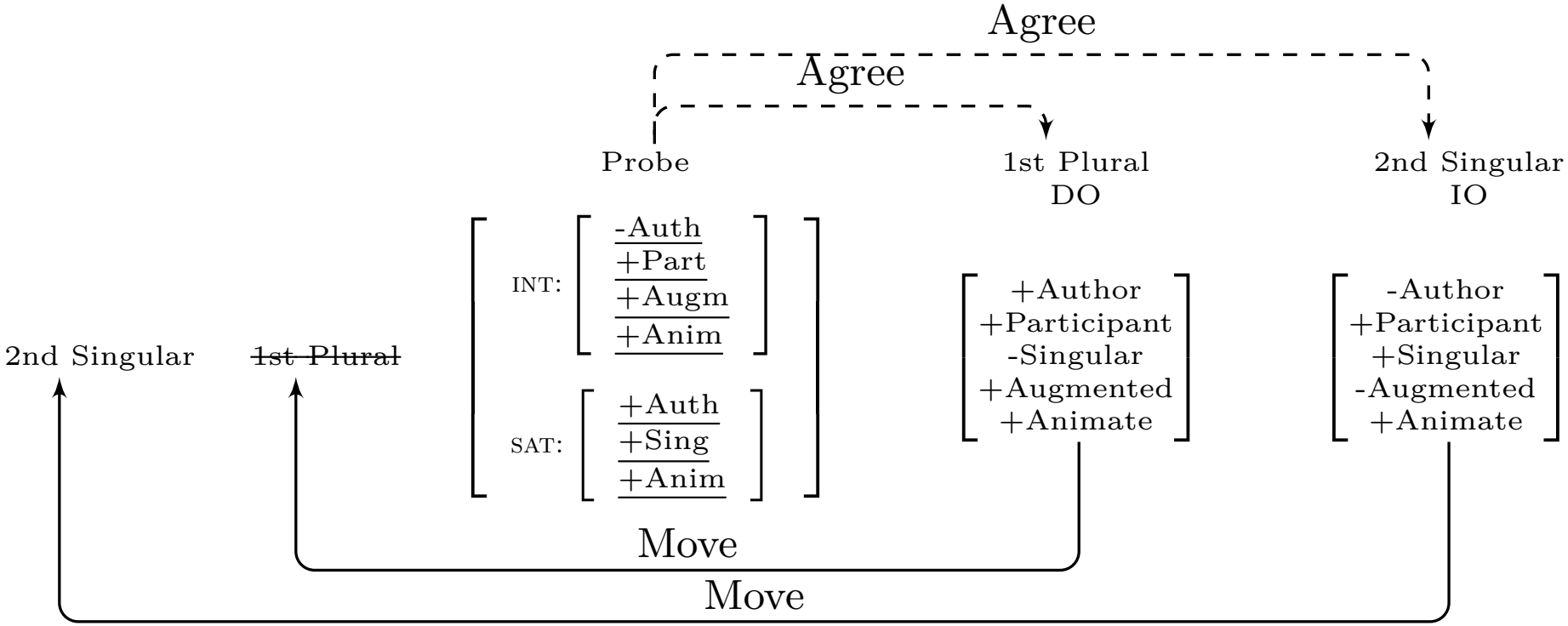
2PL DO and 1SG IO



Mismatch: 2SG DO and 1PL IO



Mismatch: 1PL DO and 2SG IO



Therefore, the proposed Agree model accounted for

- ☞ Person scale: 1 > 2 > 3
- ☞ Number scale: SG > PL > DL
- ☞ Gender restriction based on Animacy
- ☞ person and number interaction

Cross-linguistic omnivorous patterns

Person

1 > 2	2 > 1	1 > 3	2 > 3
Mundari Alutor	Nez Perce	Mundari Nez Perce Kichean AF E.Armenian Alutor Chuckchi	Mundari Nez Perce Kichean AF E.Armenian Alutor Chuckhi

Cross-linguistic omnivorous patterns

Number

SG > PL	PL > SG	PL > DL	SG > DL	DL > SG
Mundari	Kichean AF Nez Perce Georgian Ariellese	Mundari Onondaga	Mundari	Onondaga

Béjar, Susana and Arsalan Kahnemuyipour (2017). Non-canonical agreement in copular clauses. *Journal of Linguistics* 53. 1–37.

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Harbour, Daniel (2011). Valence and Atomic Number. *Linguistic Inquiry* 42(4). 561–594.

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Kidwai, Ayesha (2005). Santali 'Backernagel' Clitics. In R. Singh and T. Bhattacharya (eds). *The yearbook of South Asian Languages and Linguistics*. De Gruyter Mouton: Berlin. 189–217.

Klavans, Judith (1985). The independence of Syntax and Phonology in Cliticization. *Language* 61(1). 95–120.

Osada, Toshiki (2008). Mundari. In G. Anderson (ed.). *The Munda Languages*. Routledge: London. 99–164.

Preminger, Omer (2014). *Agreement and Its Failures*. MIT Press: Cambridge MA.