Omnivorous Person, Number, and Gender: The view from Mundari[1]

Gurujegan Murugesan
gurujegan.m@igntu.ac.in
Indira Gandhi National Tribal University

Abstract: Mundari, an Austroasiatic language spoken by the Mundari tribes from the Jharkhand region of the Indian subcontinent, exhibits an omnivorous pattern for person, number, and gender. This pattern is seen in the ditransitive construction when both indirect and direct objects compete for a single object-marking slot in the verbal complex. The choice between them is determined by complex interplay of hierarchies of person (1>2>3) and number (SG>PL>DL), acting along with an animacy-based gender system. To give a derivational account of these scales and their interaction with each other, I propose an analysis that appeals to clitic doubling as an instance of head movement that necessarily involves prior syntactic φ-agreement (Preminger 2019) and an articulated probe that agrees with a goal for certain features (Béjar and Rezac 2003).

1 Introduction

The term 'omnivorous' was proposed by Nevins (2011), who refers it to an agreement pattern in which the agreement slot is invariably filled by a particular φ-value and that can come from any of the arguments in the agreement domain irrespective of the argument's grammatical role. The following example from Georgian illustrates this pattern, where PL agreement can correspond to either the subject or the object.

(1) g-xedav-t
2OBJ-saw-PL
'I saw you all; We saw y'all; He saw y'all; We saw you.'

(Nevins 2011: 941 (2))

Based on his 'Multiple Agree' approach, Nevins (2011) predicts that an omnivorous agreement pattern is possible only with number but not with person.[2] However, as pointed out by Preminger (2014), there are cases like the Kichean Agent-Focus construction that

[1]I would like to thank the native speakers of Mundari: Christina Guria, Abhishek Swarnim, Neeraj Munda and Anukaran Marki. If not for their enthusiastic response to far too many questions, this work would not have been possible. Also I would like to thank Imke Driemel, Roberta D'Alessandro, Andy Murphy and Sreekar Ragotham for their feedback and comments on this paper.

[2]Nevins's (2011) approach predicts two things: The first is the presence of a person case constraint and absence of number case constraint and the second is that presence of omnivorous number and the absence of omnivorous person. Béjar (2011), in her detailed commentary on Nevins' approach, points out the existence of omnivorous person effect.

exhibit an omnivours person effect. As shown in (2), 2SG agreement seems to track the subject in (2a) and the object in (2b).

(2) a. ja rat x-at-ax-an ri achin
FOC you(SG) COM-2SG-hear-AF the man
'It was you(SG) that heard the man.'

b. ja ri achin x-at-ax-an rat
FOC the man COM-2SG-hear-AF you(SG)
'It was the man that heard you(SG).' (Preminger 2014: 18 (15))

Similar to Georgian and Kichean, Mundari, an Austroasiatic language, exhibits an ominivorous pattern for both person and number in addition to gender. Based on novel fieldwork data, I show that the omnivorous pattern is especially evident in the ditransitive construction, where both the indirect object (IO) and the direct object (DO) compete for a single slot. The choice between IO and DO is determined based on the following scales:

(3) *Mundari hierarchy*

a. Person hierarchy: $1 > 2 > 3$

b. Number hierarchy: SG > PL > DL

Both these scales are subject to an animacy-based gender restriction, where both IO and DO need to be an animate nominal. In other words, these scales operate only when both IO and DO are animate but not when they are inanimate since inanimate nominals do not induce agreement or clitic doubling in Mundari.

As we will see in greater detail in sections 3 and 4, the person and number scale in (3) are different from both the Kichean AF construction and Georgian. In Kichean, there is no hierarchy between the 1st and 2nd person arguments, but in Mundari, the 1st person outranks the 2nd person. In the case of Georgian, the number scale is PL > SG as already seen in (1) but the Mundari number scale in (3b) goes in the other direction. Furthermore, there is no independent person and number scale along with gender restriction either in Kichean or Georgian.[3] The independent scales for different φ-values in Mundari are a rare instance that allow us to determine how each of the φ-value scales interact with one another, especially in the case of a mismatch when an argument of a higher-ranked person with a lower-ranked number competes with an argument of a higher-ranked number with a lower ranked-person (i.e. 1PL vs. 2SG).

To give a derivational account of the scales in (3) and their interaction with one another, I propose an analysis that appeals to clitic doubling as an instance of head movement that necessarily involves prior syntactic φ-agreement (Preminger 2019) and an articulated probe that agrees with a goal for certain specific features (Béjar and Rezac 2003). The remainder of this paper is structured as follows: In section 2, I provide a

[3]The number hierarchy in Kichean is dependent on person being the 3rd person. See section 4.4.1

typological overview of Mundari. In section 3, I present data that qualifies the scales in (3). In section 4, I propose an analysis that derives person, number and gender hierarchies and their interaction with each other. Section 5 is the conclusion.

2 Typological Overview

Mundari belongs to the Kherwarian group of the North Munda branch of the Austroasiatic language family and is mainly spoken in the eastern Indian state Jharkhand. Apart from a handful of descriptive works including Anderson (2007), Osada (1992, 2008), Mundari is one of the many understudied languages of the Indian subcontinent.[4] It is an SOV language with an elaborate set of head-markings affixes occurring as a part of the verbal complex, as shown in the template in (4).

(4) VERB-ASPECT-VALENCY-OM-MOOD-SM

In the above template, OM and SM correspond to subject marking and object marking, where the φ-features of the subject and the object are cross-referenced. As the following examples illustrate, there is covariance between the φ-features of subject and object with SM and OM respectively.[5]

(5) a. 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.'

b. pulis-ko kumbuɽu-kin sab-ja-d-kin-a-ko
police-PL thief-DL catch-INGR-TR-3DL.OM-IND-3PL.SM
'The policemen have caught the two thieves.'

As pointed out by Osada (2008), the distribution of SM can freely alternate as a suffix to any preverbal constituent. For instance, in both the above examples, SM can also occur as a suffix to objects. Compare (5), where the subject marker appears on the verb, with (6), where it surfaces on the direct object.

(6) a. 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))

b. pulis-ko kumbuɽu-kin-ko sab-ja-d-kin-a
police-PL thief-DL-3PL.SM catch-INGR-TR-3DL.OM-IND
'The policemen have caught the two thieves.'
(Osada 2008: 121 (38))

[4] Though 1991 census of Government of India reports that there are about 861,378 Mundari speakers, the language is under severe threat since the speech communities that maintained their language for centuries are eventually yielding to the pressure of switching over to socially dominant Hindi.

[5] There is also no case-marking on the subject and the object.

There is also no categorical restriction that governs the distribution of SM, as it can be suffixed even to an adverb in the preverbal position.

(7) 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))

This particular distribution of SM in Mundari relates it to Klavans's (1985) Type 5 clitic.[6] In Klavans typology, clitics are classified into 8 distinct types based on following three parameters,

(8) a. Parameter 1: If the clitic is in an initial or final position in a sentence.
b. Parameter 2: If the clitic is before or after a given constituent.
c. Parameter 3: If the clitic is proclitic or enclitc.

Given these parameters, for the Type 5 clitic, Klavans points out to the distribution of an indirect object clitic in Nganhcara, an Australian language. In Nganhcara, similar to SM in Mundari, the clitic occurs either sentence finally as a suffix to the verb (9a) or as a suffix to any preverbal constituent (9b)-(9f).

(9) *Nganhcara clitic distribution*
a. nhila pama-ng nhingu pukpe-wu kuʔa wa:-ngu
he.NOM man-ERG him.DAT child-DAT dog give-DAT.3SG
'The man gave the do to the child'
b. nhila pama-ng nhingu pukpe-wu kuʔa-ngu wa:
c. nhila pama-ng kuʔa nhingu pukpe-wu-ngu wa:
d. nhila pama-ng kuʔa pukpe-wu nhingu-ngu wa:
e. kuʔa nhingu pukpe-wu nhila pama-ng-ngu wa:
f. kuʔa nhingu pukpe-wupama-ng nhila-ngu wa:
(Smith and Johnson 1979), (Klavans 1985: 104 (22-27))

For parameter 1, the clitic in Nganhcara is considered to be sentence final as its distribution is dependent on the verb which is sentence final. For parameter 2, the clitic occurs both before and after the verbal constituent and for parameter 3, it is an enclitic and not a proclitic. Therefore, Klavans classifies this particular distributional property of clitic to be Type 5. Since SM in Mundari also has the same distribution, it also qualifies to be a Type 5 clitic.

The OM in Mundari, however, does not freely alternate like SM but they both share the same morphological expressions. The SM and OM paradigm is given in (10), which in

[6] See Murugesan (2020), who accounts for the distribution of SM clitic in terms of postsyntactic movements. In Kidwai (2005, 2020), the same phenomena in Santali is analyzed as a stranded clitic.

fact corresponds to the pronominal paradigm given in (11) except for the initial vowel.[7] Therefore, it is safe to assume that OM is also clitic, though not a type 5 clitic like SM.[8]

(10) SM *and* OM *paradigm* (Osada 2008: 120 (3.16))

	Singular	Dual	Plural
1(inclusive)	-ñ	-laŋ	-bu
1(exclusive)		-laŋ	-le
2	-m	-ben	-pe
3	-eʔ/-iʔ/-e/-i	-kin	-ko

(11) *Pronominal paradigm* (Osada 2008: 109 (3.7))

	Singular	Dual	Plural
1(inclusive)	añ	alaŋ	abu
1(exclusive)		alaŋ	ale
2	am	aben	ape
3	aeʔ	akin	ako

3 Omnivorous pattern

In the literature on Munda languages, there has been no consensus regarding which of the two internal arguments is cross-referenced as OM in ditransitive constructions. Kidwai (2005) observes that it is the DO that occurs as OM in Santali.[9] However, Gosh (2008) makes the opposite observation regarding Santali, where he remarks that 'if there are two objects and both are animate, only the indirect is marked in the verb'(Gosh 2008: 34). For Mundari, Osada (2008) does notice alternation between DO and IO as OM, but he relates it to the aspect of the given sentence. Contra Osada (2008), in this section, I show that IO and DO can alternate in the OM slot under the same aspect and the choice between them is determined by their φ-featural content.[10]

First, let us consider the person scale keeping the number and gender constant. As shown in (12a), when DO is 1st person and IO is 2nd person, the OM slot refers to the 1st person DO. In (12b), when DO is 2nd person and IO is 1st person, it is the 1st person IO that occupies the OM slot.

(12) *1 > 2*

[7] Mundari is an optional pro-drop language, where pronominals can dropped and their information are recovered from SM and OM. The overt presence of pronominal arguments often indicate information structure related reasons like focus or emphasis.

[8] For Munda languages in general, both the SM and OM are argued to be clitics rather than φ-agreement inflection (Kidwai 2005, Bhattacharya 2016).

[9] Santali and Mundari belong to the same sub-groupings of North Munda branch of the Munda language family.

[10] Unless stated, all Mundari data in this section and elsewhere in the paper comes from the fieldwork carried out at Jharkhand, India.

a. 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.'

b. 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.'

Similarly, in the combination of 2nd and 3rd person, it is the 2nd person that is referred by the OM slot irrespective of whether the 2nd person is DO or IO.

(13) *2 > 3*

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

b. 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.'

Finally, in the combination of 1st and 3rd person, the OM slot is filled by the 1st person argument.

(14) *1 > 3*

a. 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.'

b. 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.'

Therefore, the examples in (12)-(14) clearly suggest that the choice between IO and DO is determined by the scale as in (15).

(15) Person hierarchy: 1 > 2 > 3

Now, to determine the number scale, let us keep the person and gender values constant and change the number values. In the combination of SG and PL, as shown in (16), it is the SG that occupies the OM slot.

(16) *SG > PL*

a. 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.'

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

In the combination of PL and DL, the PL argument refers to the OM slot.

(17) *PL > DL*

a. 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.'

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

In the combination of SG and DL, the OM slot refers to the SG argument.

(18) *SG > DL*

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

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

The examples in (16)-(17) clearly suggest the number hierarchy as in (19)

(19) Number hierarchy : SG > PL > DL

Finally, coming to the gender, there are only two genders in Mundari that are based on animacy of a given nominal and they are animate and inanimate. In the combination of animate and inanimate arguments, the OM slot refers only to the animate argument.

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

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

Given (20), it is tempting to posit a separate scale for gender on par with person and number, as in (21).

(21) Gender hierarchy: Animate > Inanimate

However, an important difference between gender on the one hand and person and number on the other hand is that lower-ranked person and number argument (i.e. 3DL) can be cross-referenced in the absence of corresponding higher-ranked argument (22) but an inanimate argument can never be referred by the OM even in the absence of an animate argument. As shown in (23), there is no OM in the absence of animate arguments.

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

(23) 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.'

Therefore, it is just a restriction rather than a hierarchy for gender, where only the animate argument can be cross-referenced as OM. Nevertheless, the example in (20) shows that gender does exhibit an omnivorous pattern in having the OM refer to the animate argument, which can be either IO or DO.

Each of the data points that we have seen so far are indicated in the tables below:

(24) *Person*

Ex.no	DO	IO	OM
(12a)	1	2	1
(12b)	2	1	1
(13a)	2	3	2
(13b)	3	2	2
(14a)	1	3	1
(14b)	3	1	1

(25) *Number*

Ex.no	DO	IO	OM
(16a)	SG	PL	SG
(16b)	PL	SG	SG
(17a)	PL	DL	PL
(17b)	DL	PL	PL
(18a)	SG	DL	SG
(18b)	DL	SG	SG

(26) *Gender*

Ex.no	DO	IO	OM
(20a)	Animate	Inanimate	Animate
(20b)	Inanimate	Animate	Animate

Note that in the person table in (24), we have not included different number values and in the number table in (25), we have not included different person values. Now we can vary both person and number values to determine how OM is cross-referenced in such cases. A non-exhaustive sample of such different person and number combinations is given in (27)-(31).

(27) *Combination of 1SG and 3PL*

a. 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.'

b. 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.'

(28) *Combination of 3SG and 2PL*

a. 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).'

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

(29) *Combination of 2SG and 1PL*

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

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

(30) *Combination of 3SG and 1PL*

a. hon-ko Ravi ke abu ke-ko ɛm-a-bu-ta-n-a
children-PL Ravi EMP 1PL EMP-3PL.SM give-BEN-1PL.OM-PROG-ITR-IND
'Children are giving Ravi to us(PL).'

b. hon-ko abu ke Ravi ke-ko ɛm-a-i-ta-n-a
children-PL 1PL EMP Ravi EMP-3PL.SM give-BEN-3SG.OM-PROG-ITR-IND
'Children are giving us(PL) to Ravi.'

(31) *Combination of 1SG and 2PL*

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

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

The φ-features of DO and IO along with the corresponding OM in (27)-(31) is indicated in (32).

(32) *Person and Number*

Ex.no	DO	IO	OM
(27a)	1SG	3PL	1SG
(27b)	3PL	1SG	1SG
(28a)	3SG	2PL	2PL
(28b)	2PL	3SG	3SG
(29a)	2SG	1PL	1PL
(29b)	1PL	2SG	2SG
(30a)	3SG	1PL	1PL
(30b)	1PL	3SG	3SG
(31a)	1SG	2PL	1SG
(31b)	2PL	1SG	1SG

The data in (32) seem random at first glance because OM remains constant in (27a&b) and (31a&b) but in the remaining cases, OM does not stay constant. However, careful examination of the data reveals an interesting pattern. In those cases, when OM remains unchanged, both the person and number values of one argument outranks that of the other argument. For instance, in (27a&b), the 1SG argument is higher ranked than 3PL argument in both person and number. As a result, 1SG argument is cross-referenced as OM. Similarly, in (31a&b), 1SG is higher ranked than 3PL, which results in the former being cross-referenced as OM.

In all those other cases where OM exhibits different values, the person and number of one argument do not together outrank the person and number of the other argument. For instance, in the case of (29a&b), the 2SG argument outranks the 1PL argument in number but not in person. Similarly, the 1PL argument outranks the 2SG argument in person but not in number. As a result of this clash between person and number hierarchy, OM is simply cross-referenced by IO.

To ascertain that the different values for OM is a result of the ranking clash between number and person, we can look at the combination of, say 2PL and 1DL. In this combination, we would expect OM values to be different, since there is a ranking clash in this combination. In contrast, in the combination of 2PL and 3DL, we would expect OM values to be the same since there is no ranking clash in this combination. Both these predictions are proved right as shown in (33) and (34).

(33) *Combination of 2PL and 1DL*

a. Ravi ape ke alaŋ ke-i ɛm-a-laŋ-ta-n-a
Ravi 2PL EMP 1DL EMP-3SG.SM give-BEN-1DL.OM-PROG-ITR-IND
'Ravi is giving you(PL) to us(DL).'

b. Ravi alaŋ ke ape ke-i ɛm-a-pe-ta-n-a
Ravi 1DL EMP 2PL EMP-3SG.SM give-BEN-2PL.OM-PROG-ITR-IND
'Ravi is giving us(DL) to you(PL).'

(34) *Combination of 2PL and 3DL*

a. aiɲ ape ke akin ke-iɲ ɛm-a-pe-ta-n-a
1SG 2PL EMP 3DL EMP-1SG.SM give-BEN-2PL.OM-PROG-ITR-IND
'I am giving you(PL) to them(DL).'

b. aiɲ akin ke ape ke-iɲ ɛm-a-pe-ta-n-a
1SG 3DL EMP 2PL EMP-1SG.SM give-BEN-2PL.OM-PROG-ITR-IND
'I am giving them(DL) to you(PL).'

Having seen how each of the person and number combinations works, we can summarize the omnivorous pattern in Mundari as in (35).

(35) a. In the ditransitive construction, the choice between IO and DO for the OM slot is determined by following hierarchies:
   i. Person hierarchy: 1>2>3
   ii. Number hierarchy: SG > PL > DL

b. Given these scales, the OM can be cross-referenced by DO only if it outranks IO in both person and number scales; otherwise, OM will simply resort to IO.

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

In the following section, I will propose an analysis that accounts for (35) by appealing to the articulated nature of probe and a clitic doubling analysis that necessarily involves prior syntactic φ agreement.

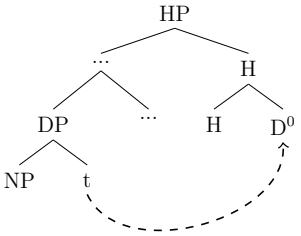
4 Analysis

In this section, first, I will set up the system by spelling out my assumptions regarding the working mechanism of Agree and clitic doubling. Secondly, I will discuss the structure of Mundari ditransitives and finally, I will give a derivational account of each of the data points summarized in (35).

4.1 Agree and clitic doubling

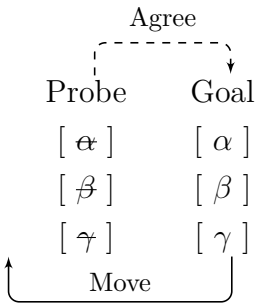
In line with the standard 'Big DP' analysis of clitic doubling, I assume that OM is actually an instance of a doubled clitic that has undergone a head movement (Torrego 1992, Belletti 2005, Uriageraka 1995, Cecchetto 2005, Craenenbroeck and van Koppen 2008, Arregi and Nevins 2012, Preminger 2019). More specifically, movement of D^0 to H as shown in the structure below:

(36) Clitic doubling:



Following Preminger (2019), I assume that this head movement that results in clitic doubling necessarily involves prior syntactic φ-agreement between H and DP. The φ-agreement can be modeled as Agree (Chomsky 2000), which involves a probe-goal mechanism, where the probe searches its c-command domain to find a suitable goal to check its features. For instance, if a probe has a set of features [α, β, γ] and the corresponding goal also has the same set of features, all the probes features are checked, resulting in successful Agree. Since we are also dealing with an instance of clitic doubling, we can implement the doubling by allowing the goal to move and adjoin the probe as schematized in (37).

(37)



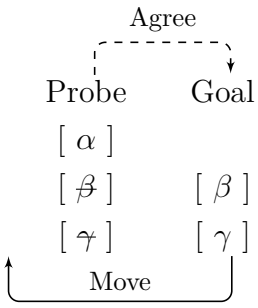
In this Agree relation, there is an exact match between the features of the probe and of the goal. However, if there is a mismatch between them, then I assume that Agree is subject to a particular condition given in (38), which I will refer as 'Feature subset condition'.

(38) Features of Goal $\subseteq$ Features of Probe

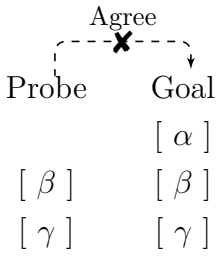
Basically, this condition allows Agree to happen only when the features of the goal are a subset of the features of the probe. Therefore, it works at two levels: on the one hand, it

allows Agree to happen even when the goal does not have all the features corresponding to the probe and on the other hand, it disallows Agree when the goal has a feature that is not present in the probe. As illustrated in (39), Agree is successful since the features of the goal are a subset of the features of the probe. However, in (40), Agree fails because the features of the goal are not a subset of the features of probe. Consequently, clitic movement occurs in (39) but not in (40).

(39)

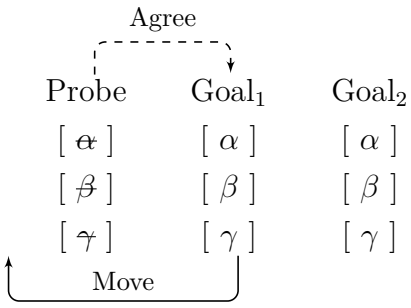


(40)



The system described above works for simple cases where there is one to one correspondence between a probe and a goal. However, there are instances pointed out in literature, where a single probe interacts with multiple goals (Béjar and Rezac 2009).[11] In such cases, I assume that structural hierarchy plays a role in determining the choice of the goal. If Goal_1 is structurally closer to the probe than Goal_2, as in (41), then the probe agrees only with Goal_1 but not with Goal_2. Therefore, only Goal_1 undergoes movement for clitic doubling.

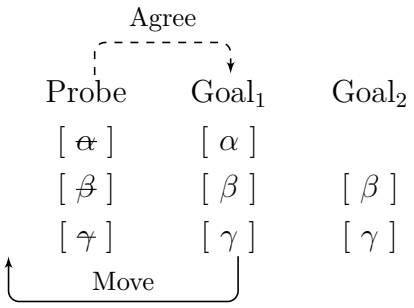
(41)



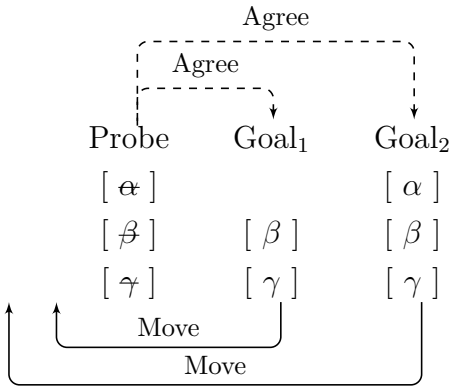
Now let us consider a case where Goal_1 and Goal_2 differ in terms of their feature inventories relative to the probe's features. If Goal_2 has fewer features than Goal_1, as in (42), this would not affect the Agree relation between the probe and Goal_1. However, if Goal_1 has fewer features than Goal_2, then probing does not stop with Goal_1 and proceeds to Goal_2. As illustrated in (43), there is no [α] in Goal_1 and consequently, probe agrees with Goal_1 for [β] and [γ] and with Goal_2 for [α]. Since both Goal_1 and Goal_2 are involved in Agree, they both undergo movement for clitic doubling.

[11] In the ditransitive construction, Anagnostopoulou (2003) argues that both DO and IO come under the same agreement domain. Nevins (2007, 2011) implements this idea in his 'Multiple Agree' approach by letting the probe simultaneously agree with two goals.

(42)



(43)



With this working mechanism for Agree and clitic movement in place, let us now next turn to the structure of Mundari ditransitives.

4.2 Structure of Mundari ditransitives

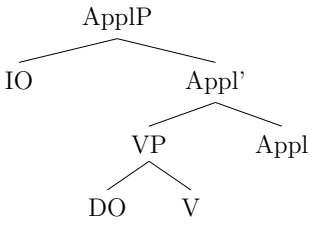
As seen in section 3, ditransitive constructions in Mundari are very productive and it is always the DO that precedes the IO. Given the omnivorous agreement pattern and the absence of case markers, my native speaker informants reported that there is no way to distinguish the DO from the IO except for the order of these arguments, which is fixed and cannot be interchanged, as shown in (44),

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

b. *hon-ko ako ke aiɲ ke-ko ɛm-a-i̲-ta-n-a
children-PL 3PL EMP 1SG EMP-3PL.SM give-BEN-3SG.OM-PROG-ITR-IND
'Intended: Children are giving me to them.'

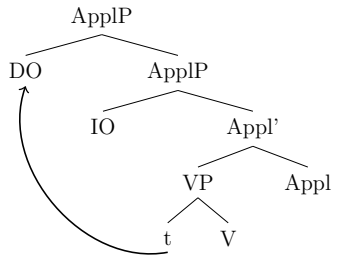
In the order of verbal sequence, there is also an overt applicative head indicating the benefactive marker. The standard analysis for such applicative construction originally proposed in Marantz (1993) and later adopted in works including Anagnostopoulou (2003), Pylkkänen (2008), Bruening (2010) is given in (45).

(45) Applicative construction:

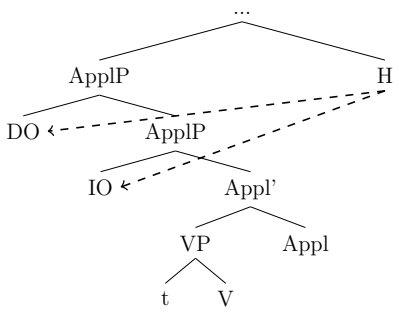


In (45), the IO is structurally higher than the DO but in the linear order of Mundari, it is the DO that precedes the IO. For the structural hierarchy to reflect the linear order, I assume that DO in Mundari always undergo phrasal movement similar to object shift to the outer specifier of ApplP as in (46). An advantage of positing such a movement is that it not only accounts for the correct word order but also allows both DO and IO to be under the same agreement domain. As shown in (47), when an external probe from the head H seeks to agree with a suitable goal, both DO and IO become accessible to the probe as they are in the specifiers of the same Appl head.

(46)



(47)



When it comes to the nature of the head H, the simplest option is to consider it as the *v* that takes ApplP as its complement. However, the difference in the order of the morphemes in the verbal complex between simple transitives and ditransitives seem to suggest that it is not the *v*. To illustrate how this comes about, let us compare the verbal template of both these constructions. In the case of simple transitives, as seen in (4) (repeated as (48a) below), the OM occurs following the aspect and valency; but in the ditransitives in (48b), OM occurs immediately after the benefactive suffix but before aspect and valency.[12]

(48) a. Simple transitives: VERB-ASPECT-VALENCY-OM-MOOD

b. Ditransitives: VERB-BENEFACTIVE-OM-ASPECT-VALENCY-MOOD

If we assume that valency, which reflects the transitivity of the clause, is hosted at *v*, then we can deduce why OM does not follow valency in ditransitives: the valency in ditransitives is always indicated by the intransitive marker that is generally used in the intransitive construction. As shown in the intransitive clause in (49a) and ditransitive

[12]In (48), I have not indicated the freely alternating SM as it is not relevant to the present discussion.

clause in (49b), both their valency markers are indicated by the same intransitive marker, which is different from the transitive marker in the case of simple transitives (50).

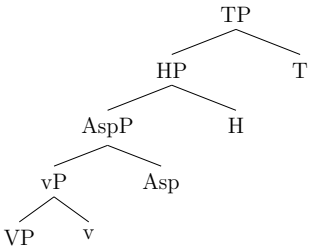
(49) a. hon-ko ote-re-ko dub-ke-n-a
children-PL ground-LOC-3PL.SM sit-COMPL-ITR-IND
'The children sat on the ground' (Osada 2008: 1221 (37))

b. 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.'

(50) 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))

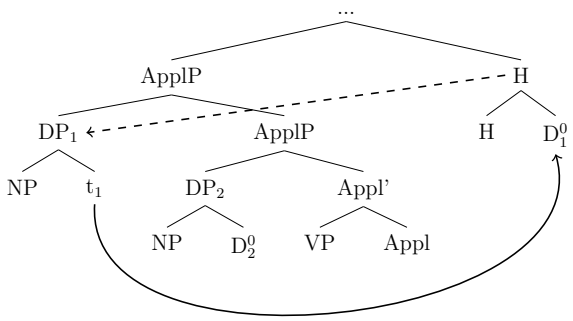
Although it is not clear to me at this point why the valency in ditransitives is indicated by the intransitive marker, it nevertheless explains why OM cannot occur adjacent to valency in ditransitives. Now, to account for the presence of OM immediately following the benefactive marker in ditransitives, I follow Arregi and Nevins's (2008) analysis of Basque, where they posit a separate head projection, HP, in the clausal spine as in (51). This head projection is distinct from TP, AspP or vP and its primary function is to host the absolutive clitic in Basque.

(51) Basque clausal spine (Arregi and Nevins 2008):

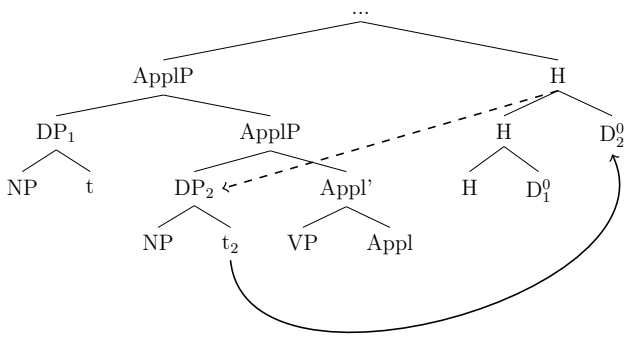


Similar to the HP in (51), I assume that there is a distinct HP in Mundari ditranstives located immediately above the ApplP. Furthermore, I assume that the head H in the HP projection can enter into an Agree relation with both IO and DO, which are both hosted as the specifiers of Appl head. As shown in (52), when H agrees with DP_1 (i.e. DO), D^0_1 moves and adjoins to H. However, if the probe from H is left with features that are unchecked by DP_1, then H agrees with DP_2 (i.e. IO). This results in movement of D^0_2 as well, as shown in (53).

(52)



(53)



The structure in (53) have two OM adjoining to the head H but Mundari ditransitives allows only one OM. Here I assume that this is resolved at post-syntax, where D^0_1 is invariably deleted in the presence of D^0_2 as indicated in the deletion rule (54).

(54) $D^0_1 \longrightarrow \emptyset / D^0_2$

In other words, the syntax can generate two D^0 heads adjoined to the head H but the clitic moved from the DO is deleted in the presence of clitic moved from IO in post-syntax. As a result, the DO clitic is deleted only in (53) but not in (52) because there is no IO clitic in the latter.

Having elaborated on all the ingredients that are required for the derivation, we will next turn to the derivation itself. I will first derive the omnivorous pattern in person, number, and gender and then move to the combinations between them.

4.3 Deriving person hierarchy

In section 3, we have seen the person hierarchy in Mundari that follows the order in which 1st person outranks the 2nd person and 2nd person outranks the 3rd person. The scale is repeated in (55).

(55) $1 > 2 > 3$

Before accounting for this scale, I will briefly discuss few proposals that deal with similar ominivorous effects in person to determine if these proposals can be extended to Mundari.

4.3.1 Relativized probe and PLC

We have seen in the introduction that the Kichean Agent-Focus (AF) construction (Preminger 2014) exhibits a similar omnivorous effect for person. The relevant examples are repeated below, where 2SG agreement seems to track the subject in (56a) and the object in (56b).

(56) Kichean AF construction

a. ja rat x-at-ax-an ri achin
FOC you(SG) COM-2SG-hear-AF the man
'It was you(SG) that heard the man.'

b. ja ri achin x-at-ax-an rat
FOC the man COM-2SG-hear-AF you(sg)
'It was the man that heard you(SG).' (Preminger 2014: 18 (15))

Béjar and Kahnemuyipour (2017) (henceforth, B&K)observe a similar effect in certain specific contexts in the copular construction. In assumed identity contexts in Eastern Armenian, as shown in (57), 2SG agreement can come from either the subject (57a) or the object (57b).

(57) Eastern Armenian

a. du Lina-n eir
you Lina-SP BE.PST.2SG
'You were Lina' (Béjar and Kahnemuyipour 2017: 22 (49d))

b. Lina-n du eir
Lina-SP you BE.PST.2SG
'Lina was you.' (Béjar and Kahnemuyipour 2017: 21 (49b))

Given (56) and (57), the hierarchy for both Kichean AF and Eastern Armenian is as in (58).

(58) $2 > 3$

Setting aside the 1st person for the moment, the proposal to account for (58) both in Preminger (2014) and Béjar and Kahnemuyipour (2017) is essentially the same, which is to establish Agree between probe and an appropriate goal. In their analysis, the probe is located structurally higher than both the subject and the object and then relativized for the feature [participant] based on Harley and Ritter's (2002) feature geometry given in (59).[13]

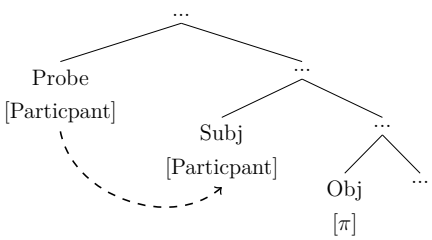
[13]Here, I am using the feature [π] synonymous with feature [d] used in Béjar and Kahnemuyipour (2017), which stands in an entailment relation with [participant].

(59) *Harley and Ritter (2002)*

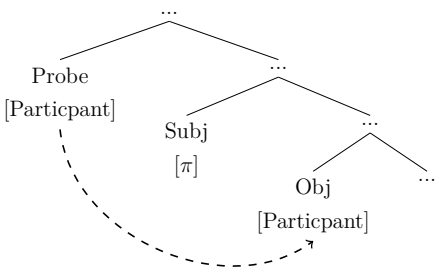
1st Person	2nd Person	3rd Person
[π]	[π]	[π]
[Participant]	[Participant]	
[Author]		

Given these feature inventories for each person, where only 1st and 2nd person have the feature [participant], the probe that is relativized for [participant] will always agree with 2nd person in the combination of 2nd and 3rd person arguments as shown in (60) and (61).

(60)



(61)



When it comes to the argument combination of 1st and 2nd person, the facts in Kichean AF differ from Eastern Armenian. Preminger points out that in Kichean AF, such a combination is illicit irrespective of any agreement values on the verb (62). In Eastern Armenian, B&K show that such combination is grammatical but agreement is always with the subject. In other words, there is no omnivorous effect in Eastern Armenian in the combination between 1st and 2nd person arguments (63).

(62) Kichean AF construction

a. *ja rat x-in/at/-ax-an yïn
FOC you(SG) COM-1SG/2SG/3SG.ABS-hear-AF me
'It was you(SG) that heard the me.'

b. *ja yïn x-in/at/-ax-an rat
FOC me COM-2SG-hear-AF you(sg)
'It was the me that heard you(SG).' (Preminger 2014: 22 (24))

(63) Eastern Armenian

a. yes du em/*es
I you be.PRES.1SG/be.PRES.2SG
'I am you '

b. du yes *em/es
you I be.PRES.1SG/be.PRES.2SG
'you are me ' (Béjar and Kahnemuyipour 2017: 24 (52))

To account for the absence of omnivorous effect in (63), B&K do not need to posit anything in addition because the relativized probe, which is searching for the feature [participant], can be satisfied either by 1st or 2nd person given the feature representation in (59). As a result, probing stops with the structurally higher argument and there is no agreement with the lower argument.

However, the relativization of the probe alone is not sufficient to account for the ungrammaticality of (62) in the Kichean AF. Thus, Preminger appeals to Béjar and Rezac (2003) Person liscensing condition given in (64).

(64) Person Licensing Condition (PLC):
An interpretable 1st/2nd person feature must be licensed by entering into an Agree relation with an appropriate functional category.

With PLC at work, the ungrammaticality of (62) can be explained. The probe relativized for [participant] will always agree with a structurally higher argument in the combination of the 1st and 2nd person arguments. Therefore, the structurally lower argument with a [participant] feature would remain unlicensed, resulting in a violation of the PLC and thus lead to ungrammaticality.

4.3.2 Back to Mundari Person

If we compare Mundari with Kichean AF and Eastern Armenian, Mundari seems to be different from both these languages. Unlike Kichean, the combination of 1st and 2nd person is grammatical in Mundari and unlike Eastern Armenian, there is an omnivorous effect even between 1st and 2nd person arguments in Mundari. The relevant example is repeated as (65) below, where it is the 1st person that occurs as OM.

(65) *1 > 2*

a. 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.'

b. 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.'

Given that (65) is well-formed in Mundari, we can conclude that PLC is not at work here. If it was, then the [participant] feature of 2SG in (65a) would remain unlicensed , leading to ungrammaticality. Since this is clearly not the case, we can rule out PLC. Similarly, relativizing the probe just to [participant] is not enough because this would then simply derive a agreement with structurally higher argument (like Eastern Armenian) but not with the lower argument in (65b). Therefore, for Mundari, I propose that the probe

for person is fully articulated with all inventories in Harley and Ritter's (2002) feature geometry as in (66).

(66) *Mundari Person probe*

$$\begin{bmatrix} \pi \\ Participant \\ Author \end{bmatrix}$$

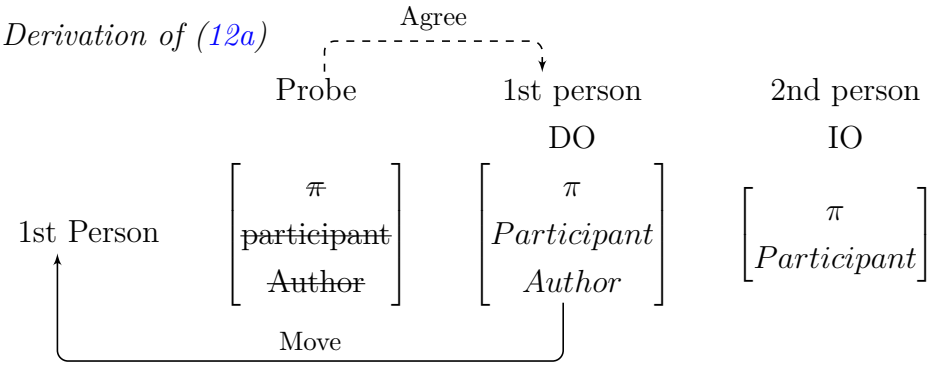
Having each of these features fully specified in the probe and without recourse to PLC, I show that the ominvorous person effect in Mundari can be straight forwardly derived based on the system that we already set up in section 4.1 and 4.2. The table summarizing person data is repeated in (67).

(67) *Person*

Ex.no	DO	IO	OM
(12a)	1	2	1
(12b)	2	1	1
(13a)	2	3	2
(13b)	3	2	2
(14a)	1	3	1
(14b)	3	1	1

In the derivation of (12a), as illustrated in (68), the probe first encounters the 1st person DO and all the features of the probe are checked by the corresponding features of 1st person. This is followed by the clitic doubling movement of the same argument.

(68) *Derivation of (12a)*



In the above derivation, the probe does not agree with the 2nd person IO because there is no feature of the probe left unchecked by 1st person DO for 2nd person IO to agree with. Since the probe does not agree with IO, it does not undergo clitic doubling movement.

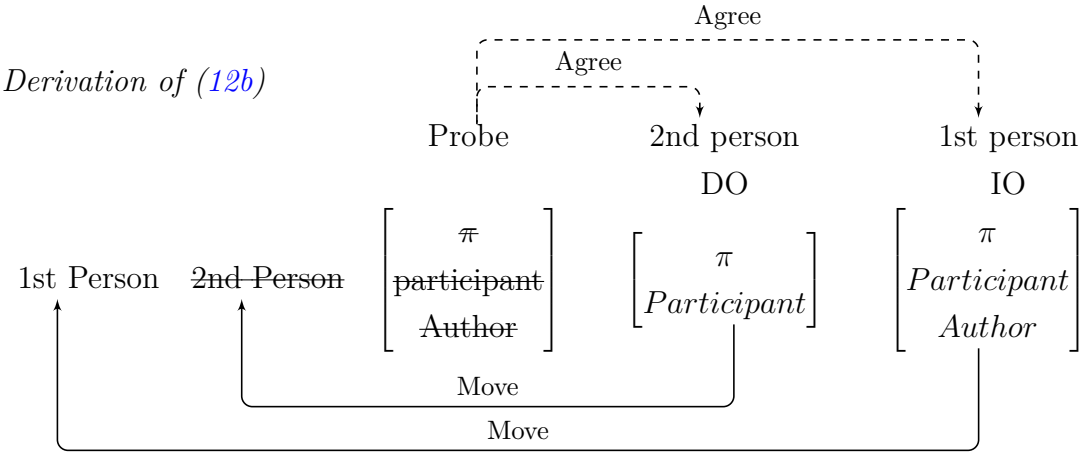
In the derivation of (12b), as illustrated in (70), the probe first encounters the 2nd person DO and agrees for all the features except for [Author], which is not present in the 2nd person argument. However, since Agree is successful for rest of the features, the 2nd person argument undergoes clitic doubling movement. Now, for the probe to check its

[Author] features, it agrees with the 1st person IO. As a result, the 1st person argument also undergoes clitic movement. Now there are two clitics in the adjoined position, which will then trigger the deletion rule that we posited in (54) (repeated as (69) below).

(69) $D_1^0 \longrightarrow \emptyset / D_2^0$

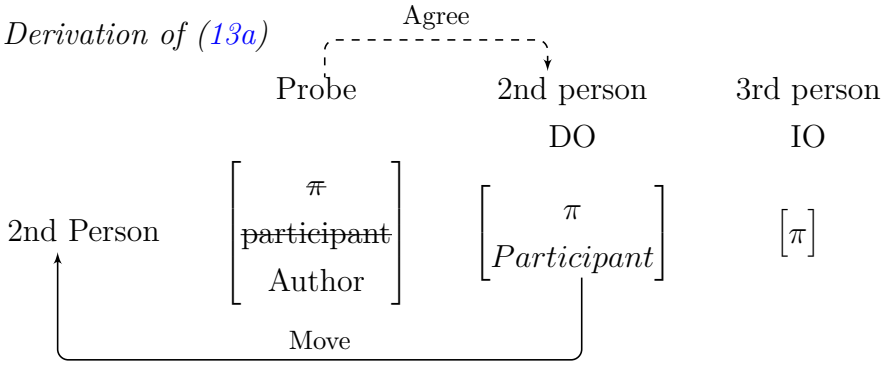
As a result of the application of this rule in post-syntax, the clitic moved by the first movement operation is deleted in the presence of the clitic moved by the second movement operation. In essence, the IO clitic replaces the DO clitic in (70).

(70) *Derivation of (12b)*

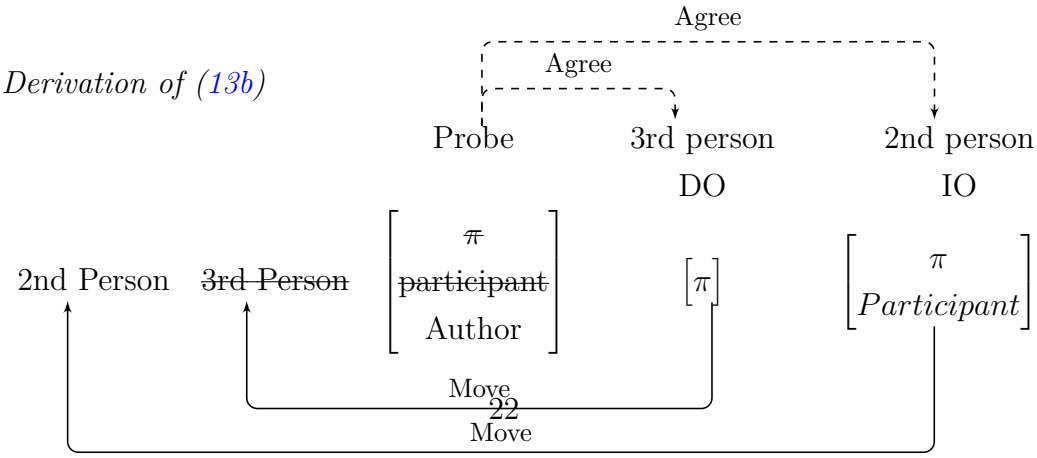


The rest of the derivations work in the same way as shown in (71)-(74), where the probe agrees with the IO only when the IO can check at least one feature that is not checked by DO. In all other instances, the probe agrees only with the DO. Furthermore, whenever there is an agreement with the IO, the IO clitic will invariably replace the DO clitic.

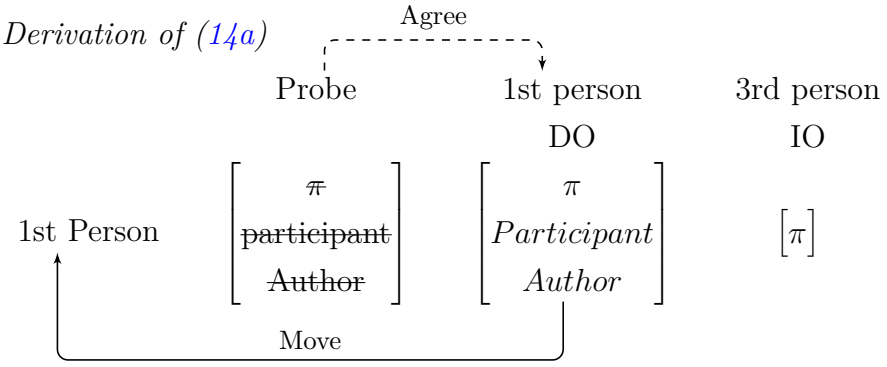
(71) *Derivation of (13a)*



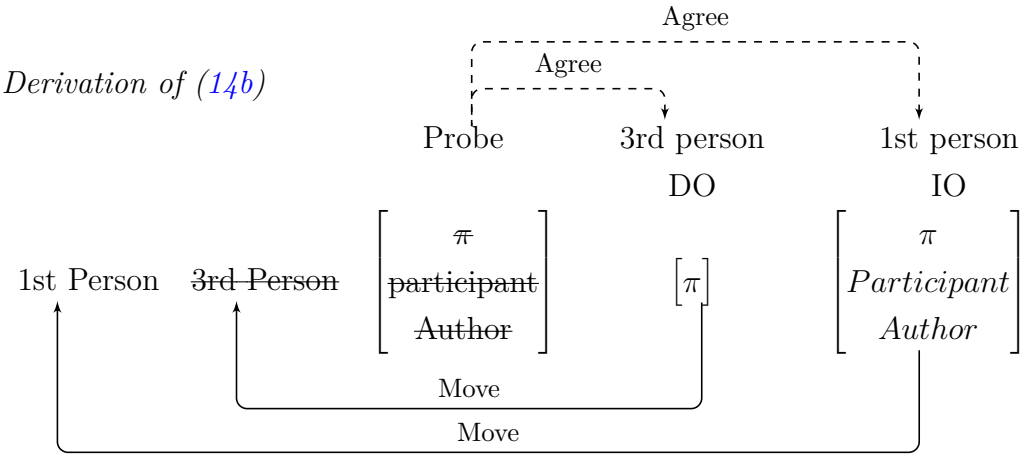
(72) *Derivation of (13b)*



(73) *Derivation of (14a)*



(74) *Derivation of (14b)*



4.4 Deriving Number hierarchy

The number hierarchy for Mundari is repeated in (75).

(75) SG > PL > DL

Similar to the discussion on person, I will briefly go over previous accounts that deal with the ominivorous number effect in order to determine if these proposals can be extended to account for (75).

4.4.1 Underspecification of SG

Going back to Eastern Armenian, B&K note that there is no independent number scale as it is always parasitic on person agreement. As is the case in Kichean AF except when both the arguments are 3rd person. Preminger points out that when both the subject and the object are 3rd person in Kichean AF, there is an omnivorous number effect. In (76), plural agreement can come from either the subject or the object.

(76) *Kichean AF*

a. ja rje' x-e-tz'et-ö rja'
FOC them COM-3PL-see-AF him
'It was them who saw him'

b. ja rja' x-e-tz'et-ö rje'
FOC him COM-3PL-see-AF them
'It was him who saw them' (Preminger 2014: 20 (19))

In addition to Kichean AF, we have already seen in the introduction that Georgian exhibits a similar effect, where the plural agreement in the verb can refer either to the subject or to the object (or both).[14]

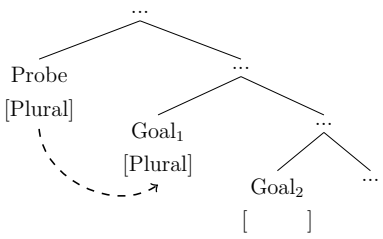
(77) g-xedav-t
2OBJ.-saw-PL
'I saw you all'; We saw y'all; He saw y'all; We saw you.'
(Nevins 2011: 941 (2))

There is no dual marking in either Kichean or Georgian and the examples in (76) and (77) clearly suggest that number scale in these languages is as in (78).

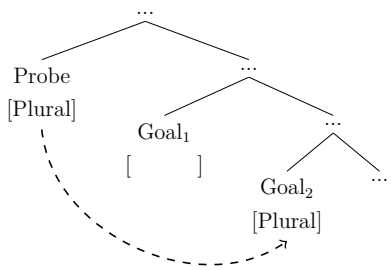
(78) PL > SG

In both Preminger (2014) and Nevins (2011) analysis, the plural argument is specified for [plural] and the singular argument is not specified for any features. Furthermore, the probe is relativized for [plural] and it agrees only with plural argument, which can be either subject (79) or object (80).

(79)



(80)



As mentioned earlier, in both Kichean and Georgian, there is no dual marking and as a result, underspecification of one number value over another provides a neat account to derive (78). However, if there are three number values in the language, an additional mechanism of relative underspecification between the three numbers is needed. Barrie (2016) observes such an omnivorous effect among all three numbers in Onondaga (81), a Northern Iroquoian language.

(81) *Onondaga*

[14] **?** points out that some varieties of Abruzzese, spoken in the central Italian region, display omnivorous number effect, where the the participle agrees with whichever argument is marked as plural.

a. s-g-ni-ge-haʔ
2-1-DU-see-HAB
'I see you two' (or) 'We two see you' (or) 'We two see you two'

b. s-g-wa-ge-haʔ
2-1-PL-see-HAB
'I see you all' (or) 'We two see you all' (or)
'We all see you two' 'We all see you (SG)' (Barrie 2016: 101 (4-5))

The number agreement that emerges from (81) is summarized in the table below.

(82) *Onondaga Number*

Subject	Object	Agreement
SG	PL	PL
PL	SG	PL
SG	DL	DL
DL	SG	DL
PL	DL	PL
DL	PL	PL

Given (82), the number hierarchy of Onondaga is given in (83), where Plural outranks the dual and dual outranks the singular.

(83) PL > DL > SG

To account for (83), Barrie (2016) compares the feature inventories proposed in Harley and Ritter (2002) with those proposed in Cowper's (2005). The difference between these is that, dual is more specified than plural in the former and the reverse holds in the latter as shown in (84) and (85).

(84) *Harley and Ritter (2002)*

Singular	Plural	Dual
#	#	#
	[group]	[group]
		[minimal]

(85) *Cowper (2005)*

Singular	Dual	Plural
#	#	#
	>1	>1
		>2

In the combination of plural and dual arguments in Onondaga (81b), agreement is only with the plural argument and it is precisely this agreement pattern that Harley and Ritter's feature system fails to derive. If we assume that the probe is specified for [group], then agreement can be with either the plural or the dual argument and thus, cannot be only with the plural argument. In contrast, if we assume that the probe is specified for [minimal], then agreement can only be with the dual. Therefore, a probe's specification

based on Harley and Ritter's gives an incorrect result for Onondaga. In terms of Cowper's feature inventories, if the probe is specified for [>2], then agreement would be with the plural argument in the combination of plural and dual arguments. Since this gives the correct result, Barrie concludes that Cowper's system is better suited to handle the Onondaga facts.

4.4.2 Back to Mundari Number

In the combination between singular and plural, the hierarchy is the same for Kichean AF, Gerogian, and Onondaga, which is given below.

(86) PL > SG

In the same number combination, the above scale is the exact opposite of what we have seen for Mundari, which is given below.

(87) SG > PL

However, in the combination between plural and dual, the hierarchy is the same for both Onondaga and Mundari, as shown in (88).

(88) PL > DL

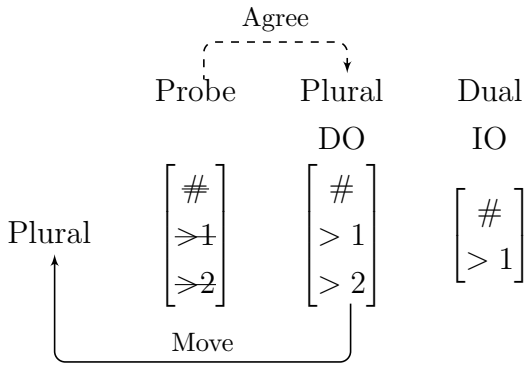
Since Barrie (2016) derive the Onondaga facts using Cowper's system, which involves dual number, let us consider the same feature system in terms of the Agree model that we are pursuing in this paper. First, to derive the scale in (88), let us assume that the probe is fully specified in terms of Cowper's feature inventories as in (89),

(89) *Mundari Number Probe (to be revised)*

$$\begin{bmatrix} \# \\ > 1 \\ > 2 \end{bmatrix}$$

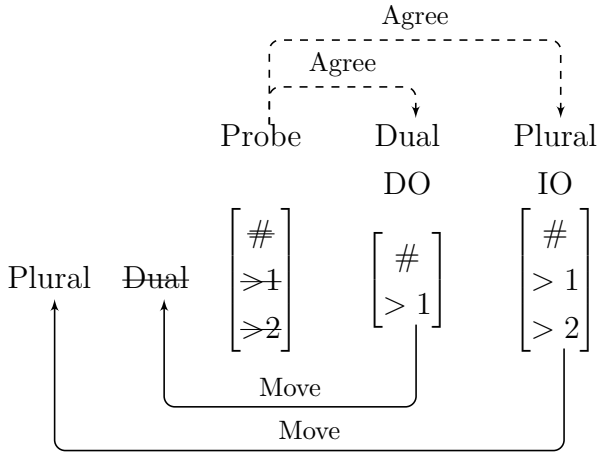
In the combination between plural and dual arguments, the probe with its features specified as in (89) can successfully establish an Agree relation with a plural argument as shown in (90). This Agree relation is followed by clitic doubling movement. Furthermore, there is no agreement with the dual argument in this case because all the features of the probe are already checked by the plural argument.

(90)



In the same number combination, if the dual argument is closest to the probe, it cannot check all the features of the probe. Therefore, the probe agrees with the dual only for [#] and [>1] ; for [>2], the probe agrees with the plural argument. As shown in (91), both the arguments undergo clitic doubling movement but the clitic moved by the latter movement replaces the clitic moved by the former.

(91)

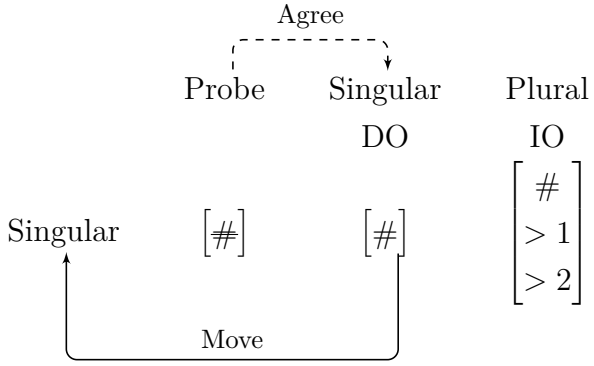


Therefore, both the derivations in (90) and (91) correctly account for the hierarchy scale between the plural and the dual argument. Now, let us consider the combination of singular and plural arguments. In this case, as shown in the scale in (87), the singular outranks the plural in Mundari. If we consider the probe to be fully specified as it is in (89), then it will yield the conflicting result with plural outranking singular. Therefore, let us assume that the probe is simply specified with the singular feature as shown in (92).

(92) *Mundari Number Probe (to be revised)*
[#]

With the probe specified as in (92), in the combination between singular and plural, the derivation works in a similar way. When singular is the closest argument to the probe, as shown in (93), there is agreement with only the singular and not the plural argument.

(93)

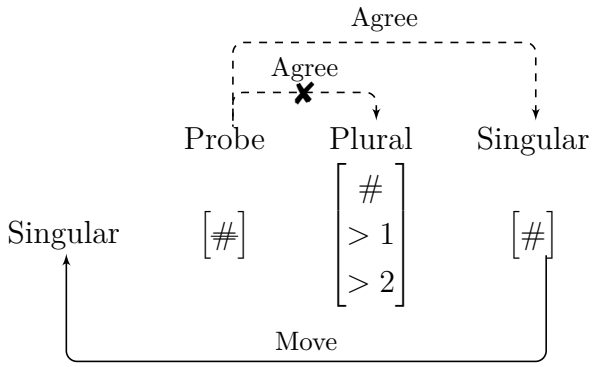


In the same number combination, when the plural argument is closest to the probe, the derivation is slightly different from what we have seen before. Recall the feature subset condition that we assumed in (38) (repeated as (94) below).

(94) Features of Goal $\subseteq$ Features of Probe.

According to this condition, Agree can occur only when the features of the goal are a subset of the features of the probe. Since the features of the plural are not a subset of the features of the probe in (95), Agree cannot occur with a plural argument despite the plural argument having the corresponding features of the probe. Subsequently, the probe agrees with the singular, resulting in the movement of the singular argument.

(95)



Although the derivations in (93) and (95) accounts for the hierarchy between singular and plural arguments, the features of the probe are altered from what we posited earlier for the combination between plural and dual arguments. Therefore, for this system to work, we need two different feature specifications of the probe depending on the number specification of the arguments. The change in features of the probe can be summarized as in (96).

(96) $\left[\#\right]$, in the presence of singular argument and

$\begin{bmatrix} \# \\ > 1 \\ > 2 \end{bmatrix}$, in the absence of singular argument.

Though Cowper's feature inventory works for Mundari, the problem is in motivating (96) on independent grounds, which to my knowledge is not possible without an additional stipulation. Therefore, what is needed is just one feature representation of the number probe that holistically accounts for the Mundari number scale (repeated as (97) below).

(97) SG > PL > DL

As we have seen in the above discussion, the challenging thing is to account for SG > PL and PL > DL with a single feature representation of a probe. Considering this, I propose a slightly revised feature inventory for Mundari number as in (99), which is based on Harley and Ritter's (2002) feature system (repeated as (98) below).

(98) *Harley and Ritter (2002)*

Singular	Plural	Dual
#	#	#
	[group]	[group]
		[minimal]

(99) *Revised feature inventories*

Singular	Plural	Dual
#	#	#
[- group]	[- minimal]	
[- minimal]		

I consider features as represented in (99) to still be privative but rather specified in terms of what they are not and unspecified in terms of what they are.[15] In the case of singular, it is neither [group] nor [minimal]. In the case of plural, it is not [minimal] and therefore it can only be [group]. Since dual is not negatively marked with any features, it is both [group] and [minimal] Therefore, with this feature system, I propose that the number probe in Mundari is fully specified as in (100).

(100) *Mundari Number Probe (final version)*

$$\begin{bmatrix} \# \\ -group \\ -minimal \end{bmatrix}$$

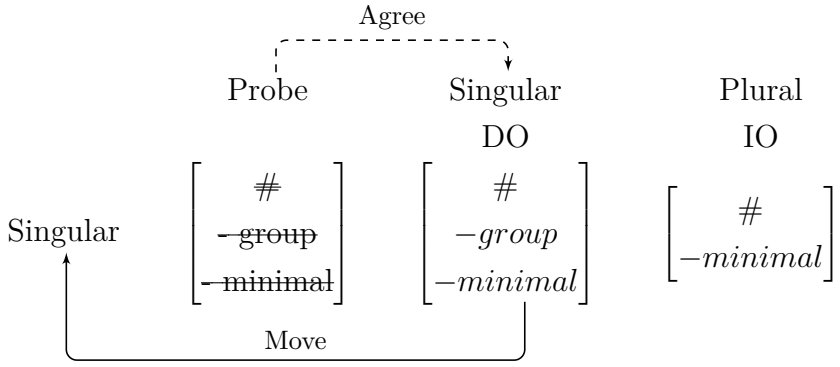
The fully specified probe as in (100), can derive not only the ranking in which the plural outranks the dual but also the problematic ranking in which the singular outranks the plural. The corresponding number table that illustrates the omnivorous effect is repeated in (101). The derivation for each of these combinations of number in terms of an Agree model that we set up works similarly to the person combinations as shown in (102) -(107).

(101) *Number*

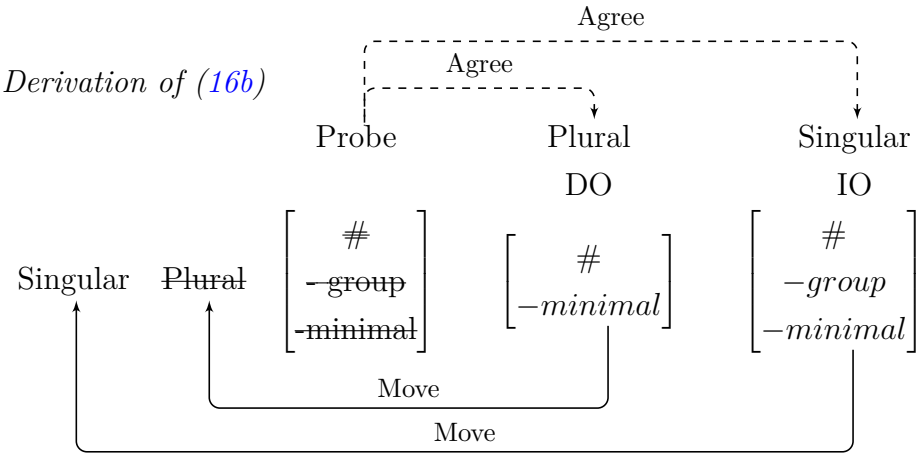
Ex.no	DO	IO	OM
(16a)	SG	PL	SG
(16b)	PL	SG	SG
(17a)	PL	DL	PL
(17b)	DL	PL	PL
(18a)	SG	DL	SG
(18b)	DL	SG	SG

(102) *Derivation of (16a)*

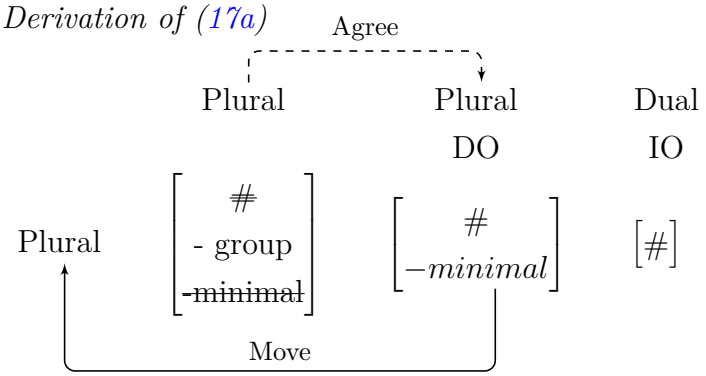
[15] This is similar to Trommer's (2010) epenthetic morphosyntactic features and he considers that these features are inserted postsyntactically. However, I consider the number features in (99) to be syntactically active privative features.



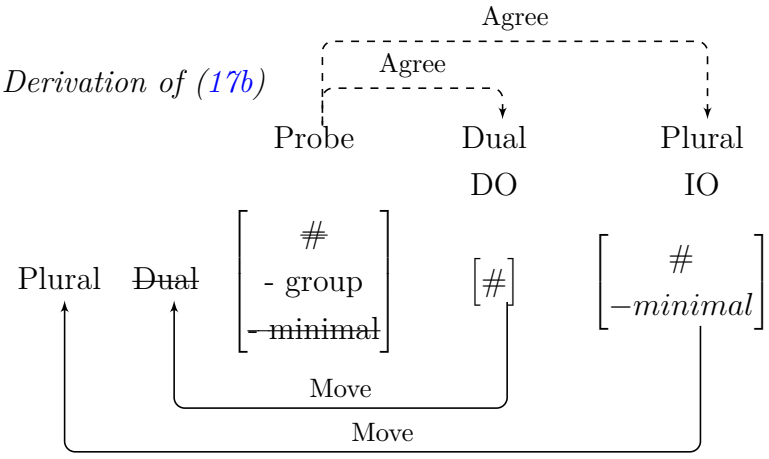
(103) *Derivation of (16b)*



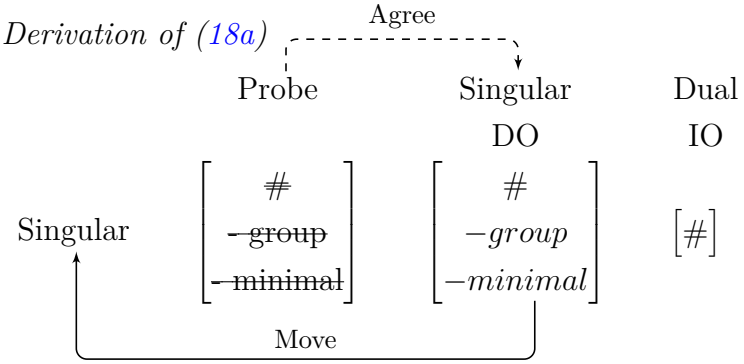
(104) *Derivation of (17a)*



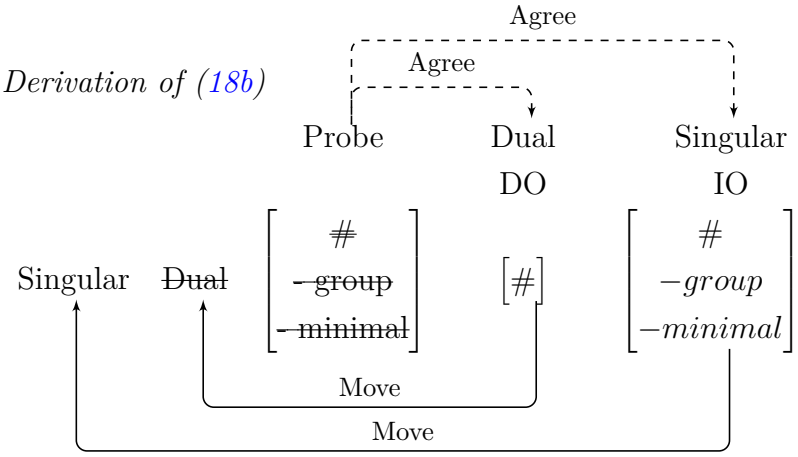
(105) *Derivation of (17b)*



(106) *Derivation of (18a)*



(107) *Derivation of (18b)*



4.5 Deriving the Gender restriction

In section 3, we have seen the omnivorous gender effect in Mundari, where the OM can refer to an animate argument, which can be either DO or IO. The relevant examples are repeated in (108).

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

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

We have also seen that there is no hierarchy involved in the case of gender because the inanimate arguments are never cross-referenced in the OM slot.

(109) 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.'

Therefore, gender restriction can simply be explained by accounting for the absence of agreement with the inanimate argument. Similar to what we have seen for person and number, I will briefly discuss Preminger's (2019) phrasal movement analysis before proposing my own account for the absence of agreement with an inanimate argument.

4.5.1 Phrasal movement

One of the approaches to deal with the animacy-inanimacy distinction is to not consider it as an inherent property of clitic doubling. For instance, Preminger (2019) considers animacy on par with other nominal properties like specificity, and definiteness and remarks that these properties do not in general affect the clitic doubling. However, there are languages in which the occurrences of clitic seem to depend on properties similar to animacy. The Romanian clitic *pe*, for instance, is dependent on the [+ human] feature of the object. In the presence of the [+ human] object (110a), *pe* is obligatory, but in the absence of [+ human] object (110b), *pe* does not even occur.

(110) *Romanian*

a. Am vazut *{pe} altcineva
have.1SG seen *{CL} somebody.else
'I have seen somebody else' (Anagnostopoulou 2006: 541 (49))

b. Am vazut {*pe} altceva
have.1SG seen {*CL} something.else
'I have seen something else' (Anagnostopoulou 2006: 541 (52))

Similar to Romanian, Preminger cites an example from Porteño Spanish, where the presence of the clitic is dependent on the definiteness property of the corresponding nominal.

(111) *Porteño Spanish*

a. *{La$_i$} oian [a Paca/a la niña/a la gata]$_i$
*{CL} hear.PST.3PL a paca/a the girl/a the cat
'They listened to Paca/the girl/the cat.'

b. {*La} buscaban [a alguien que los ayudara]$_i$
{*CL} search.PST.3PL a somebody COMP CL.PL help.SUBJ
'They were looking for somebody who could help them.'

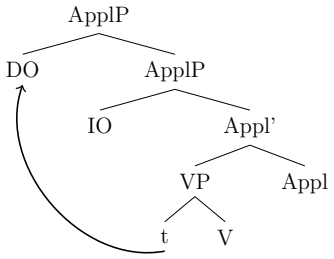
(Suñer 1988: 396)

To account for clitic distribution in these languages, Preminger conjectures that it is not clitic doubling that is sensitive to animacy/specificity/ definiteness but rather the movement operation (that feeds clitic doubling). If non-human or non-definite nominals have not underdone phrasal movement to a position from which they are accessible to the clitic doubling operation, then clitic doubling obviously cannot take place. Since these nominal properties are known to regulate movement even in those languages that do not have clitic doubling, Preminger points out it would be redundant to posit them as a property related to clitic doubling.

4.5.2 Back to Mundari Gender

In section 4.2, we posited that the direct object in Mundari ditransitives undergoes movement to the specifier of ApplP (repeated as (112) below),

(112)



Adopting Preminger's proposal, let us assume that this movement operation is sensitive to the animacy property and thus, only animate DOs undergo movement and not the inanimate DOs. The inanimate DO from its base position is no longer accessible to an external probe and consequently, there is no clitic doubling operation as well. There are a few empirical predictions from this proposal, the first is that if an inanimate DO has not undergone phrasal movement, then it is expected that the inanimate DO would follow the animate IO in the surface word order. However, such an order is not possible in Mundari.

(113) *aiɲ bilai-ko ke oɽak'-iɲ ɛm-a-ko-ta-n-a
1SG cat-PL EMP house-1SG.SM give-BEN-3PL.OM-PROG-ITR-IND
Intended:'I am giving the house to the cats.'

The second prediction from the proposal is that irrespective of the animacy status of the IO, it should be accessible to the clitic doubling operation since it is merged as a specifier of ApplP. However, this is also clearly not the case because an inanimate IO can never occur as OM as we have already seen in (109).

Furthermore, an important distinction that concerns animacy in Mundari is that it is not based on a clear-cut semantic distinction. There are many semantically inanimate nominals belonging to the group of celestial bodies, spiritual beings and other inanimate objects like thorns, shells, mushrooms, etc, which are also considered as animate in Mundari.[16] As shown in (115), the subject *puʈkə-ko* 'mushrooms' and *gaɽa* 'river' can be cross-referenced as SM like any other animate nominal.

(114) a. puʈkə-ko maraŋ-ja-n-a-ko
mushroom-PL grow-INGR-ITR-IND-3PL.SM
'Mushrooms have grown up.'

b. gaɽa buru-iʔ bai-ke-d-a
river mountain-3SG.SM make-COMPL-TR-IND
'The river made the mountain' (Osada 2008: 121(31))

In contrast, the nominals that are considered to be inanimate, such as *tasad* 'grass' or *ulijoo* 'mango' can never be cross-referenced either as SM or OM.

[16] Gosh (2008) makes similar observation for Santali.

(115) a. tasad tu-tud-aka-n-a
grass pick-ITER-CONT-ITR-IND
'The grass is ready to be picked up.'

b. uli-joo jo-jom-aka-n-a
mango-fruit eat-ITER-CONT-ITR-IND
'The mango fruit is ready to be eaten up.'

(Osada 2008: 133 (102-103))

Given these reasons, I consider animacy not as a semantic property of Mundari nominals but rather as a morphological gender similar to masculine and feminine nouns in Hindi. Furthermore, when it comes to feature specification, I assume that animate and inanimate nominals are specified with distinct features without any superset or subset relation between them, as shown in (116).

(116) *Mundari Gender features*

Animate	Inanimate
[+Animate]	[-Animate]

Having these gender features, I propose the feature representation of Mundari gender probe as in (117),

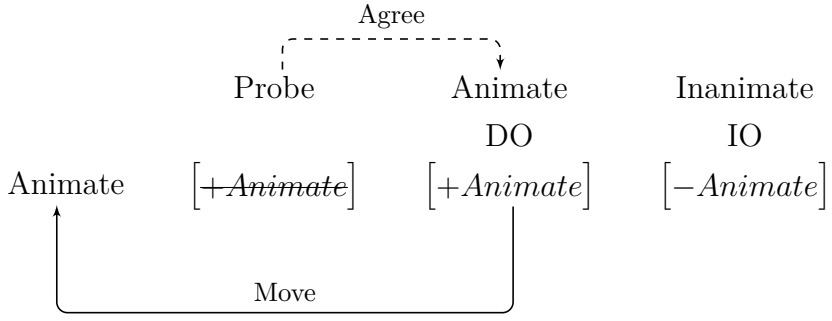
(117) *Mundari gender probe*
[+Animate]

With this feature specification, the Mundari gender probe can agree with only animate nominals and not with inanimates. Therefore, it is only the animate nominal that can undergo clitic doubling. The omnivorous gender table is repeated in (118) and the corresponding derivations are given in (119)-(120).

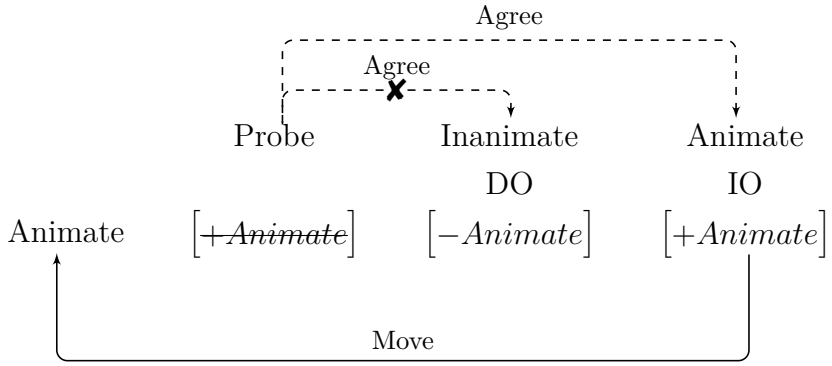
(118) Gender:

Ex.no	DO	IO	OM
(20a)	Animate	Inanimate	Animate
(20b)	Inanimate	Animate	Animate

(119)



(120)



In the derivation in (119), the probing stops with the animate argument and does not proceed to the inanimate argument since there are no features left unchecked in the probe. In the derivation in (120), probing happens with the inanimate argument but Agree fails. The feature subset condition that we posited in (38) allows Agree to happen only if features of the goal are subset of features of the probe. Since the features of the inanimate argument is not a subset of the features of the probe, Agree fails. Subsequently, the probe agrees with the animate argument resulting in the latter's clitic movement.

4.6 Deriving the person, number, and gender hierarchy

Thus far, we have seen the derivation of person, number, and gender at their individual levels in Mundari. When it comes to the combination of all three of these, we need to account for three empirical scenarios. The first is that if one argument completely outranks the other in person, number, and gender, it is obviously the higher-ranked argument that occurs in the OM slot. This scenario is summarized in (121). In the second scenario given in (122), if one argument is higher ranked in person and the other argument is higher-ranked in number, then it is always the IO that occupies the OM slot.

(121) Scenario 1:

Ex.no	DO	IO	OM
(27a)	1SG	3PL	1SG
(27b)	3PL	1SG	1SG
(31a)	1SG	2PL	1SG
(31b)	2PL	1SG	1SG
(30a)	2PL	3DL	2PL
(30b)	3DL	2PL	2PL

(122) Scenario 2:

Ex.no	DO	IO	OM
(28a)	3SG	2PL	2PL
(28b)	2PL	3SG	3SG
(29a)	2SG	1PL	1PL
(29b)	1PL	2SG	2SG
(30a)	3SG	1PL	1PL
(30b)	1PL	3SG	3SG

The third scenario concerns the gender restriction, which can overwrite other hierarchies. As shown in (123), an animate argument with lower-ranked person and number outranks the inanimate argument with higher-ranked person and number. The table summarizing this pattern is given in (124).

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

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

(124) Scenario 3:

Ex.no	DO	IO	OM
(123a)	3PL:Animate	3SG:Inanimate	3PL:Animate
(123b)	3SG:Inanimate	3PL:Animate	3PL:Animate

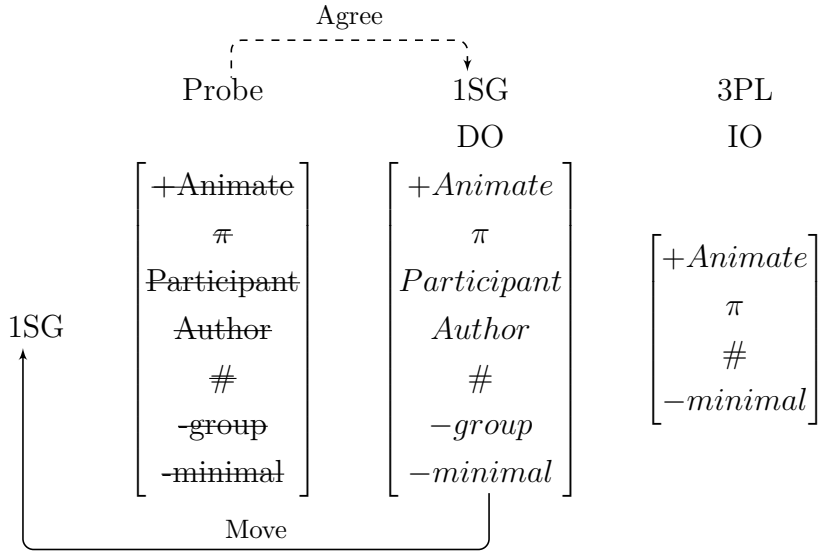
To account for all these scenarios, I propose that the features of the Mundari probe is fully articulated by combining the features of person, number, and gender probes, as shown in (125).

(125)

$$\underset{\text{Person}}{\begin{bmatrix} \pi \\ Participant \\ Author \end{bmatrix}} + \underset{\text{Number}}{\begin{bmatrix} \# \\ -group \\ -minimal \end{bmatrix}} + \underset{\text{Gender}}{\begin{bmatrix} +Animate \end{bmatrix}} = \begin{bmatrix} +Animate \\ \pi \\ Participant \\ Author \\ \# \\ -group \\ -minimal \end{bmatrix}$$

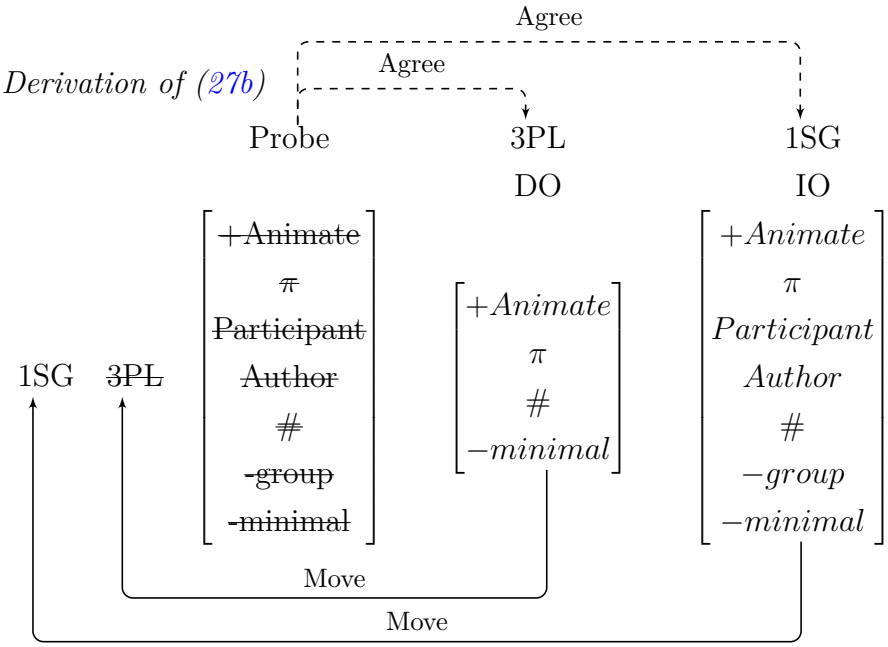
Given this feature specification for the probe, let us first derive scenario 1, in which one argument outranks the other argument both in person and number. In the case of (27a), where the 1SG argument is the DO, all the probe's features can be checked by 1SG and there are no features of the probe left for the 2PL argument to check. Therefore, probe agrees only with the 1SG argument and it is only the 1SG argument that undergoes clitic doubling, as shown in (126).

(126) *Derivation of (27a)*



In the case of (27b), the probe initially agrees with the 3PL argument but the 3PL argument cannot check all the features of the probe. Therefore, the probe agrees further with the 1SG argument in order to check the rest of its features. Here, both the arguments undergo movement but the 1SG clitic that is moved later replaces the 3PL clitic that is moved before (127).

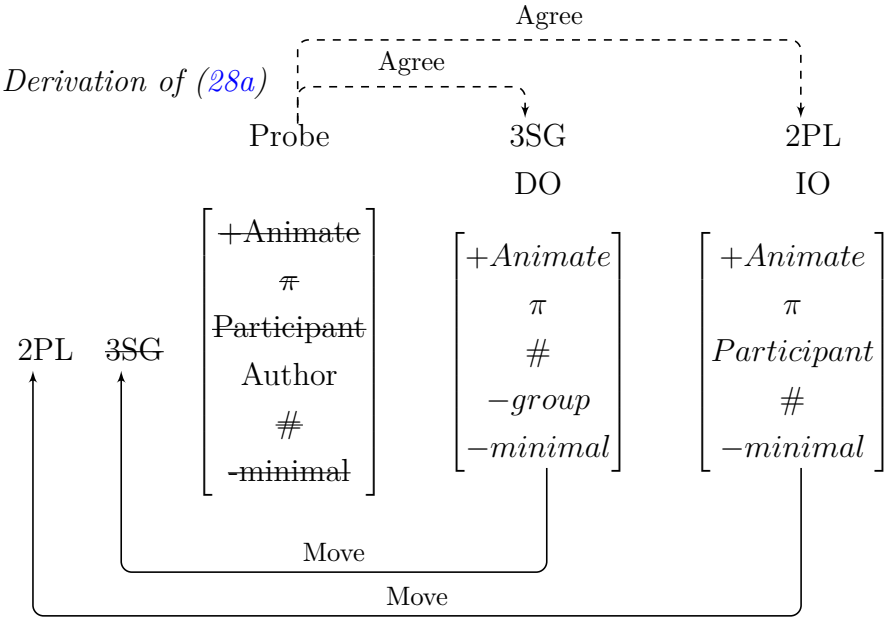
(127) *Derivation of (27b)*



The rest of the examples in scenario 1 also work in the same way as (126) and (127).

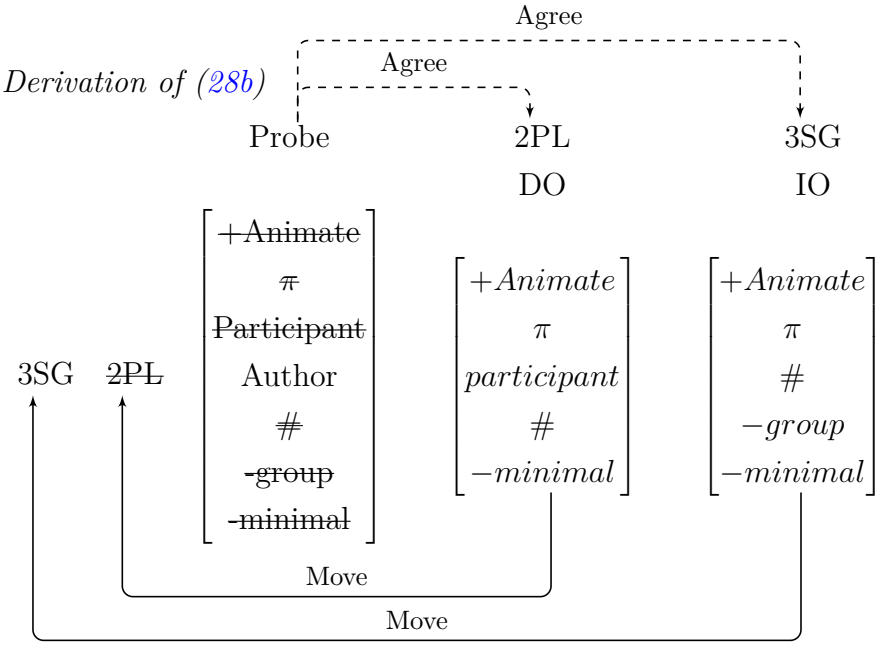
Turning now to the scenario 2, where one argument outranks the other argument in either person or number, the same derivational mechanism yields the correct result. Let us consider the derivation of (28a) given in (128), where the DO is 3SG and IO is 2PL. The 3SG argument does not have features such as [participant] and therefore, probing does not stop with the DO and proceeds to the IO. Since the IO can check at least one feature that is not checked by the DO, the probe agrees with the IO as well. As a result of these Agree relations, the IO clitic eventually replaces the DO clitic.

(128) *Derivation of (28a)*



Similarly, in the derivation of (28b), the DO is 2PL and the IO is 3SG. The 3SG argument has a [-group] feature, which is not present in 2PL argument. Therefore, the probe agrees with both the DO and the IO and once again, the IO clitic replaces the DO clitic as shown in (129).

(129) *Derivation of (28b)*

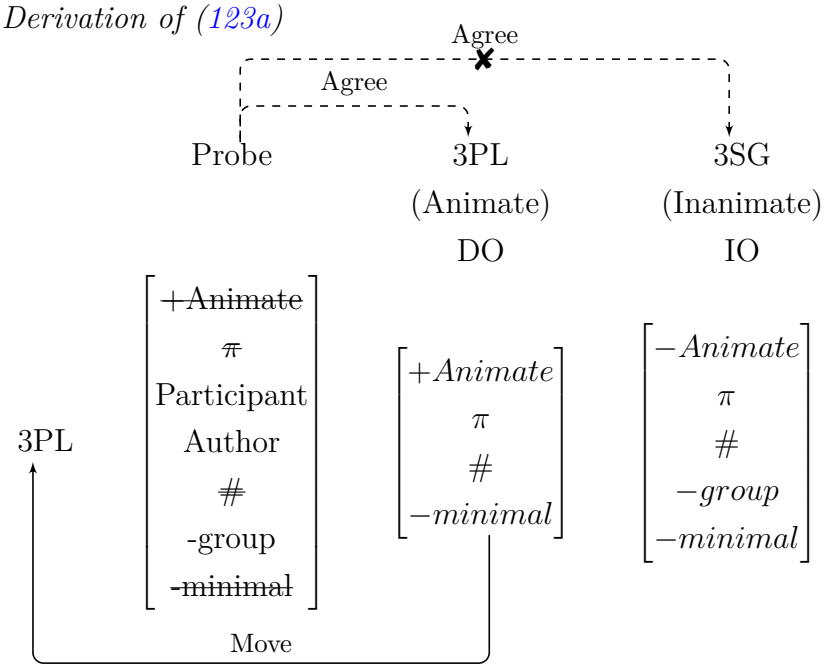


The rest of the examples in scenario 2 work in the same way, where the DO cannot satisfy all the features of the probe. Therefore, the probe agrees with the IO in all the cases, resulting in the IO clitic replacing the DO clitic.

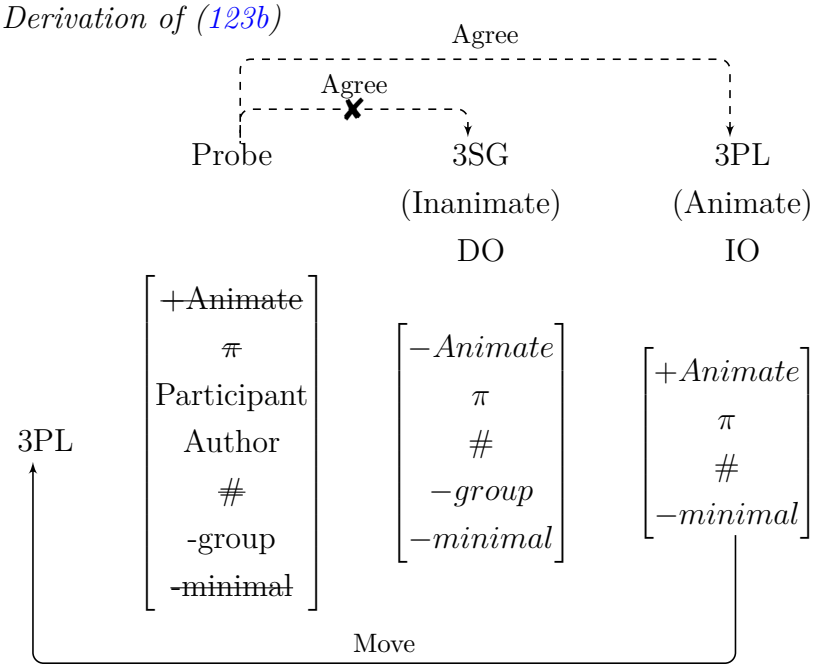
Finally, coming to scenario 3, where the gender restriction can overwrite other person and number scales, let us consider the derivation of (123a), which is given in (130). Here, the probe agrees with the 3PL animate DO but not with the inanimate IO. The subset condition that we posited in (38) allows Agree only when features of the goal are a subset of the features of the probe. The [-animate] feature of IO proves that the features of the

IO do not form a subset of the features of the probe. Therefore, Agree fails with the IO despite the IO having other features that could have checked the probe's features. In the other order of (123b) given in (131), the probe fails to agree with the inanimate DO but agrees with the animate IO, which then undergoes clitic doubling movement.

(130) *Derivation of (123a)*



(131) *Derivation of (123b)*



Having accounted for all three types of empirical scenarios of person, number, and gender combinations, the derivational mechanism of Agree and clitic doubling that we set up in section 4.1 proves to be accurate.

5 Conclusion

In this paper, I have shown that Mundari exhibits an omnivorous effect for person, number, and gender in the ditransitive construction, where both the direct object and the indirect object compete for a single object marking slot in the verbal complex. In the case of person, the omnivorous effect works along the hierarchy, where the 1st person outranks the 2nd person and 2nd person outranks the 3rd person. In the case of omnivorous number, it is again the hierarchy, where the singular outranks the plural and the plural outranks the dual. In the case of gender, it is a restriction rather than hierarchy, where only the animate nominal can be cross-referenced as object marking but not the inanimate nominal.

In order to account for each of these omnivorous effects, I proposed an analysis by appealing to the articulated nature of the person, number, and gender probes as in (132) .

(132) Feature specification of probes:

$$\underset{\text{Person}}{\begin{bmatrix} \pi \\ Participant \\ Author \end{bmatrix}} \quad \underset{\text{Number}}{\begin{bmatrix} \# \\ -group \\ -minimal \end{bmatrix}} \quad \underset{\text{Gender}}{\begin{bmatrix} +Animate \end{bmatrix}}$$

The person and number probes can agree with lower-ranked person and number arguments as they have the relevant features, but the gender probe can never agree with inanimate arguments as it does not have the relevant feature corresponding to inanimacy. This in effect enabled the derivation of the person and number hierarchies and the gender restriction in a similar way.

When it comes to the combination between person, number, and gender, Mundari displayed three empirical scenarios. In the first scenario, where one argument outranks the other argument in person, number, and gender, the higher-ranked argument occupies the OM slot. In the second scenario, where one argument outranks the other in either person or number, IO occupies the OM slot. In the third scenario, where the lower-ranked animate argument outranks the higher-ranked inanimate one, OM is cross-referenced by the lower ranked animate argument. These empirical scenarios are accounted for by a simple extension of the proposed analysis. This extension involved making the feature specification of the probe rich with all the features of the person, number, and gender probes as in (133).

(133) $\begin{bmatrix} +Animate \\ \pi \\ Participant \\ Author \\ \# \\ -group \\ -minimal \end{bmatrix}$

Along with the probe's feature specification, the clitic doubling system that requires prior syntactic φ-agreement could derive all the omnivorous patterns of Mundari.

References

Anagnostopoulou, Elena (2003). *The syntax of ditransitives*. Mouton de Gruyter: Berlin.

Anagnostopoulou, Elena (2006). Clitic doubling. In M. Everaert and H. van Reimsdijk (eds). *The Blackwell companion to syntax*. Vol. 1. Blackwell Publishing: Malden. chapter 14. 519–581.

Anderson, Gregory D.S. (2007). *The Munda verb: Typological perspectives*. Mouton de Gruyter: Berlin.

Arregi, Karlos and Andrew Nevins (2008). Agreement and clitic restriction in Basque. In R. D'Alessandro, S. Fischer and G. H. Hrafnbjargarson (eds). *Agreement restriction*. De Gruyter Mouton: Berlin. 49–86.

Arregi, Karlos and Andrew Nevins (2012). *Morphotactics: Basque auxiliaries and the structure of spellout*. Springer Science: Berlin.

Barrie, Michael (2016). Another note on number. *Studies in Generative Grammar* 26(1). 97–113.

Béjar, Susana (2011). Remarks on omnivory and complementarity: a commentary on the paper by Andrew Nevins. *Natural Language and Linguistic Theory* 29. 973–997.

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

Béjar, Susana and Milan Rezac (2003). Person licensing and the derivation of PCC effects. In A. T. Pérez-Leroux and Y. Roberge (eds). *Romance linguistics: Theory and acquisition*. John Benjamins: Amsterdam. 49–62.

Béjar, Susana and Milan Rezac (2009). Cyclic agree. *Linguistic Inquiry* 40(1). 35–73.

Belletti, Adriana (2005). Extended doubling and the VP periphery. *Probus* 17. 1–35.

Bhattacharya, Tanmoy (2016). Inner/Outer Politeness in Central Māgadhan Prākrit Languages: Agree as Labeling. *Linguistic Analysis* 40(3-4). 297–336.

Bruening, Benjamin (2010). Ditransitive asymmetries and a theory of idiom formation. *Linguistic Inquiry* 41(3). 519–562.

Cecchetto, Carlo (2005). Doubling structures and reconstruction. *Probus* 12. 93–126.

Chomsky, Noam (1995). *The Minimalist Program*. MIT Press: Cambridge, MA.

Chomsky, Noam (2000). Minimalist inquiries: The framework. In R. Martin, D. Michaels and J. Uriagereka (eds). *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*. MIT Press: Cambridge, MA. 89–155.

Cowper, Elizabeth (2005). A note on Number. *Linguistic inquiry* 36. 441–455.

Craenenbroeck, Jeroen van and Marjo van Koppen (2008). Pronominal doubling in Dutch dialects: Big DPs and coordinations. In S. Barbiers, O. Koeneman and M. Lekakou (eds). *Microvariation in syntactic doubling*. Emerald: Bingley. 207–249.

Gosh, Arun (2008). Santali. In G. Anderson (ed.). *The Munda Languages*. Routledge: London. 7–98.

Harley, Heidi and Elizabeth Ritter (2002). Person and number in pronouns: A feature-geometric analysis. *Language* 78(3). 482–526.

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.

Kidwai, Ayesha (2020). Doubling Back: The curious case of Santali pronominal incorporation and clitic doubling. Talk presented at CALTS WebTalk Series-1, University of Hyderabad.

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

Marantz, Alec (1993). Implications of assymetries in DOC. In S. Mchombo (ed.). *Theoretical aspects of Bantu grammar*. CSLI Publication: Stanford. 113–150.

Murugesan, Gurujegan (2020). Postsyntactic movements in Mundari. Talk presented at CALTS WebTalk Series-1, University of Hyderabad.

Nevins, Andrew (2007). The representation of third person and its consequences for person-case effects. *Natural Language and Linguistic Theory* 25. 273–313.

Nevins, Andrew (2011). Multiple agree with clitics: person complementarity vs. omnivorous number. *Natural Language and Linguistic Theory* 29. 939–971.

Osada, Toshiki (1992). *A reference grammar of Mundari*. Institute for the Study of Languages and Cultures of Asia and Africa: Tokyo.

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.

Preminger, Omer (2019). What the PCC tells us about "abstract" agreement, head movement, and locality. *Glossa* 4(1). 13.

Pylkkänen, Liina (2008). *Introducing arguments*. MIT press: Cambridge,MA.

Smith, Ian and Steve Johnson (1979). The cliticization of case-markers in Nganhcara. Paper presented at the Australian Linguistic Society, Newcastle.

Suñer, Margarita (1988). The role of agreement in clitic-doubled constructions. *Natural Language and Linguistic Theory* 6(3). 391–434.

Torrego, Esther (1992). Case and argument structure. Ms. University of Massachusetts.

Trommer, Jochen (2010). A postsyntactic morpheme cookbook. Paper presented at the perspectives on the Morpheme workshop, Coimbra..

Uriageraka, Juan (1995). Aspects of the syntax of clitic placement in Western Romance. *Linguistic inquiry* 26(1). 79–124.