Closest Conjunct Agreement in Marwari

0. Abstract: In this paper, I will argue that closest conjunct agreement (CCA) in Marwari patterns similar to Hindi-Urdu with respect to subject-object asymmetry, and patterns differently from Hindi-Urdu with respect to exhibiting closest conjunct agreement in unaccusative predicates. The split is seen in animacy restrictions with unaccusatives. Unaccusatives [+human] subjects show resolved plural agreement whereas unaccusative [-human, +animate] subjects show CCA with feminine nouns but CCA is not available with masculine nouns. CCA is available irrespective of the gender to unaccusative [-animate] subjects. I will further show that CCA is sensitive to the nature of the unaccusative predicate. I will evaluate Bhatt and Walkow (2011)'s proposal for CCA in Indo-Aryan, which crucially assumes the absence of person agreement as feeding in the CCA asymmetries and show that the model is inadequate in dealing with the unaccusative paradigm in Marwari.

1. Agreement in Marwari

The first observation regarding agreement patterns in Marwari hinges on the presence versus absence of case marking. Case marking bleeds agreement. Intransitive subjects are never case marked and *always* agree. Transitive subjects can either agree or not agree depending on whether they require case or not in order to be licensed. If they are case marked, they fail to agree and the object then controls the agreement.

Agreement in Marwari is controlled by tense and aspect. Intransitives show subject agreement. In (1), the main verb and the copula change for number (1c) and gender (1a, b). There is an absence of person agreement. This has been noticed for Hindi-Urdu (BW 2011).

(1)   a. kale   me   mʰaɾa ʃaaɭ   me   gə-j**o**   ho-t**o**
             yesterday I   my   school to   go-M.SG.PST COP-M.SG.PST
             'Yesterday, I (masc.) went to the school'

          b. kale   me   mʰaɾa ʃaaɭ   me   gə-j**i**   ho-t**i**
             yesterday I   my   school to   go-F.SG.PST COP-F.SG.PST
             'Yesterday, I (fem.) went to the school'

          c. kale   mʰa   sakaɽa mʰaɾa ʃaaɭ   me   gə-j**a**   ho-t**a**
             yesterday we   all   my   school to   go-3PL.PST   COP-3PL.PST
             'Yesterday, we went to the school'

The first asymmetry is an imperfective-perfective asymmetry. Imperfectives show subject agreement whereas perfectives show object agreement similar to Hindi-Urdu.

(2) a. pɾasad   pustak   bʰa-**sat**   ho-t**o**   *Habitual*
          prasad   book   read.HAB.M.SG   COP-M.SG.PST
               'Prasad used to read a book'

       b. pɾathna pustak   bʰa-**sat**   ho-t**i**   *Habitual*
          prathna book   read-HAB.M.SG   COP-M.SG.PST
               'Prathna used to read a book'

(3) a. pɾasad-ni   pustak bha-**tʃjo**   ho-**to**   *Perfective*
          prasad-NOM   book   read-PFV.M.SG   COP-M.SG.PST
                  'Prasad had read the book'

        b. pɾathna-ni   pustak bha-**tʃjo**   ho-**to**   *Perfective*
            prathna-NOM   book   read-PFV.M.SG   COP-M.SG.PST
                  'Prathna had read the book'

This is reminiscent of the Hindi-Urdu facts where subject receives ergative case marking *only* in the perfective aspect. Potentially, the Marwari facts look similar to the Hindi-Urdu facts of ergative case marking. Note that the main verb in both the imperfective and perfective aspect remains invariant for number and gender (unlike Hindi-Urdu). Only the auxiliary inflects for number and gender in Marwari. Case marking blocks agreement with subject in (2). This receives a principled explanation when we assume a probe-goal system of agreement (Chomsky 2000, 2001). There are two probes: v and T. v is the case assigner and checks the case on the subject. Case checking by the v, renders the subject inaccessible to further probes. When T probes to check agreement features, the subject DP fails to agree and T satisfies its requirements by agreement with the object, which remains unmarked for case.

When both the argument DPs are case marked, the verb shows default masculine singular agreement:

(4)   a. prasad-ni   prathna-ne   dɛkʰ-**jo**   *Past*
              prasad-NOM   prathna-ACC   see-M.SG.PST
                  'Prasad saw Prathna'

        b. prathna-ni   prasad-ne   dɛkʰ-**jo**   *Past*
            Prathna-NOM   Prasad-ACC   see-M.SG.PST
                  'Prathna saw Prasad'

From (4a,b) it is evident that case marking blocks agreement. Simple transitives always require both the arguments to be overtly case marked. Thus, potentially the two arguments fail to agree, and the default agreement (M.SG) shows up[1]. Di-transitives seem to agree with the direct object if it is not case marked, or else it defaults to the masculine singular agreement:

(5) a. pudʒa-ni   prəsad-ne   dʒan-tʃʰi   meɻa-**jo**   ho-**to**
        puja-NOM   Prasad-ACC   john-DAT   introduce-3.M.SG.PSTCOP-3.M.SG.PST
                  'Puja introduced Prasad to John'

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[1] Even when the subject or the object is in the plural, the agreement on the verb is M.SG.
(i) prasad-ni   don tsora-ne   dɛkʰ-**jo**
     prasad-NOM two boy-PL-ACC see-M.SG.PST
     'Prasad saw two boys'

(ii) tiin   tsora-ni   don tsorija-ne dɛkʰ-**jo**
      three boy-PL-NOM two girl-PL-ACC see-M.SG.PST
      'Three boys saw two girls'

b. pudʒa-ni   prəsad-ne   don   amb-**a**   bhata-j**a**   ho-t**a**
   puja-NOM   prasad-ACC   two   mango-PL   show-PL   COP-PL
          'Puja showed two mangoes to Prasad'

The verbal agreement patterns can be diagrammatically represented as:

(6)

S   PP   V_{INTR}   **PAST TENSE**

S   O   V_{TR}   **IMPERFECTIVE**

S-ne   O   V_{TR}   **PERFECTIVE**

S   DO   IO   V_{DITRV}   **PAST TENSE**

S-ne   O-ne   V_{TR}   **DEFAULT M.SG**

2. The Hindi-Urdu facts

Hindi-Urdu is an SOV language belonging to the same language family as Marwari. It is an Ergative-Absolutive language and displays differential object marking (DOM) with *ko*.

(7) a. rahul   kitaab   parh-**taa**   **thaa**   *Imperfective*
       Rahul.M   book.F   read-HAB.M.SG   be.PST.M.SG
       'Rahul used to read (a/the) book'

   b. rahul-ne   kitaab parh-**ii**   **thii**   *Perfective*
      rahul-ERG   book.F read-PFV.F   be.PST.F.SG
      'Rahul had read the book'

   c. rahul-ne   kitaab-ko   parh-**aa**   **thaa**   *Perfective*
      rahul-ERG   book-KO   read-PFV.M.SG   be.PST.M.SG
      'Rahul had read the book'   (Bhatt 2005)

Marwari patterns the same way as Hindi-Urdu with respect to subject case marking. The subject receives case only if it is transitive and in the perfective aspect. Intransitives and subjects in the perfective aspect do not receive case. Thus, from case patterning it looks like Marwari is an ergative-absolutive language[2] (Andrew Simpson, p.c). One point of

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[2] However, the literature claims Marwari is a Nominative-Accusative language (Pritty Patel-Grosz, p.c).

difference with Hindi-Urdu is that Marwari does not have differential object marking. In Table 1, I summarize the properties of Hindi-Urdu and Marwari.

	Erg-Abs	Subject agreement-PNG	Imperfective-perfective asymmetry	Object agreement-NG; *P	Agreement is Case dependent	Differential object marking
Marwari	?	√	√	√	√	*
Hindi-Urdu	√	√	√	N.A (due to DOM)	√	√

Table 1

3. Closest Conjunct Agreement

Similar to the asymmetry in agreement in intransitives and transitives, there is an apparent asymmetry between subjects and objects in closest conjunct agreement (CCA). Subject agreement is always resolved agreement whereas objects show closest conjunct agreement (CCA).

(8) a. M.SG + M.SG: agreement= PL

　　[prasad　　　aɲi　　prathameʃ]　　gaano　　gav-**e**　　　**hɛ**
　　prasad　　　and　prathamesh　　song　　sing-M.PL　　COP.PL
　　'Prasad and Prathamesh are singing a song'

　b. M.SG + F.SG: agreement = PL

　　[prasad　　　aɲi　　pratna]　　gaano　gav-**e**　　　　**hɛ**
　　prasad　　　and　prathna　　song　sing-M.PL　　COP.PL
　　'Prasad and Prathna are singing a song'

　c. F.SG + M.SG: agreement= PL

　　[prathna　　　aɲi　　prasad]　　gaano　gav-**e**　　　　**hɛ**
　　prathna　　　and　prasad　　song　sing-M.PL　　COP.PL
　　'Prathna and Prasad are singing a song'

　d. F.SG + F.SG: agreement= PL

　　[prathna　　　ani　　puja]　　gaano　gav-**e**　　　　**hɛ**
　　prathna　　　and　puja　　song　sing-M.PL　　COP.PL
　　Prathna and Puja are singing a song'

The subjects only show number agreement (plural). There is no person agreement. A point of difference between Hindi-Urdu and Marwari is in the agreement pattern of (8d). In Hindi-Urdu, the agreement on the main verb and the copula can be feminine plural agreement, though resolved plural agreement is also admissible[3]. Note that the main verb (*gaa*) and the copula remain invariant across the paradigm.

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[3]　　[puja aur prathna] gaana gaa rah**ii**/rah**e**　　hai　　　　　　　　*Hindi-Urdu*
　　puja and prathna　song sing is-F.SG/PL　　COP
　　'Puja and Prathna are singing a song'

In objects, agreement is always with the closest conjunct. There is a failure to show resolved plural agreement with objects. In the examples below, the agreement is with the rightmost conjunct so it is rightmost conjunct agreement (RCA).

(9) a. …M.SG + MSG: agreement= M.SG
        prasad-ni   [pustak   aṇi   varthamanpatrak]   la-**jo**
        Prasad-NOM   book   and   newspaper   buy-M.SG.PST
        'Prasad bought a book and a newspaper'

   b. ….M.SG + F.SG: agreement= F.SG
        prasad-ni   [ek bakso   aṇi   ek chothi   bag]   usl-**i**
        Prasad-NOM   a box   and   a   small   bag   lift-F.SG.PST
        'Prasad lifted a box and a small bag'

   c.....F.SG+ M.SG: agreement= M.SG
        prathna-ni   [ek ghazal   aṇi   ek slok]   gaa-**jo**
        prathna-NOM   a ghazal   and   a   sloka   sing-M.SG.PST
        'Prathna sang a ghazal and a sloka'

   d….F.SG+ F.SG: agreement= F.SG
        prathna-ni   [ek purse   aṇi   ek saaɖi]   laa-**ji**
        prathna-NOM   a purse   and   a   sari   buy-F.SG.PST
        'Prathna bought a purse and a sari'

  e….M.PL + F.SG: agreement= F.SG
        prathna-ni   [don gaana   aṇi   ek kavitha]   ga-**ji**
        prathna-NOM   two songs   and   a   poem   sing-F.SG.PST
        'Prathna sang two songs and a poem'

  f….F.PL + M.SG: agreement = M.SG
        prasad-ni   [ghana sara   chot-ija   bagja aṇi   bakso] usli-**jo**
        Prasad-NOM   a lot   many small-PL   bag-PL and   box   lift-M.SG
        'Prasad lifted many bags and a box'

g….M.SG + M/F.PL: agreement= PL
        prasad-ni   [ek table   aṇi   tiin pustak]   la-**ja**
        Prasad-NOM   a table   and   three book   buy-PL
        'Prasad bought a table and three books'

When the object is extraposed to the right, the conjunct that agrees is the leftmost conjunct and thus it is leftmost conjunct agreement (LCA).

(10) a. …M.SG + MSG: agreement= M.SG
        prasad-ni   la-**jo**   [pustak   aṇi   varthamanpatrak]
        Prasad-NOM   buy-M.SG.PST book   and   newspaper
        'Prasad bought a book and a newspaper'

A point to be noted here is that in Hindi-Urdu, the main verb is sensitive to number and gender features. On the contrary, in Marwari when there is plural agreement on the verb, there is only one form –*e*.

    b. .....F.SG+ M.SG: agreement= F.SG
      prathna-ni   gaa-**ji**   [ek ghazal   aṇi   ek slok]
      prathna-NOM sing-F.SG.PST a ghazal   and   a sloka
      'Prathna sang a ghazal and a sloka'

This asymmetry in Marwari between subjects and objects is similar to that in Hindi-Urdu and Marathi but not in Gujarathi. Gujarathi case marked objects still trigger agreement. Moreover, this patterning is similar to the pattern observed with normal agreement patterns in Marwari. When both the subject and the object are case marked, or when the object alone is marked for case, then the agreement on the verb is default.

(11) a. me   [prasad   aṇi   prathamesh]-ne   dekh-**jo**
      I   Prasad   and   prathamesh-ACC   see-M.SG.PST
      'I saw Prasad and Prathamesh'

    b. prasad-ni   [prathna   aṇi   prathamesh]-ne   dekh-**jo**
      Prasad-NOM   prathna   and   prathamesh-ACC   see-M.SG.PST
      'Prasad saw Prathna and Prathamesh'

To summarize so far, Marwari shows an asymmetry in subject-object agreement. Conjoined subjects show resolved plural agreement, whereas conjoined objects only show CCA. In the SOV order, they exhibit RCA and in the SVO order, they exhibit LCA. Case marking blocks agreement. When both the arguments are case marked, the agreement defaults to masculine singular. Some questions that need to be answered:
(i) Why can't conjoined objects show resolved plural agreement?
(ii) What determines the agreement between RCA and LCA?
(iii) Why does case marking block agreement?

In the next section, I will look at some interesting data from the interaction of unaccusative verbs and CCA.

4. The Unaccusative Paradigm

Unaccusative verbs are sensitive to animacy. This patterning is not seen in Hindi-Urdu[4]. Marathi is to an extent similar to the Marwari pattern sketched below.
Unaccusative verbs show CCA with respect to animacy. Unaccusative [+human] subjects show *resolved* plural agreement:

(11) a.....M.SG. + M.SG= PL
      [Prasad   aṇi   shubham]   aa-**ja**
      Prasad   and   shubham   came-PL.PST
      'Prasad and Shubham came'

    b.....M.SG + F.SG = PL
      [Prasad   aṇi   prathna]   aa-**ja**
      Prasad   and   prathna   came-PL.PST

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[4] In BW (2011), they mention this fact only in the conclusion leaving it for future research. In BW's GLOW presentation, they discuss widely the data from the unaccusative paradigm. However, animacy patterns are highly restricted in Hindi-Urdu, unlike in Marwari. In Marwari, there seems to be no optionality in these cases.

'Prasad and Prathna came'

Unaccusative [-human, +animate] subjects show CCA with feminine nouns, but CCA is *not* available when the closest conjunct is masculine[5] (However, see 5.2).

(12) a. [kutto aɲi minki] aa-**ji**   **CCA**
       dog   and   cat   came-F.SG.PST
       'A dog and a cat came'

      b. [minki aɲi kutto] aa-**ja**/ *****aa-jo**   *****CCA**
        cat   and   dog   came-PL.PST
        'A cat and a dog came'

      c. [ek tsoro   ek babo aɲi   ek baji]   aa-**ji**   **CCA**
       a   boy   a man and   a woman   came-F.SG.PST
       'A boy, a man, and a woman came'

      d. [ek baji   ek tsoro   aɲi ek babo] aa-**ja**/*****aa-jo**   *****CCA**
       a woman   a boy   and a man came-PL.PST
       'A woman, a boy and a man came'

Unaccusative [-animate] subjects show CCA[6]:

(13) a. [plane aɲi   gaadi] aa-**ji**   **CCA**
       Plane and   car   came-F.SG.PST
       'A plane and a car came'

      b. [gaadi aɲi   plane] aa-**jo**   **CCA**
        car   and   plane came-M.SG.PST
        'A car and a plane came'

In locatives, overt marking of the numeral ek 'one' results in CCA

(14) a. [kutto aɲi minki] tsokha me ho-**ti**   **CCA**
        Dog   and cat   kitchen in COP-PL.PST
        'The dog and the cat are in the kitchen'

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[5] I rechecked the data with Prathamesh three times.

[6] In trying to ascertain whether Marwari has dual agreement (Rajesh Bhatt, p.c), I elicted this paradigm.
(i) [hath aɲi pəg] niɻa hɛ
   hand and leg blue COP
   'The hand and the leg are blue'

(ii) [hath, pəg aɲi matho] niɻo hɛ
    hand leg and head   blue COP
    'The hand, the leg and the head are blue'
(i) shows resolved plural agreement, in a DP1 & DP2 configuration. (ii) however shows CCA, and is a DP1, DP2 & DP3 configuration. This is puzzling.

    b. [minki aɳi kutto] tsokha me ho-**ta**   ***CCA**
       cat   and dog kitchen in COP-PL.PST
       'The dog and the cat are in the kitchen'

    c. [ek kutto aɳi ek minki] tsokha me ho-**ti**   **CCA**
       a dog   and a cat   kitchen in COP-F.SG.PST
       'A dog and a cat were in the kitchen'

    d. [ek minki ani ek kutto] tsokha me ho-**to**   **CCA**
       a cat   and a dog   kitchen in COP-M.SG.PST
       'A cat and a dog were in the kitchen'

This suggests that overtly marking the D in (14) results in CCA, which is otherwise unavailable. Since Marwari does not have a definite article, it would be useful to check this paradigm further with numerals and other quantifiers that mark definite versus indefinite distinctions. However, I leave this for future research.

5. The Analysis

Similar to Bhatt and Wilkow (2011), I will assume the AGREE model of Chomsky (2000, 2001) where T assigns case to subjects and v assigns case to objects. The locus of agreement resides in various heads inside the functional projection of DP. Following Ritter (1995), DP (the highest node) is the origin of definiteness marking and person features. NumP hosts agreement and NP (the lowest node) is the locus of gender features. This is shown in the tree below:

```
            DP
           /  \
         D°    NumP
              /   \
           Num     NP
                    |
                    N
                   /\
               Gender
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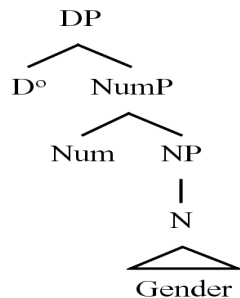
The basic idea would be to assume that the DP remains invisible to further probes once the v head has checked the case feature. Evidence for this comes from the fact that agreement always lacks person. So, T can only look inside the DP, into the Num P or the NP. A similar logic applied to &Ps will entail that the highest &P cannot agree with the probe, since v has already checked the case features thus making it opaque to agreement. T can however look inside the &P and agree with DP1 or DP2. The difference between agreement with DP1 and DP2 is seen in LCA versus RCA, which is in turn determined by the word order.

5.1. Bhatt and Walkow (2011)

The primary assumption of Bhatt and Walkow's (BW) analysis rests on the fact that T cannot value person features in conjoined objects. This should cause the derivation to crash, however, the derivation does not crash. They thus use this intuition to argue that CCA is a PF operation that supplies heads, which failed to value their features in syntax. They assume the Late Insertion Model (Embick and Noyer 2006) where phonological material is inserted post syntactically and LCA (Kayne 1994). Only a lower head can value features on T, the highest head remains unaccessible. Thus, crucially, object case assignment bleeds person agreement on T.

The BW system introduces three elements into the computation, C, A and T. C is the Agreement controller, A is the Anchor, and T is the Target. Syntax determines the connection between C and A. PF determines the link between A and T. Thus, subject agreement is always syntactic whereas object agreement is located in the PF.

The conjoined subjects have a set of resolved features on the root node. The probe on T agrees with the entire conjoined phrase and only resolved agreement is possible. Conjoined object agreement occurs when the subject is case marked. The probe on v, renders the &P inaccessible to further probes. When T probes, it fails to check the features of the &P, as the DP is rendered unavailable for checking by the earlier probe. The secondary agree mechanism can only look inside the &P and agree with one of the DPs. Here there are two options available, either the secondary agree can agree with DP1 or it can agree with DP2. Indeed we find that depending on the word order, it's always the closest conjunct that triggers agreement. When the order is the canonical SOV order, the closest conjunct is the second conjunct or the rightmost conjunct and thus RCA obtains. When the order is SVO, the first conjunct is closest to the secondary agree operation and thus LCA obtains. This is taken as indicating that the resolution is a PF phenomena, done post-syntactically as a means of obtaining the right agreement patterns given linear considerations.
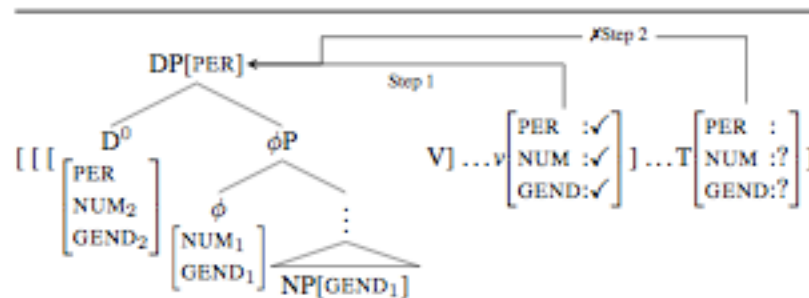

Table 1: Object agreement: v deactivates D layer (Step 1), blocking T-agreement with object DP (✗Step 2), and forcing agreement with NP.

Table 1, taken from BW (2011) shows the mechanism for object agreement. The DP layer is rendered inactive by the first probe. T agreement with the DP is blocked.
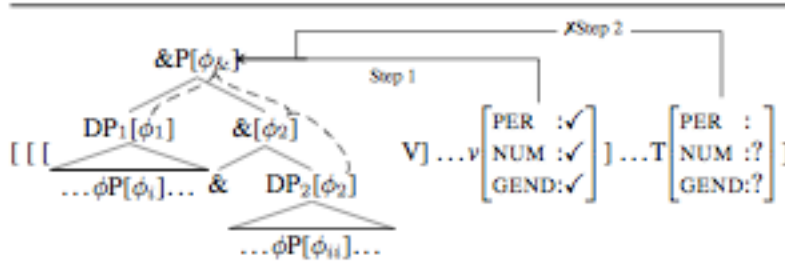
Table 2: Case assignment by ν blocks T-agreement with &P.

In Table 2, again from BW (2011), it is shown how case assignment blocks T agreement with &P.

5.2. Potential Problems

It is unclear how BW's system will capture the Marwari unaccusative paradigm. The CCA seems to be conditioned by the class of unaccusative verb it appears with. In (12) above, I noted that feminine nouns allow CCA whereas masculine nouns don't. This was the paradigm with the verb 'to come'. However, when the verb is changed the CCA patterns differently.

(15) a. [kutto aɲi minki] mari-**ja**   **Resolved plural agreement**
        dog and cat   die-PL.PAST
        'The dog and the cat died'

   b. [minki aɲi kutto] mari-**jo**   CCA
        cat   and dog   die-M.SG.PST
        'The cat and the dog died'

   c. [minki, kutto, aɲi hatti]   mari-**jo**   CCA
        cat   dog   and elephant   die-M.SG.PST
        'The cat, dog and the elephant died'

In the paradigm in (15), the feminine noun blocks CCA (15a), this is exactly the opposite pattern given (12). Furthermore, the patterns with this verb also extend to [+human] subjects which is totally unexpected since human subjects have always shown resolved plural agreement till now:

(16) a. tiin tsora mari-**ja**
         three boy-PL DIE-PL.PST
         'Three boys died'

   b. tiin tsori mari-**ja**
        three girls die-PL.PST
        'Three girls died'

   c. [tiin tsorija aɲi ek babo] mari-**jo**
        three girl-PL and a man   die-M.SG.PST
        'Three girls and a man died'

Thus, we have seen that unaccusative verbs differ in whether they allow CCA or not. Even within unaccusative predicates, distinctions need to be made regarding which classes of verbs allow CCA and which ones don't. The pattern in (16c) is intriguing since we normally would not expect to see CCA here, since subjects show resolved plural agreement (11). This would be a potential problem for BW.

It could be the case that for unaccusative predicates there is no v probe, and thus DP/&P still remains visible to the T probe. What remains to be explained is the seemingly different behavior of CCA with respect to animacy and the nature of the predicates. Something more needs to be said about BW's model in order to explain the unaccusative facts in Marwari.

6.0. Conclusion

In this paper, I have looked at closest conjunct agreement in Marwari, a phenomena that has recently interested a lot of research in Indo-Aryan and has proven to be crucial to resolving theories of agreement, namely whether agreement is syntactic or post-syntactic. The new Marwari data I have looked at in this paper adds to this debate by showing that agreement with objects necessarily needs to happen at PF, since it exhibits patterns similar to Hindi-Urdu. Thus, in addition to the asymmetries described in the paper, we find an additional asymmetry in the nature of agreement. Subject agreement is always syntactic whereas object agreement must happen at the PF. We need a mixed model, which will be able to capture these facts adequately.

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