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 Astroasiatic language, spoken by the Mundari tribes belonging to the Jharkhand region of Indian subcontinent exhibits an omnivorous pattern for person, number and gender. This pattern is seen in the ditransitive construction when both indirect object and direct object 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 animacy based gender system. In order 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 nature of probe that agrees with a goal for certain specific features (Béjar and Rezac 2003).

1 Introduction

The term 'omnivorous' is orginally from Nevins (2011) and he refers to it as an agreement pattern in which the agreement slot is invariably filled by a particular φ-value and this φ-value 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 omnivorous agreement pattern is possible only with number but not with person.[2] However, there are cases like the Kichean Agent-Focus construction (Preminger 2014), which exhibit an omnivours

---

[2] Nevins's (2011) approach predicts two things. The first one is the presence of person case constraint and absence of number case constraint and the second one 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.

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 Astroasiatic language, exhibits an ominivorous pattern for both person and number in addition to gender. Based on a novel data from fieldwork, I show that the omnivorous pattern is especially seen 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 under 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 more in detail in section 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 1st person and 2nd person arguments but Mundari maintains a distinction between them, where the 1st person outranks the 2nd person. In the case of Georgian, the number scale is PL > SG as we have 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 both in Kichean and Georgian.[3] The independent scales for different φ-values in Mundari present a rare instance 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 another argument of a higher ranked number with a lower ranked person (i.e. 1PL vs. 2SG). In such a case of a ranking clash, the IO is chosen over the DO.

In order 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 nature of probe that agrees with a goal for certain specific features (Béjar

---

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

and Rezac 2003). The paper is structured as follows: In section 2, I discuss the basic typological overview of Mundari. In section 3, I present data that qualifies the hierarchy given in (3). In section 4, I propose an analysis that derives the hierarchy and the interaction between them. Section 5 is the conclusion.

2 Typological Overview

Mundari belongs to the Kherwarian group of the North Munda branch of Astroasiatic language family and it is mainly spoken in the eastern Indian state Jharkhand.[4] Apart from a handful of descriptive works including Anderson (2007), Osada (1992, 2008), Mundari is one of the many understudied languages of Indian subcontinent. It is an SOV language with an elaborate set of head markings affixes occuring 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-<u>kin</u>
            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-<u>ko</u>
            police-PL thief-DL   catch-INGR-TR-3DL.OM-IND-3PL.SM
            'The policeman 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 examples that we have seen above, SM can also occur as a suffix to objects. Compare (5), where the subject marker appears on the verb with (6) where it surfaces in the direct object.

(6)   a.   pusi-kin seta-ko-<u>kin</u>   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-<u>ko</u> sab-ja-d-kin-a
            police-PL thief-DL-3PL.SM catch-INGR-TR-3DL.OM-IND
            'The policeman 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 the adverb that occurs preverbally.

(7) kumbuɽu-kin hola-kin   sab-ja-n-a
    thief-DL   yesterday-3DL.SM catch-INGR-ITR-IND
    'Two thieves have been 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 clitic is in initial or a final position in a sentence.
    b. Parameter 2: If clitic is before or after a given constituent.
    c. Parameter 3: If 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 this language, similar to SM in Mundari, the clitic occurs either sentence finally as a suffix to the verb (9a) or as a suffix to any perverbal 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 the 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 exact same distribution, it also qualifies to be Type 5 clitic.

When it comes to the OM, it does not have the same distributional properties as SM despite the fact that the same marker that is used as SM is also used as OM. The SM and OM paradigm is given in (10), which corresponds to the pronominal paradigm given 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.

(11) except for the initial vowel.[7] Therefore, it is safe to consider 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) Mundari 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 not been consensus regarding which one 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. However, Gosh (2008) makes an opposite observation again in 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.

First, let us look at 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:

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

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

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

---

[7]Mundari is an optional pro-drop language, where pronominals can dropped and their informations 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 as clitics rather than φ-agreement inflection (Kidwai 2005, Bhattacharya 2016).

(13)   2 > 3:

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

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

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

(14)   1 > 3:

    a. hon-ko   aiɲ ke   Ravi ke-ko ɛm-a-i<u>ɲ</u>-ta-n-a
        children-PL 1SG EMP Ravi EMP- give-BEN-<u>1SG.OM</u>-PROG-ITR-IND
        'Children are giving me to Ravi.'

    b. hon-ko   Ravi ke   aiɲ ke-ko ɛm-a-i<u>ɲ</u>-ta-n-a
        children-PL Ravi EMP 1SG EMP give-BEN-<u>1SG.OM</u>-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-<u>i</u>-ta-n-a
        1SG EMP Ravi EMP children-PL-1SG.SM give-BEN-<u>3SG.OM</u>-PROG-ITR-IND
        'I am giving Ravi to children.'

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

In the combination of PL and DL, the OM slot is referred by PL argument.

(17)   PL > DL:

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

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

When it comes to the combination between SG and DL, the OM slot refers to the SG argument.

(18) SG > DL

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

b. aiɲ hon-kin Ravi ke-iɲ ɛm-a-<u>i</u>-ta-n-a
1SG children-DL Ravi EMP-1SG.SM give-BEN-<u>3SG.OM</u>-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 oṛak'-iɲ ɛm-a-<u>ko</u>-ta-n-a
1SG cat-PL EMP house-1SG.SM give-BEN-<u>3PL.OM</u>-PROG-ITR-IND
'I am giving cats to the house.'

b. aiɲ oṛak bilai-ko ke-iɲ ɛm-a-<u>ko</u>-ta-n-a
1SG house cat-PL EMP-1SG.SM give-BEN-<u>3PL.OM</u>-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 with gender compared to person and number is that lower ranked person and lower ranked number argument (i.e. 3DL) can be cross-referenced in the absence of corresponding higher ranked arguments (22) but inanimate argument can never refer to OM even in the absence of animate argument (23).

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

(23) aiɲ oṛak 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 in 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 to 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

If we particularly notice the person and number tables in (24) and (25), we kept the number value constant in (24) and the person value constant in (25). Now we can vary both person and number values in order to determine how OM is cross-referenced in such cases. A non-exhaustive sample of such different person and number combinations are given in (27)-(31).

(27) Combination of 1SG and 3PL:

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

    b. hon-ko   ako ke aiɲ ke-ko   ɛm-a-<u>iɲ</u>-ta-n-a
       children-PL 3PL EMP 1SG EMP-3PL.SM give-BEN-<u>1SG.OM</u>-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-<u>pe</u>-ta-n-a
       children-PL Ravi EMP 2PL EMP-3PL.SM give-BEN-<u>2PL.OM</u>-PROG-ITR-IND
       'Children are giving Ravi to you(PL).'

    b. hon-ko   ape ke Ravi ke-ko   ɛm-a-<u>i</u>-ta-n-a
       children-PL 2PL EMP 3SG EMP-3PL.SM give-BEN-<u>3SG.OM</u>-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-<u>bu</u>-ta-n-a
       children-PL 2SG EMP 1PL EMP-3PL.SM give-BEN-<u>1PL.OM</u>-PROG-ITR-IND
       'Children are giving you(SG) to us.'

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

    b. hon-ko   abu ke Ravi ke-ko   ɛm-a-<u>i</u>-ta-n-a
       children-PL 1PL EMP Ravi EMP-3PL.SM give-BEN-<u>3SG.OM</u>-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-<u>iɲ</u>-ta-n-a
       children-PL 1SG EMP 2PL EMP-3PL.SM give-BEN-<u>1SG.OM</u>-PROG-ITR-IND
       'Children are giving me to you(PL).'

    b. hon-ko   ape ke aiɲ ke-ko   ɛm-a-<u>iɲ</u>-ta-n-a
       children-PL 2PL EMP 1SG EMP-3PL.SM give-BEN-<u>1SG.OM</u>-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

9

The data in (32) seems random at first instance because OM remains constant in (27a&b) and (31a&b) but in the rest of the cases, OM does not remain constant. However, careful examination of data reveals an interesting pattern. In those cases, where OM remains unchanged, both the person and number values of one argument outranks the person and number values of the other argument. For instance, in (27a&b), 1SG argument is higher ranked in both person and number compared to 3PL argument. 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), 2SG argument outranks 1PL argument in number but not in person. Similarly, 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.

In order to make sure that ranking clash between number and person is what results in different values for OM, we can look at combination of let's say 2PL and 1DL. In this combination, we would expect OM values to be different since there is a ranking clash in this combination. On the other hand, in the combination of 2PL and 3DL, we would expect OM values to be same since there is no ranking clash in this combination. Both these predictions are proved to be right as shown in (33) and (34).

(33)   Combination of 2PL and 1DL:

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

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

    b. aiɲ akin ke   ape ke-iɲ   ɛm-a-<u>pe</u>-ta-n-a
       1SG 3DL EMP 2PL EMP-1SG.SM give-BEN-<u>2PL.OM</u>-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 the IO both in 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 working mechanism of agreement 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).
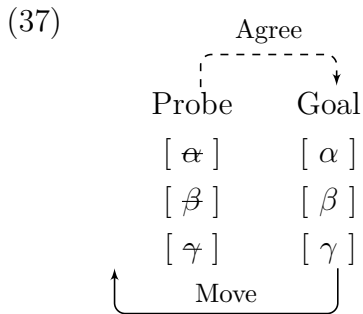
4.1 Assumptions

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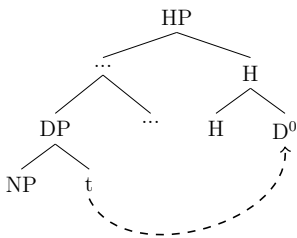
Following Preminger (2019), I assume that this head movement that results in clitic doubling necessarily involves prior syntactic φ-agreement between H and DP. The φ-agreement can be modeled as Agree (Chomsky 2000) that involves probe-goal mechanism, where the probe searches its c-command domain to find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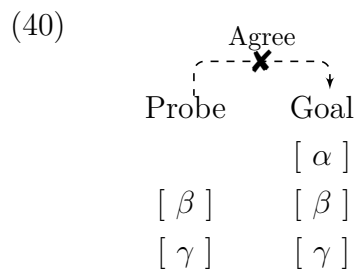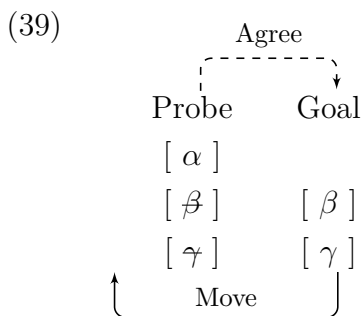
goal also has the same the same set of features, all of the probes features are checked resulting in successful Agree. Since we are also dealing with an instance of clitic doubling, we can implement it by allowing the goal to move and adjoin the probe as shown in (37).

(37)

```
                    Agree
           ┌ - - - - - - ┐
                         ↓
        Probe          Goal
        [ α̶ ]          [ α ]
        [ β̶ ]          [ β ]
        [ γ̶ ]          [ γ ]
        └──────Move──────┘
```

In this Agree relation, there is an exact match between the features of probe and features of goal. However, if there is a mismatch between number of features of probe and number of features of goal, I assume a feature subset condition as in (38), which allows Agree to happen only when the features of goal stand in subset relation to the features of probe.

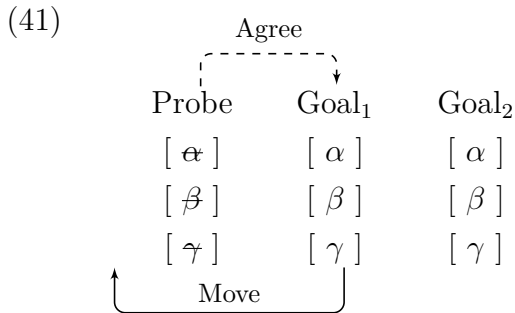(38)   Features of Goal $\subseteq$ Features of Probe.

The condition given in (38) works at two levels. On the one hand, it allows Agree to happen even when Goal does not have all the features corresponding to probe and on the other hand, it disallows Agree when goal has a feature that is not present in probe. As illustrated in (39), Agree is successful since features of Goal is a subset of features of probe. However, in (40), Agree fails because features of goal is not a subset of features of probe. Consequently, the clitic movement happens in (39) but not in (40).

(39)

```
                 Agree
        ┌ - - - - - - ┐
                      ↓
     Probe          Goal
     [ α ]
     [ β̶ ]          [ β ]
     [ γ̶ ]          [ γ ]
     └──────Move──────┘
```

(40)

```
                 Agree
        ┌ - - - ✗ - - ┐
                      ↓
     Probe          Goal
                    [ α ]
     [ β ]          [ β ]
     [ γ ]          [ γ ]
```
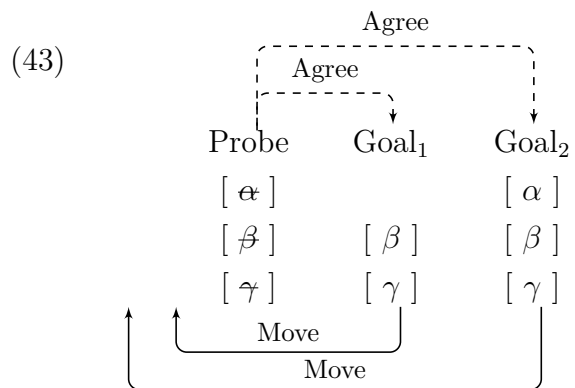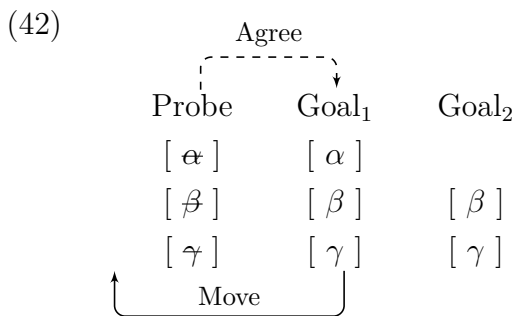
The system described above works for simple cases where there is one to one correspondence between a probe and a goal. However, there are many instances pointed out in literature where a single probe interacts with multiple goals (Béjar and Rezac 2009).[9] In such cases, I assume that structural hierarchy 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 probe

---

[9]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 to simultaneously agree with two goals.

agrees only with Goal_1 but not with Goal_2. Therefore, it is only the Goal_1 that undergoes movement for clitic doubling.

(41)

$$
\begin{array}{ccc}
 & \overset{\text{Agree}}{\overbrace{\text{Probe} \quad \text{Goal}_1}} & \text{Goal}_2 \\
 [\,\cancel{\alpha}\,] & [\,\alpha\,] & [\,\alpha\,] \\
 [\,\cancel{\beta}\,] & [\,\beta\,] & [\,\beta\,] \\
 [\,\cancel{\gamma}\,] & [\,\gamma\,] & [\,\gamma\,] \\
 & \underset{\text{Move}}{\underbrace{\qquad\qquad}} &
\end{array}
$$

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 compared to Goal_1, as in (42), this would not affect the Agree relation between the probe and Goal_1. On the other hand, if Goal_1 has fewer features than Goal_2, then probing does not stop with Goal_1 and it will proceed to Goal_2. As illustrated in (43), there is no $[\,\alpha\,]$ in Goal_1 and consequently, probe agrees with Goal_1 for $[\,\beta\,]$ and $[\,\gamma\,]$ and with Goal_2 for $[\,\alpha\,]$. Since both Goal_1 and Goal_2 are involved in Agree, they both undergo movement for clitic doubling.

(42)

$$
\begin{array}{ccc}
 & \overset{\text{Agree}}{\overbrace{\text{Probe} \quad \text{Goal}_1}} & \text{Goal}_2 \\
 [\,\cancel{\alpha}\,] & [\,\alpha\,] & \\
 [\,\cancel{\beta}\,] & [\,\beta\,] & [\,\beta\,] \\
 [\,\cancel{\gamma}\,] & [\,\gamma\,] & [\,\gamma\,] \\
 & \underset{\text{Move}}{\underbrace{\qquad\qquad}} &
\end{array}
$$

(43)

$$
\begin{array}{ccc}
 & \overset{\text{Agree}}{\overbrace{\overset{\text{Agree}}{\overbrace{\text{Probe} \quad \text{Goal}_1}} \quad\quad \text{Goal}_2}} \\
 [\,\cancel{\alpha}\,] & & [\,\alpha\,] \\
 [\,\cancel{\beta}\,] & [\,\beta\,] & [\,\beta\,] \\
 [\,\cancel{\gamma}\,] & [\,\gamma\,] & [\,\gamma\,] \\
 & \underset{\text{Move}}{\underbrace{\qquad}} \\
 & \underset{\text{Move}}{\underbrace{\qquad\qquad\qquad}} &
\end{array}
$$

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

4.2 Structure of Mundari ditransitives

As we have already 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, for my native speaker informants, there is no way to distinguish DO and 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-i̠-ta-n-a
          children-PL 1SG EMP 3PL EMP-1SG.SM give-BEN-3SG.OM-PROG-ITR-IND
          'Children are giving me to them.'

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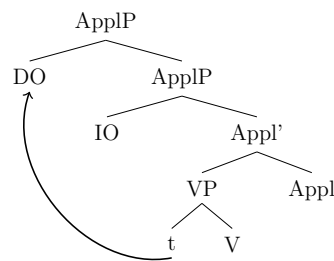   'Intended: Children are giving me to them.'

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).
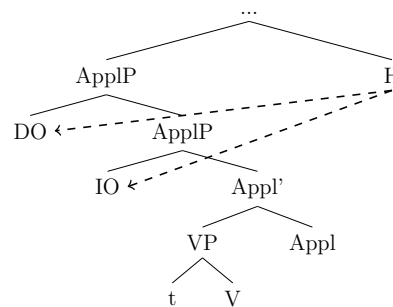
(45) Applicative construction:

```
          ApplP
         /     \
       IO      Appl'
              /     \
            VP      Appl
           /  \
          DO   V
```
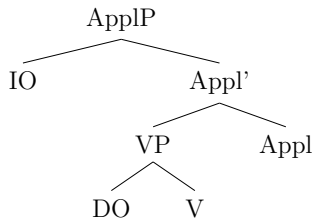
In (45), IO is structurally higher than DO but in the linear order of Mundari, it is the DO that precedes the IO. In order for the structural hierarchy to reflect the linear order, I assume that DO in Mundari always undergo phrasal movement similar to object shift to the outer specifier of ApplP as in (46). An advantage of positing such movement is that it not only accounts for the correct word order but also lets 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.[10]

(46)

```
        ApplP
       /     \
      DO     ApplP
            /     \
          IO      Appl'
                 /     \
               VP      Appl
              /  \
             t    V
```

(47)

```
              ...
            /     \
         ApplP     H
        /     \
      DO       ApplP
              /     \
            IO      Appl'
                   /     \
                 VP      Appl
                /  \
               t    V
```

When it comes to the nature of the head H, the simplest option is consider it as *v* that takes ApplP as its complement. However, the difference in the order of morphemes in the verbal complex between simple transitives and ditransitives seem to suggest that it is not *v*. Let us compare the verbal template of both these constructions. In the case of simple transitives that we have already seen in (4) (repeated as (48a) below), the OM

---

[10]This configuration, where DO and IO occurring as specifiers of same head make them both to be equidistant (Chomsky 1995) from the probe H.

occurs following the aspect and valency but in the ditransitives in (48b), OM occurs right after benefactive suffix but before aspect and valency.[11]

(48) a. Simple transitives: VERB-ASPECT-VALENCY-<u>OM</u>-MOOD

b. Ditransitives: VERB-BENEFACTIVE-<u>OM</u>-ASPECT-VALENCY-MOOD

If we assume that valency, which indicates transitivity of the clause is hosted at v, then we can deduce why OM does not follow valency in ditransitives. It is because the valency in ditransitves is always indicated by the intransitive marker in Mundari. As it can be seen in the intransitive construction in (7) (repeated as (49a) below) and any ditransitive construction that we have seen so far, lets say (44a) (repeated as (49b) below), they both are indicated by the same intransitive valency marker but in the case of simple transitive clause in (6a) (repeated as (50) below), valency is indicated by a transitive marker.

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

b. hon-ko   aiɲ ke   ako ke-ko   ɛm-a-i-ta-<u>n</u>-a
    children-PL 1SG EMP 3PL EMP-1SG.SM give-BEN-3SG.OM-PROG-<u>ITR</u>-IND
    'Children are giving me to them.'

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

If it is only the transitive suffix that can host the OM but not the intransitive suffix, then this explains why the OM is not following the intransitive marker in ditransitive construction. Therefore, OM is not hosted at v in the case of 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 seperate 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):
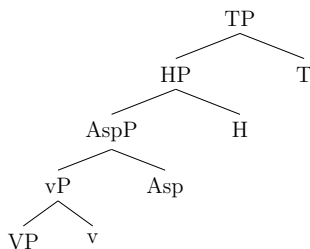
[11]In (48), I have not indicated the freely alternating SM as it is not relevant to the present discussion.

Similar to the HP in (51), I assume that there is a distinct HP in Mundari ditranstives located right above the ApplP and in line with the assumption made earlier, 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_1^0 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_2^0 as well as shown in (53).

(52)
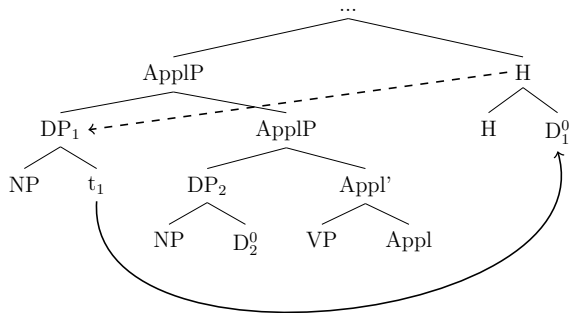
(53)
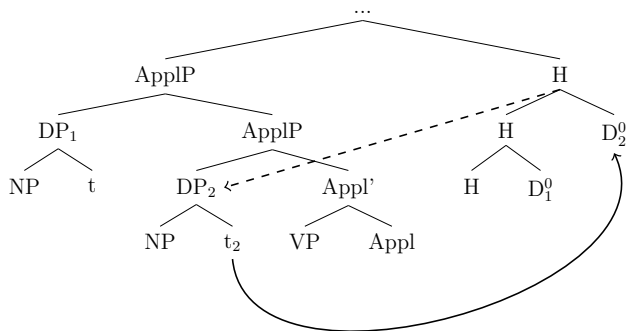
The structure in (53) have two OM adjoining to the head H but Mundari ditransitives allows only one OM. Here I assume that this is resolved at post-syntax, where D_1^0 is invariably deleted in the presence of D_2^0 as indicated in the deletion rule (54).

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

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.

Now having elaborated on all the ingredients that are required for the derivation, we will next turn to the derivation, where I will first derive the omnivorous pattern in person, number and gender and then move to the combination 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 a couple of proposals that deal with similar ominivorous effects in person in order 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 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

17

Leaving aside the 1st person for the moment, the proposal to account for (58) both in Preminger (2014) and Béjar and Kahnemuyipour (2017) is essentially 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 it is relativized for the feaure [participant] based on Harley and Ritter's (2002) feature geometry given in (59).[12]
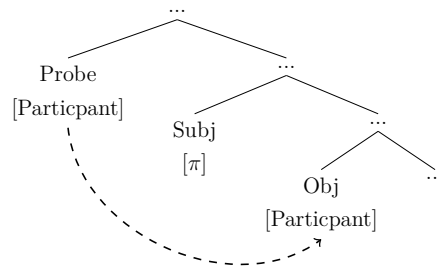
(59)

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)
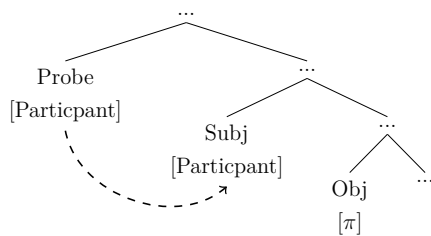
(61)

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.'

---

[12]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].

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))

Now to account for the absence of omnivorous effect in (63), B&K do not need to posit anything in addition because the relativized nature of 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 structually higher argument and there is no agreement with lower argument.

However, to account for the ungrammaticality of (62) in the Kichean AF, the relativization of the probe alone is not enough. 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, ungrammaticality of (62) can be explained. The probe relativized for [particiapant] will always agree with structurally higher argument in the combination of 1st and 2nd person arguments. Therefore, the structurally lower argument with [particiapant] feature would remain unlicensed resulting in violation of PLC and thus, leads 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.'

19

b. hon-ko   am ke aiɲ ke-ko   ɛm-a-<u>iɲ</u>-ta-n-a
   children-PL 2SG EMP 1SG EMP-3PL.SM give-BEN-<u>1SG.OM</u>-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 [participant] of 2SG in (65a) would remain unlicensed leading to ungrammaticality. Since it 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 agreement with structurally higher argument (like Eastern Armenian) but not with the lower argument in (65b). Therefore, for Mundari, I propose that 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 probe are checked by corresponding features of 1st person. This is followed by clitic doubling movement of the same argument.

(68) Derivation of (12a):

20
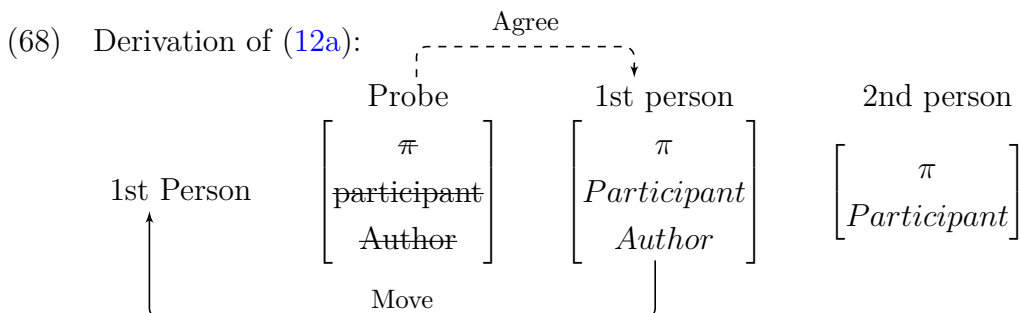
In the above derivation, the probe does not agree with 2nd person IO because there is no features of probe left unchecked by 1st person DO for 2nd person IO to agree with. Since probe does not agree with IO, it does not undergo clitic doubling movement.

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 the [Author] feature, which is not present in the 2nd person argument. Since Agree is anyway successful for rest of the feature, the 2nd person argument undergoes clitic doubling movement. Now for the probe to check its [Author] features, it agrees with 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 application of this rule in post-syntax, the clitic moved by the first movement operation is deleted in the presence of clitic moved by the second movement operation. In essence, the IO clitic replaces the DO clitic in (70).

(70) Derivation of (12b):
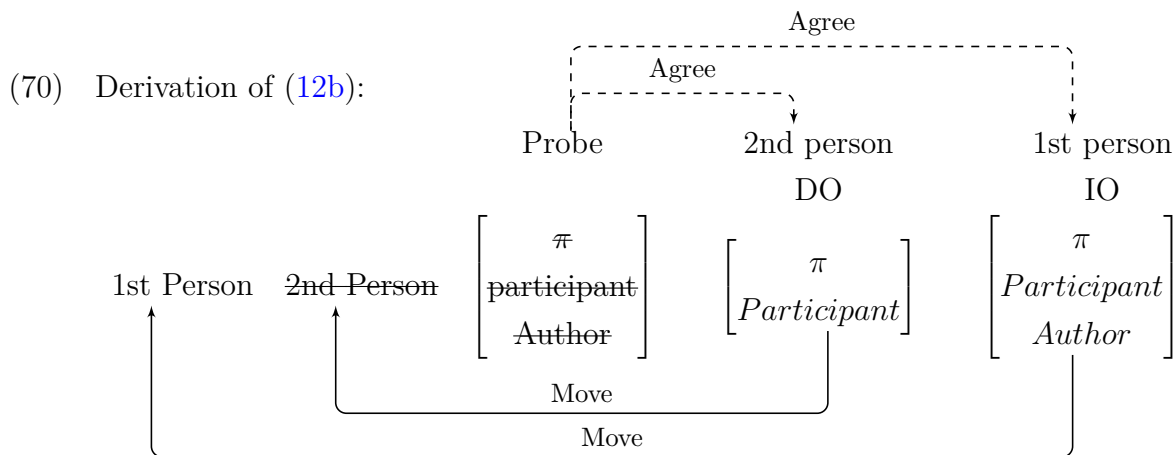
The rest of the derivations work in the same way as shown in (71)-(74), where the probe agrees with IO only when IO can check at least one feature that is not checked by DO. In all other instances, the probe agrees only with DO. Furthermore, whenever there is an agreement with IO, the IO clitic will invariably replace the DO clitic.

(71) Derivation of (13a):

21

(72) Derivation of (13b):

(73) Derivation of (14a):

(74) Derivation of (14b):
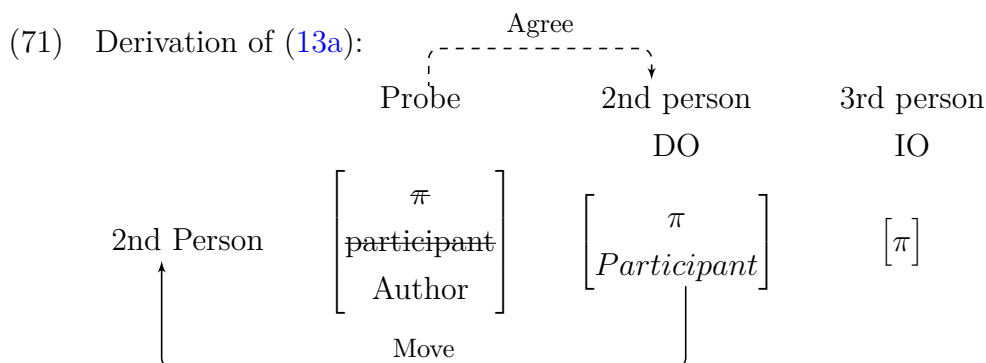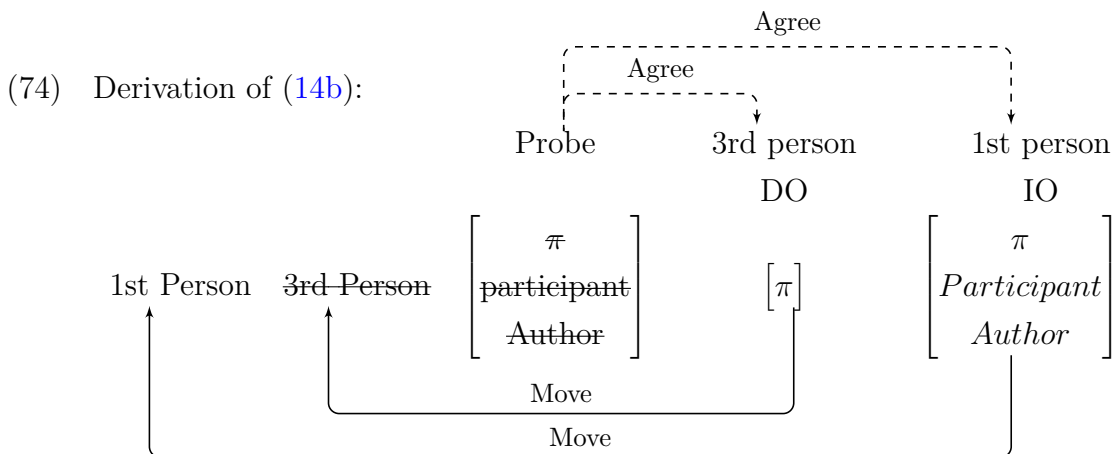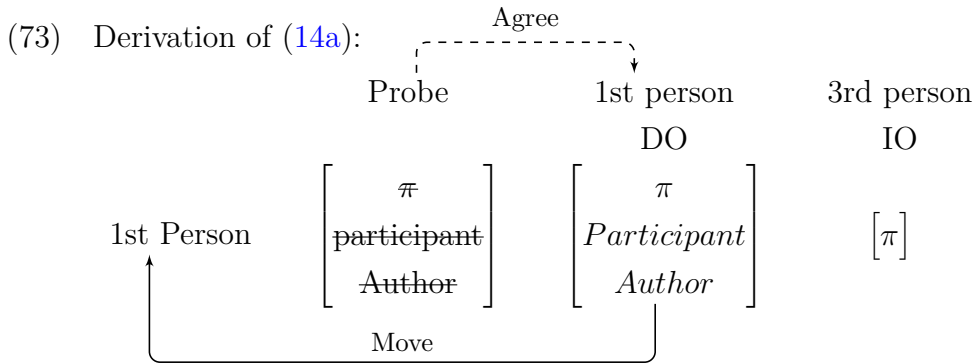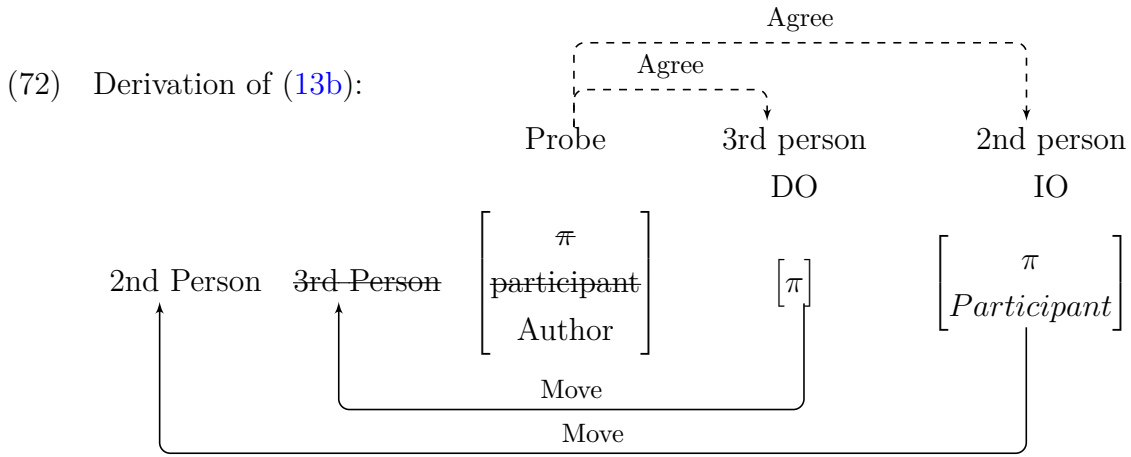
4.4   Deriving Number hierarchy

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 deals with 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&R notes that there is no independent number scale as it is always parasitic on person agreement and same 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).

(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 both in Kichean and Georgian and the examples in (76) and (77) clearly suggest that number scale in these languages is as in (78).
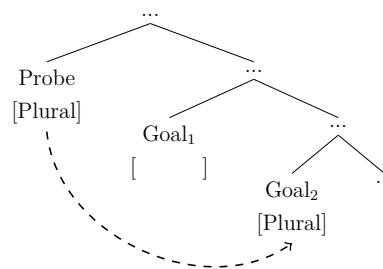
(78) PL > SG

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).
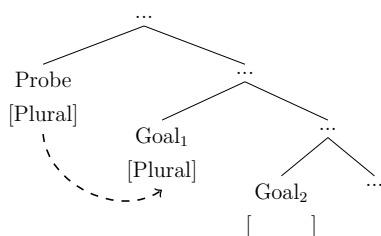
(79) (80)

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

(81) Onondaga

    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

In order to account for (83), Barrie (2016) compares feature inventories proposed in Harley and Ritter (2002) (84) with Cowper's (2005) feature inventories (85). The difference between them is that in the former, dual is more specified than plural and in the latter, plural is more specified than the dual.

(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 with the plural argument. Harley and Ritter's feature system cannot derive this fact because if we assume probe is specified for [group], then agreement can be either with plural or dual argument. Thus, it cannot be only with plural argument. On the other hand, if we assume that probe is specified for [minimal], then agreement can only be with dual.

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

4.4.2 Back to Mundari Number

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

(86) PL > SG

In the same number combination, the above scale is an 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 same for both Onondaga and Mundari as shown in (88).

(88) PL > DL

Since Barrie (2016) makes use of Cowper's system to derive Onondaga facts that involves dual number, let us consider the same feature system in terms of an Agree model that we are pursuing in this paper. First to derive the scale in (88), let us assume that probe is fully specified in terms of Cowper's feature inventories as in (89),
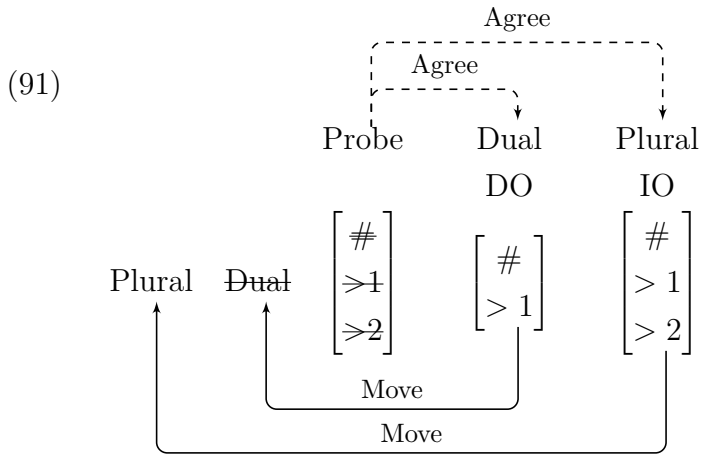
(89) Mundari Number Probe (to be revised):
$$\begin{bmatrix} \# \\ > 1 \\ > 2 \end{bmatrix}$$

In the combination between plural and dual argument, the probe with its features specified as in (89) can successfully establish an Agree relation with plural argument as shown in (90). This Agree relation is followed by clitic doubling movement. Furthermore, there is no agreement with dual argument in this case because all the features of the probe are already checked by the plural argument.
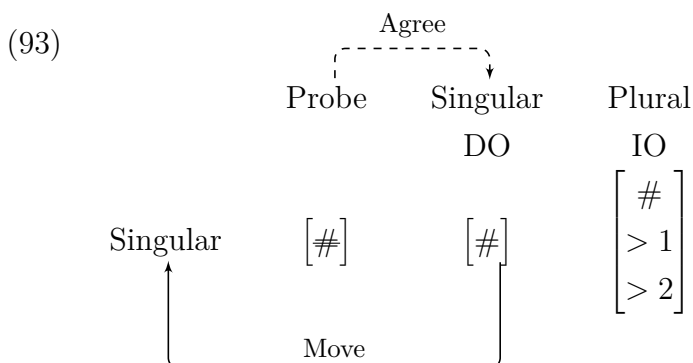
(90)
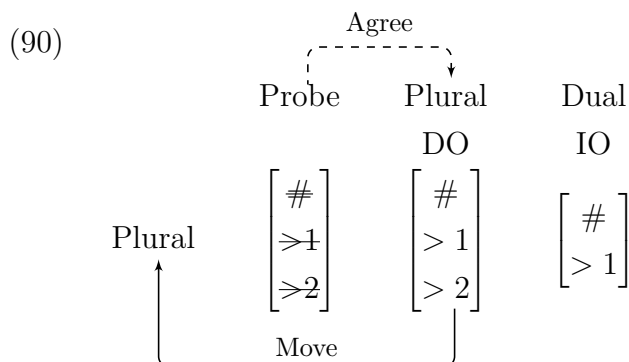
In the same number combination, if dual argument is closest to the probe, then dual cannot check all the features of the probe. Therefore, the probe agrees with dual only for [#] and [>1] and for [>2], probe agrees with plural argument. As shown in (91), both the argument undergoes clitic doubling movement but the clitic moved by the latter movement replaces the clitic moved by the former movement.

(91)

$$
\begin{array}{ccccc}
 & & & \text{Agree} & \\
 & & \overbrace{\qquad\qquad\qquad}^{\text{Agree}} & & \\
 & & \text{Probe} & \text{Dual} & \text{Plural} \\
 & & & \text{DO} & \text{IO} \\
\text{Plural} & \text{Dual} & \begin{bmatrix} \# \\ \cancel{>1} \\ \cancel{>2} \end{bmatrix} & \begin{bmatrix} \# \\ > 1 \end{bmatrix} & \begin{bmatrix} \# \\ > 1 \\ > 2 \end{bmatrix} \\
 & & \text{Move} & & \\
 & & \text{Move} & &
\end{array}
$$

Therefore, both these derivations in (90) and (91) correctly accounts for the hierarchy scale between plural and dual argument. Now, let us consider the combination between singular and plural arguments. In this case, as shown in the scale in (87), it is the singular that outranks the plural. 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 probe is simply specified with singular feature as shown in (92).

(92)   Mundari Number Probe (to be revised):
 $\begin{bmatrix} \# \end{bmatrix}$

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 only with singular but not with plural argument.

(93)

$$
\begin{array}{cccc}
 & & \text{Agree} & \\
 & \overbrace{\qquad\qquad}^{} & & \\
 & \text{Probe} & \text{Singular} & \text{Plural} \\
 & & \text{DO} & \text{IO} \\
\text{Singular} & \begin{bmatrix} \# \end{bmatrix} & \begin{bmatrix} \# \end{bmatrix} & \begin{bmatrix} \# \\ > 1 \\ > 2 \end{bmatrix} \\
 & & \text{Move} &
\end{array}
$$

In the same number combination, when plural arugment 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 happen only when features of Goal are subset of features of probe. Since the features of plural are not subset of the features of the probe in (95), Agree cannot happen with 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)
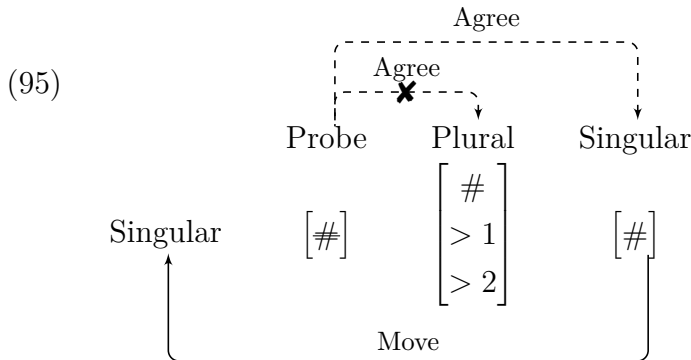
Although the derivations in (93) and (95) accounts for the hierarchy between singular and plural arguments, with probe features altered from what we posited earlier. The change in features of the probe can be summarized as in (96).

(96) $\begin{bmatrix} \# \end{bmatrix}$, 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 to motivate (96) on an independent grounds, which to my knowledge is not possible without an additional stipulation. Therefore, what is needed is just one feature representation of 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 one single feature representation of a probe. Taking this into consideration, I propose a slightly revised feature inventories 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]		

27

I consider that features as represented in (99) are still privative but rather specified in terms of what they are not and unspecified in terms of what they are.[13] 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 number probe in Mundari to be fully specified as in (100).
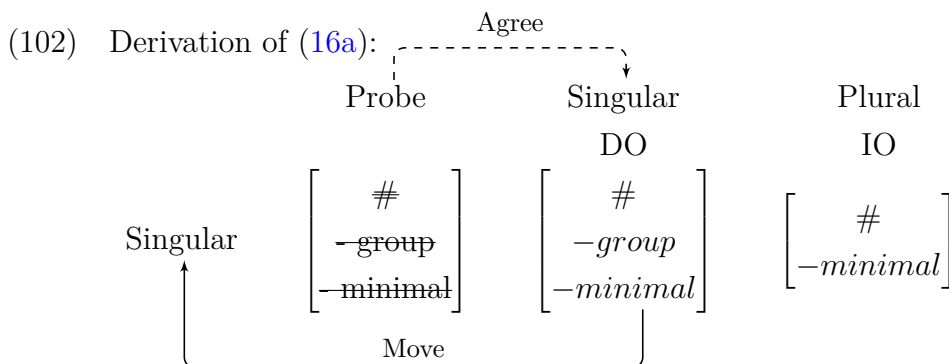
(100) Mundari Number Probe (final version):

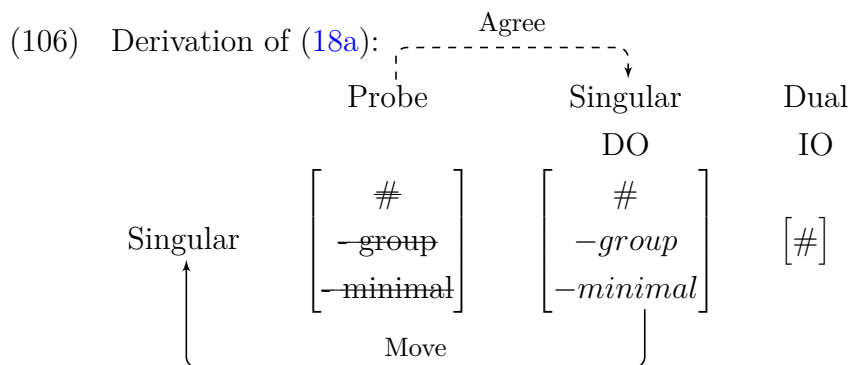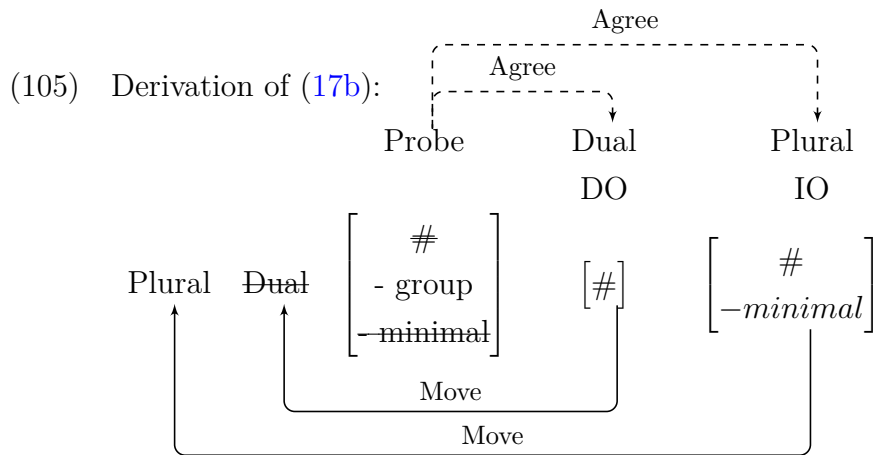$$\begin{bmatrix} \# \\ -group \\ -minimal \end{bmatrix}$$

Having the probe fully specified as in (100), it 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 in a similar way as we have seen for 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):

---

(103) Derivation of (16b):

(104) Derivation of (17a):

(105) Derivation of (17b):

(106) Derivation of (18a):

(107)   Derivation of (18b):
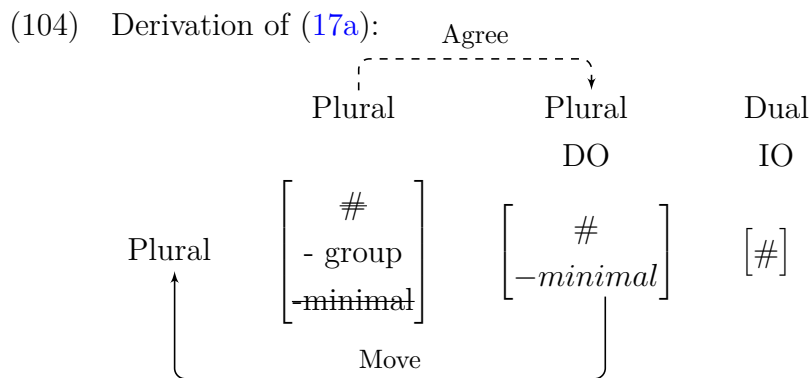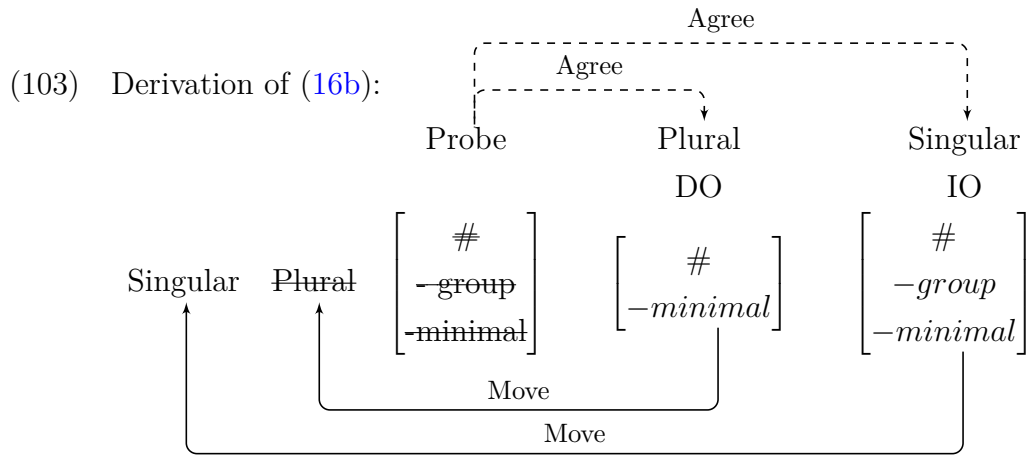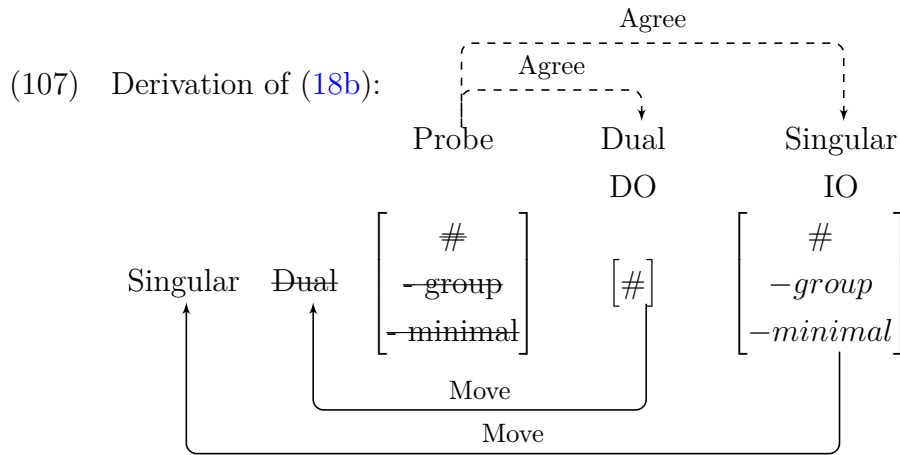
4.5   Deriving Gender restriction

In section 3, we have seen 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-<u>ko</u>-ta-n-a
           1SG cat-PL   EMP house-1SG.SM give-BEN-<u>3PL.OM</u>-PROG-ITR-IND
           'I am giving cats to the house.'

   b. aiɲ oɽak   bilai-ko ke-iɲ   ɛm-a-<u>ko</u>-ta-n-a
           1SG house cat-PL   EMP-1SG.SM give-BEN-<u>3PL.OM</u>-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 be simply explained by accounting for the absence of agreement with 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 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 he 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 [+ human] feature of the object. In

the present of [+ 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 clitic is dependent on 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)

Now to account for clitic distribution in these languages, Preminger conjectures that it is not clitic doubling but it is the movement operation (that feeds clitic doubling) like object shift that is sensitive to animacy, specificity and definiteness. If non-human or non-definite nominals have not underdone phrasal movement to a position from which they are accessible to clitic doubling operation, then clitic doubling obviously cannot talke 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 property related to clitic doubling.

4.5.2 Back to Mundari Gender

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

(112)
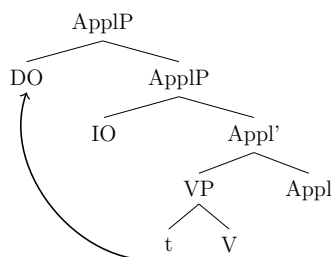
Adopting Preminger's proposal, let us assume that this movement operation is sensitive to the animacy property and thus, only animate DO undergo movement but not the inanimate DO. The inanimate DO from its base position is no longer accessible to an external probe and consequently, there is no clitic doubling operation as well. There are couple of empirical predicitions from this proposal, the first one is that if inanimate DO has not undergone phrasal movment, then it is expected for the inanimate DO to 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-<u>ko</u>-ta-n-a
        1SG cat-PL EMP house-1SG.SM give-BEN-<u>3PL.OM</u>-PROG-ITR-IND
        Intended:'I am giving house to the cats.'

The second prediction from the proposal is that irrespective of the animacy status of IO, it should be accessible to clitic doubling operation since it is merged as specifier of ApplP. It is also clearly not the case because 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 (Gosh 2008: 40).[14] As shown in (115), the subject *puʈkə-ko* 'mushrooms' and *gaɽa* 'river' can be cross-referenced as SM similar to any other animate nominals.

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

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

On the other hand, the nominals that are considered to be inanimate like *tasad* 'grass' or *ulijoo* 'mango' can never be cross-referenced either as SM or OM.

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

        b. uli-joo   jo-jom-aka-n-a
            mango-fruit eat-ITER-CONT-ITR-IND
            'The mango fruit is ready to eat up.'   (Osada 2008: 133 (102-103))

---

[14]Gosh's (2008) observation is for Santali but it holds true for Mundari as well.

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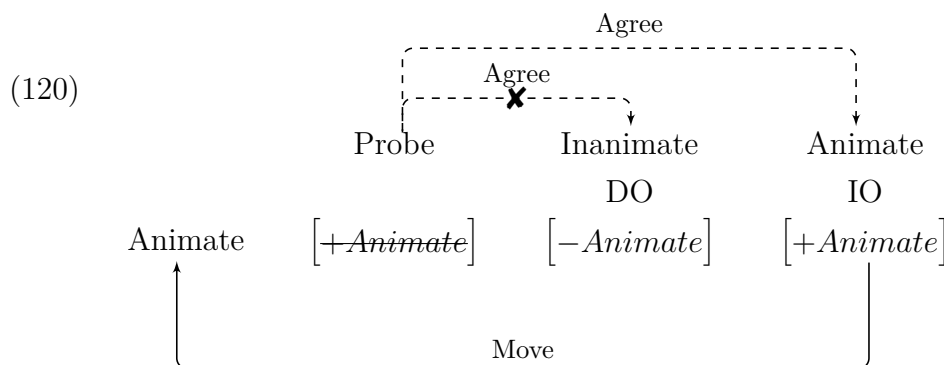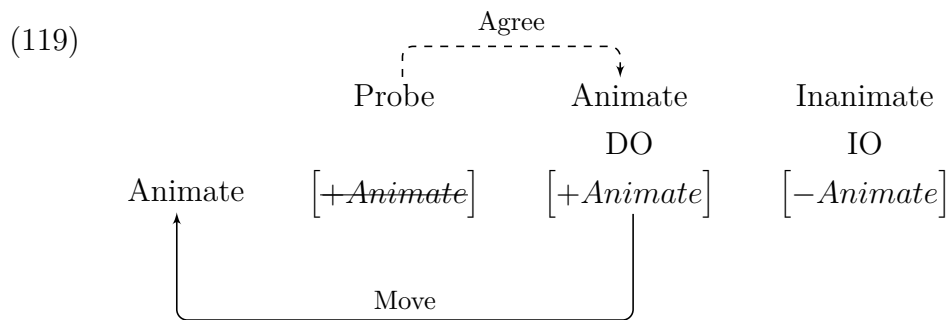
In the derivation in (119), the probing stops with the animate argument and it does not proceed to inanimate argument since there is no features left unchecked in the probe. In the derivation in (120), probing happens with inanimate argument but Agree fails. The feature subset condition that we posited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

4.6   Deriving person, number and gender hierarchy

So far we have seen derivation of person, number and gender at their individual levels in Mundari. When it comes to the combination of all three of them, we need to account for three empirical scenarios. The first one is that if one argument completely outranks the other argument 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-<u>ko</u>-ta-n-a
             1SG cat-PL   EMP house-1SG.SM give-BEN-<u>3PL.OM</u>-PROG-ITR-IND
             'I am giving cats to the house.'

        b.   aiɲ oɽak   bilai-ko ke-iɲ   ɛm-a-<u>ko</u>-ta-n-a
             1SG house cat-PL   EMP-1SG.SM give-BEN-<u>3PL.OM</u>-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

In order to account for all these three scenarios, I propose features of Mundari probe to be fully articulated by combining the features of person, number and gender probes as shown below.

(125)

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

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

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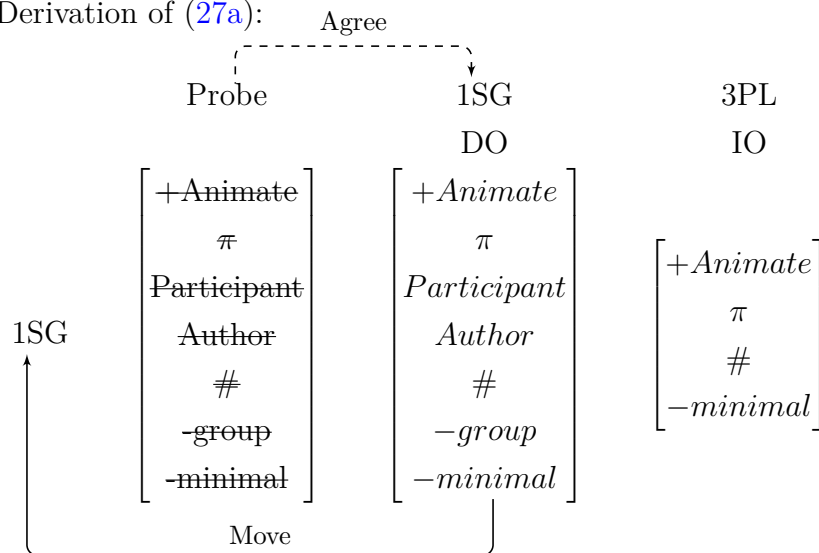
In the case of (27b), the probe initially agrees with 3PL argument but the 3PL argument cannot check all the features of probe. Therefore, the probe agrees further with 1SG argument in order to check rest of its features. Here, both the arguments undergo movement but 1SG clitic that is moved latter replaces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

(127) Derivation of (27b):

$$
\begin{array}{cccc}
 & & \text{Agree} & \\
 & \overset{\text{Agree}}{\longrightarrow} & & \\
\text{Probe} & & \text{3PL} & \text{1SG} \\
 & & \text{DO} & \text{IO}
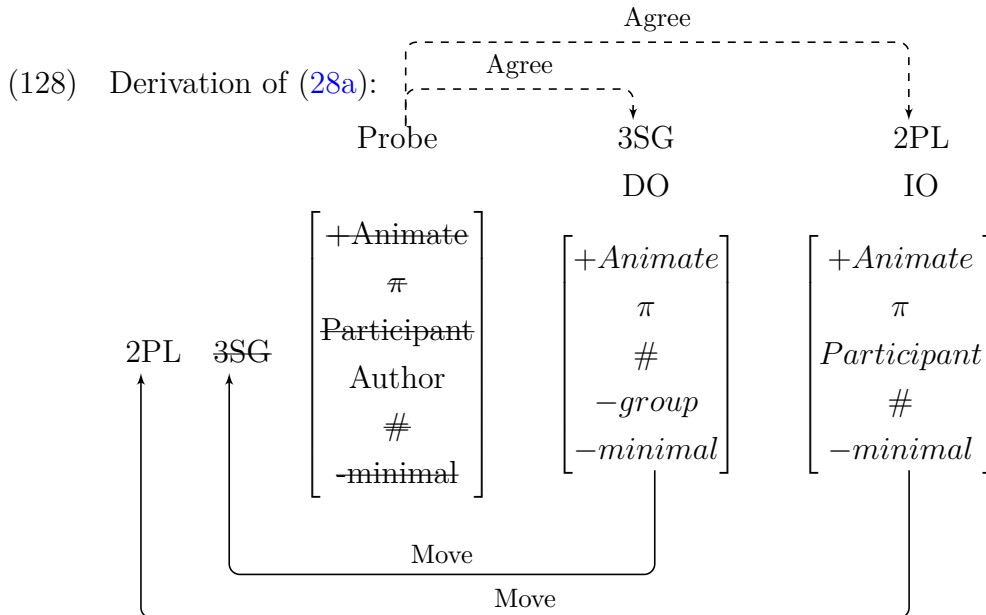\end{array}
$$

$$
\text{1SG} \quad \text{3PL} \quad
\begin{bmatrix}
\text{+Animate} \\
\pi \\
\text{Participant} \\
\text{Author} \\
\# \\
\text{-group} \\
\text{-minimal}
\end{bmatrix}
\quad
\begin{bmatrix}
+Animate \\
\pi \\
\# \\
-minimal
\end{bmatrix}
\quad
\begin{bmatrix}
+Animate \\
\pi \\
Participant \\
Author \\
\# \\
-group \\
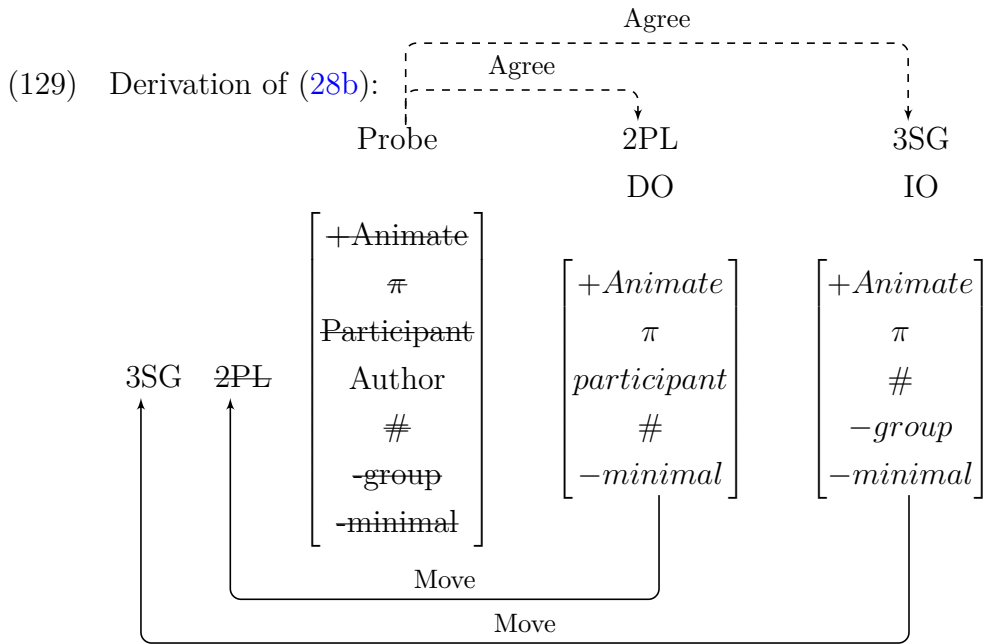-minimal
\end{bmatrix}
$$

Move

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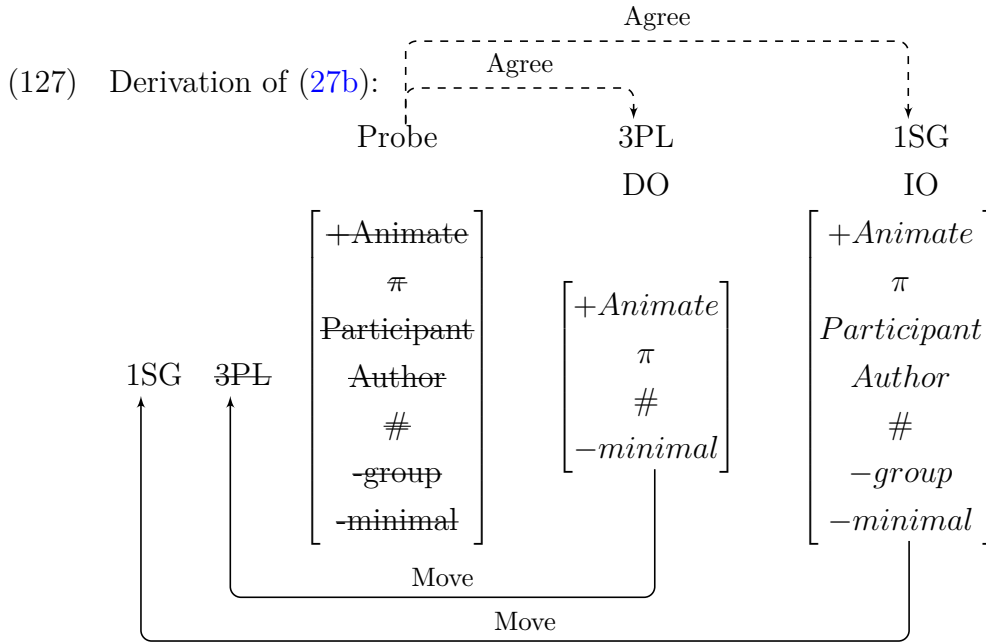
The rest of the examples in scenario 1 also work in the same way as (126) and (127).

Now coming to the scenario 2, where one argument outranks the other argument either in person or in 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 do not have features such as [participant] and therefore, probing does not stop with DO and it proceeds to IO. Since IO can check at least one feature that is not checked by DO, the probe agrees with IO as well. As a result of these Agree relations, IO clitic eventually replaces the DO clitic.

(128) Derivation of (28a):

$$
\begin{array}{cccc}
 & & \text{Agree} & \\
 & \overset{\text{Agree}}{\longrightarrow} & & \\
\text{Probe} & & \text{3SG} & \text{2PL} \\
 & & \text{DO} & \text{IO}
\end{array}
$$

$$
\text{2PL} \quad \text{3SG} \quad
\begin{bmatrix}
\text{+Animate} \\
\pi \\
\text{Participant} \\
\text{Author} \\
\# \\
\text{-minimal}
\end{bmatrix}
\quad
\begin{bmatrix}
+Animate \\
\pi \\
\# \\
-group \\
-minimal
\end{bmatrix}
\quad
\begin{bmatrix}
+Animate \\
\pi \\
Participant \\
\# \\
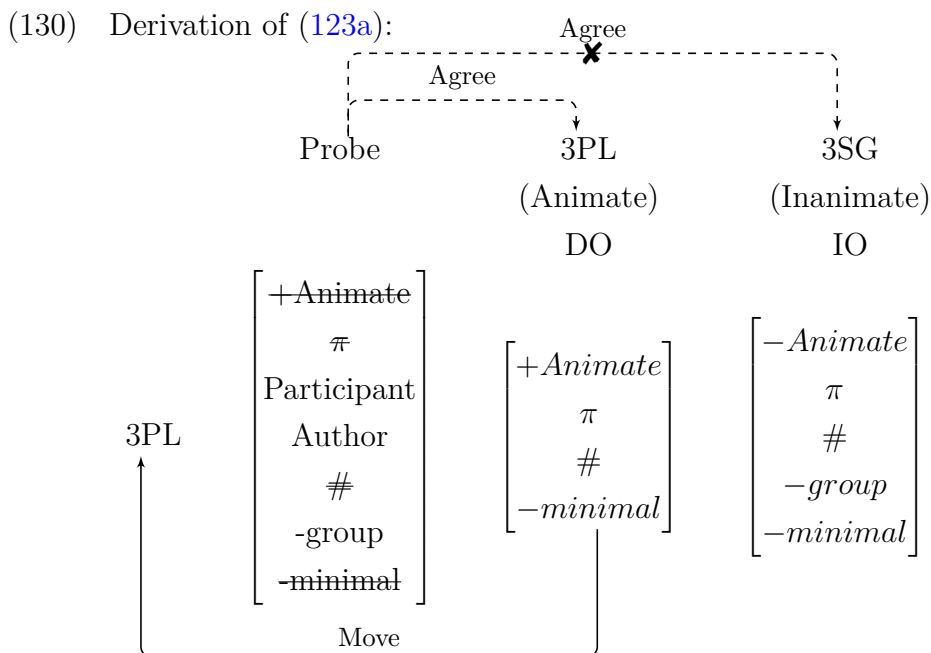-minimal
\end{bmatrix}
$$

Move

Move

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

36

(129) Derivation of (28b):

$$
\begin{array}{ccc}
& \overset{\text{Agree}}{\underset{\text{Agree}}{\dashrightarrow}} & \\
\text{Probe} & \text{2PL} & \text{3SG} \\
& \text{DO} & \text{IO}
\end{array}
$$

3SG   ~~2PL~~

$$
\begin{bmatrix}
\text{+Animate} \\
\pi \\
\text{Participant} \\
\text{Author} \\
\# \\
\text{-group} \\
\text{-minimal}
\end{bmatrix}
\quad
\begin{bmatrix}
+Animate \\
\pi \\
participant \\
\# \\
-minimal
\end{bmatrix}
\quad
\begin{bmatrix}
+Animate \\
\pi \\
\# \\
-group \\
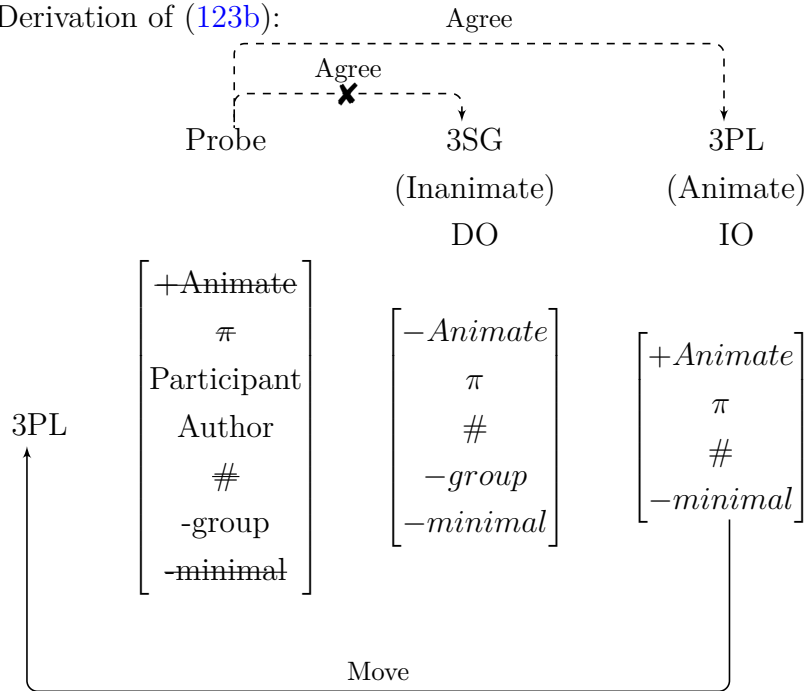-minimal
\end{bmatrix}
$$

Move

Move

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

Finally, coming to the 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 inanimate IO. The subset condition that we posited in (38) allows Agree to happen only when features of goal are subset of features of probe. The [-animate] feature of IO proves that features of IO do not form a subset of features of probe. Therefore, Agree fails with IO despite IO having other features that could have checked probe's features. In the other order of (123b) given in (131), the probe fails to agree with inanimate DO but agrees with animate IO, which then undergoes clitic doubling movement.

(130) Derivation of (123a):

$$
\begin{array}{ccc}
& \overset{\text{Agree}}{\underset{\text{Agree}}{\dashrightarrow}} \; ✗ & \\
\text{Probe} & \text{3PL} & \text{3SG} \\
& \text{(Animate)} & \text{(Inanimate)} \\
& \text{DO} & \text{IO}
\end{array}
$$

3PL

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

Move

(131) Derivation of (123b):

$$
\begin{array}{ccc}
 & \text{Agree} \\
 & \overset{\text{Agree}}{\underset{\textbf{✗}}{\dashrightarrow}} & \\
\text{Probe} & \text{3SG} & \text{3PL} \\
 & \text{(Inanimate)} & \text{(Animate)} \\
 & \text{DO} & \text{IO}
\end{array}
$$

3PL

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

Move

Having accounted for all three types of the 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 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 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 person, number and gender probes as in (132) .

(132) Feature specification of probes:

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

The person and number probes can agree with lower ranked person arguments and lower ranked number arguments as they have the relevant features but 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 person and number hierarchies and 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 either in person or in number, IO occupies the OM slot. In the third scenario, where the lower ranked animate argument outranks the higher ranked inanimate argument, OM is cross-referenced by the lower ranked animate argument. These empirical scenarios are accounted by a simple extension of proposed analysis. The extension involved making the feature specification of the probe rich with all the features of 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.