LOCATING AGREEMENT IN GRAMMAR

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- Where is agreement?
  - Bobaljik (2008): Agreement is a post-syntactic process. Syntax has only marginal influence on it.
  - Chomsky (1999) or Bošković (2009): Agreement is located entirely within the syntactic system.
- Agreement with conjunctions. In different ways van Koppen (2005, 2007), Marušič et al. (2007) and Benmamoun et al. (2009) argue that there is a post-syntactic component to agreement.

  In particular van Koppen (2005, 2007) and Benmamoun et al. (2009) argue that syntax identifies possible agreement targets, but PF choses between multiple options of valuing agreement form these targets.
- Based on subject-object agreement asymmetries in Hindi-Urdu we will argue that:
  - Agreement with subjects in Hindi-Urdu can be accounted for in purely syntactic terms.
  - Agreement with objects has a post-syntactic component, but the core differences between agreement with subjects and objects arise in the syntax.

1 Three Asymmetries between Agreement with Subjects and Objects

- Three asymmetries between agreement with subjects and objects:
  - Agreement with subjects involves person, agreement with objects doesn't (§1.2).
  - Agreement with subjects marks the properties the whole conjunction, agreement with objects is with the closest conjunct (§1.3).
  - Agreement with subjects shows matching effects in Right Node Raising, agreement with objects doesn't (§1.4).

1.1 The Basic Agreement Paradigm

- Basic Paradigm of Hindi-Urdu Agreement:
  - Hindi-Urdu has one agreement trigger, T, that expresses person, number and gender features.
  - Agreement on T is controlled by the most prominent non-overtly case-marked argument.

(1) a. **Rahul** kitaab **paṛh-taa thaa**
Rahul.M book.F read-HAB.M.SG be.PST.M.SG
'Rahul used to read (a/the) book.'

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

c. Rahul-ne kitaab-ko paṛh-aa thaa
Rahul-ERG book-KO read-PFV.M.SG be.PST.M.SG
'Rahul had read the book.'

- Besides auxiliaries in T, elements like aspectual markers and participles express ϕ-agreement with the same goal as T. All the verbs/auxiliaries agree (or not) with the same DP. No splits.
- Agreement with subjects and objects is controlled by the same head, is sensitive to the same morphological properties of the agreement target and is expressed by the same affixes.

1.2 The Person Asymmetry

- Person asymmetry:
  - Subject agreement involves person, number and gender.
  - Object agreement involves only number and gender, but not person.

(see Bhatt 2005 and Boeckx 2008)

- Not visible in Hindi-Urdu: First and second person objects obligatorily receive *-ko* marking (Differential Object Marking 'DOM') and overt case marking blocks agreement in Hindi-Urdu.
- Gujarati DOM objects still trigger agreement, (2).

(2) Gujarati:

a. mEN **tehmahri behEn-one bolawi**
I-ERG your sisters.F-DOM invited.F
'I invited your sisters.'

b. *pustek* 'book' is neuter:
mEN **a pustek-ne waNcyuN**
I-ERG this book.N-DOM read.N
'I read this book.' (Cardona 1965:75)

DOM objects are still visible to the agreement system in this language. However, the present tense auxiliary, which can show person agreement with subjects, does not show person agreement with objects.

(3) a. Present tense auxiliary agrees with second person subject:
tEhme aw-yā cho
you.PL come-PFV.MPL be.PRS2.PL
'You have come.'

b. Present tense auxiliary does not agree with second person object:
mãĩ **tam-ne mār-yā che**
I you.PL-ACC strike-PFV.MPL be.PRS.3
'I have struck you.' (Magier 1983:324)

1.3 The Coordination Asymmetry

Hindi-Urdu.

- Conjoined transitive and unergative subjects always show *resolved agreement*, (4), meaning that number agreement is always plural, same-gender conjunctions trigger the expected gender agreement.

(4) a. MSG + MSG: agreement = MPL (also F.SG+F.SG=F.PL or M.PL)
Ram aur Ramesh gaa {rahe hẼ / *rahaa
Ram.M and Ramesh.M sing {PROG.MPL be.PRS.PL / *PROG.MSG
hai}
be.PRS.SG}
'Ram and Ramesh are singing.'

b. FSG + MSG: agreement = MPL
Sita aur Ramesh gaa {rahe hẼ / *rahaa
Sita.F and Ramesh.M sing {PROG.MPL be.PRS.PL / *PROG.MSG
hai}
be.PRS.SG}
'Sita and Ramesh are singing.'

c. M.SG + F.SG: agreement = MPL (also F.SG+M.SG=M.PL)
Ram aur Sita gaa {rahe hẼ / *rahii
Ram.M and Sita.F sing {PROG.M.PL be.PRS.PL / *PROG.F
hai}
be.PRS.SG}
'Ram and Sita are singing.'

d. F.SG + F.SG: agreement = F.PL/M.PL
Mona aur Sita gaa {rahii / rahe hẼ / *rahaa
Mona.F and Sita.F sing {prog.F / prog.M.PL be.PRS.PL / *PROG.MSG
hai}
be.PRS.SG}
'Ram and Sita are singing.'

- With objects on the other hand Closest Conjunct Agreement (CCA) is strongly preferred.
  - Last Conjunct Agreement (LCA): When the conjoined object precedes the verbal complex, agreement is with the last conjunct (5)/(6).

(5) Last Conjunct Agreement 1: DP[X] & DP[M.SG]...VPart[M.SG]

a. ...[F.SG + M.SG]...VPart.M.SG
Ram-ne ek thailii aur ek baksaa (aaj) uṭhaa{-yaa/ *-yii/
Ram-ERG a bag.F and a box.M (today) {lift-PFV.M.SG/ *-PFV.F/
???-ye}
???-PFV.M.PL}

'Ram lifted a small bag and a box.'

b. . . . [F.PL + M.SG]. . . VPart.M.SG

Ram-ne kai thailiyã: aur ek baksaa (aaj) uṭhaa{-yaa /
Ram-ERG many bags.F and a box.M (today) {lift-PFV.M.SG /
*-yii / ???-ye}
*-PFV.F / ???-PFV.M.PL}

'Ram lifted many small bags and a box.'

c. . . . [M.SG + M.SG]. . . VPart.M.SG

Ram-ne ek thailaa aur ek baksaa (aaj) uṭhaa{-yaa /
Ram-ERG a bag.M and a box.M (today) lift{-PFV.M.SG /
??-ye}
??-PFV.M.PL}

'Ram lifted a bag and a box.'

d. . . . [M.PL + M.SG]. . . VPart.M.SG

Ram-ne kai thaile aur ek baksaa (aaj) uṭhaa{-yaa /
Ram-ERG many bags.M and a box.M (today) {lift-PFV.M.SG /
??-ye}
??-PFV.M.PL}

'Ram lifted many bags and a box.'

(6) Last Conjunct Agreement 2: DP[X] & DP[F.SG] ....V[F]

a. . . . [F.SG + F.SG]. . . VPart.F

Ram-ne ek thailii aur ek peṭii (aaj) uṭhaa{-yii / ???-ye}
Ram-ERG a bag.F and a box.M (today) lift{-PFV.F / ???-PFV.M.PL}

'Ram lifted a small bag and a box.'

b. . . . [F.PL + F.SG]. . . VPart.F

Ram-ne kai thailiyã: aur ek peṭii (aaj) uṭhaa{-yii /
Ram-ERG many bags.F and a box.F (today) lift{-PFV.F /
???-ye}
???-PFV.M.PL}

'Ram lifted many bags and a box.'

c. . . . [M.SG + F.SG]. . . VPart.F

Ram-ne ek thailaa aur ek peṭii (aaj) uṭhaa{-yii /
Ram-ERG a bag.M and a box.F (today) lift{-PFV.F.SG /
*-yaa / ??-ye}
*-PFV.M.SG / ??-PFV.M.PL}

'Ram lifted a bag and a box.'

d. . . . [M.PL + F.SG]. . . VPart.F

Ram-ne kai thaile aur ek peṭii (aaj) uṭhaa{-yii /
Ram-ERG many bags.M and a box.F (today) lift{-PFV.F.SG /
*-yaa / ??-ye}
-PFV.M.SG / ??-PFV.M.PL}

'Ram lifted many bags and a box.'

– First Conjunct Agreement (FCA). When the object follows the verbal complex, agreement is with the first/leftmost conjunct (7).

(7) Raam-ne khariid-ii ek kitaab aur ek akhbaar
Ram-ERG buy-PFV.F a book.F and a newspaper.M
'Ram bought a book and a newspaper.'
(modeled on Benmamoun et al. 2009:77)

- CCA is insensitive to the features of the conjuncts. It happens with singular and plural, masculine and feminine, and animate and inanimate objects, (8).

(8) a. Ram-ne duurbiin-se ek sharaṇaarthii aur ek navjaat shishu
Ram-ERG telescope-with a refugee.M and a newborn child.M
dekh-aa
see-PFV.MSG
'Ram saw a refugee and a newborn child with a telescope.'

b. yeh ardha satya aur vo jhuuṭh Ram-kaa dil dukhaa
this half truth.M and that falsehood.M Ram-Gen heart sadden
{rahe hẼ / *rahaa hai}
{PROG.MPL be.PRS.PL / *PROG.MSG be.PRS.SG}
'This half truth and that falsehood are making Ram sad.'

Animacy affects CCA only to the extent that many speakers prefer differential object marking with animate objects which blocks agreement.

(Appendix A discusses data from number sensitive items similar to those discussed in Aoun et al. (1994, 1999) and shows that these are uninformative as to the right analysis of CCA in Hindi-Urdu.)

- CCA in Hindi-Urdu is different in these respects from Slovenian (e.g. Marušič et al. 2007) and Serbo-Croatian (e.g. Bošković 2009)
  – It involves both number and gender.
  – It is not affected by features (M/F, SG/PL) of the conjuncts.

Gujarati.

- Unlike Hindi-Urdu, Gujarati does not allow CCA. Conjoined objects control resolved agreement like subjects (Suthar 2006), (9).

(9) Ram-e Mahesh ne Sita-ne joyaa ch-e
Ram-ERG Mahesh and Sita-DOM see.PFV.M.PL be.PRES-3
'Ram saw Mahesh and Sita'

1.4 Matching Effects in Right Node Raising

- Agreement with subjects in RNR shows *matching effects*, (13b).
  - When the subjects in both conjuncts have the same features, these are the features spelled out on the verb, (13a).
  - When the subjects have different features, neither CCA (M.SG) nor resolved agreement (M.PL) are possible, (13b).
  - When the agreeing verb has syncretic forms that obscure feature mismatches on the subjects, the structures are good, (13c). The present tense copula *hai* does not show gender distinctions and can agree with subjects with different genders.

(10) a. [Ramesh ek baksaa] aur [Ram ek thailaa] uthaa
Ramesh.M a box.M.SG and Ram.M a small.bag.F.SG lift
raha tha
PROG.M.S be.PST.M.S
'Ramesh was lifting a box and Ram a small bag.'

b. Subjects with mismatching features:
[Ramesh ek baksaa] aur [Sita ek thailaa] uthaa {???rahii
Ramesh.M a box.M.SG and Sita.F a small.bag.F.SG lift {PROG.F
thii/ *rahe the}
be.PST.F/ PROG.M.PL be.PST.F.PL}
'Ramesh was lifting a box and Sita a small bag.'

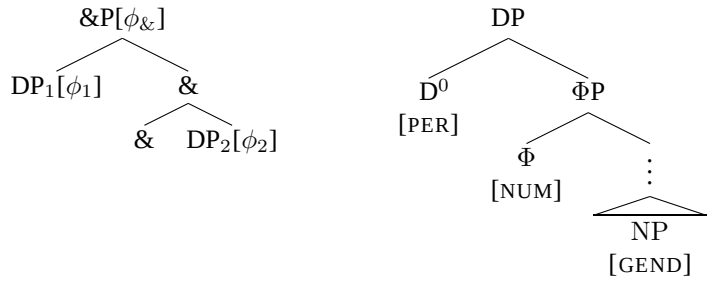
c. Present tense copular construction with mismatching features saved by syncretism:
[Ram aalsii] aur [Sitaa karmaṭh] hai
Ram.M lazy and Sita.F hardworking be-PRS.SG
'Ram is lazy and Sita is hardworking.'

d. Objects with mismatching features:
[Ramesh-ne ek baksaa] aur [Sitaa-ne ek thailii] uThaa{-ii
Ramesh-ERG a box.M.SG and Sita-ERG a small.bag.F.SG lift{-F.SG
/ *-ye}
/ -M.PL}
'Ramesh lifted a box and Sita a bag.'

- Agreement with objects in RNR: feature mismatches between the objects in the two remnants are tolerated. The verb shows the agreement features of the linearly closest object, (13d).
- RNR is another contexts where agreement with objects is sensitive to linear proximity, but agreement with subjects isn't.

1.5 Questions

- Two kinds of phenomena indicate that agreement with subject and agreement with objects access different features:
  - Person: Agreement with objects cannot access the object's person features.
  - Agreement with conjunctions: Agreement with conjoined objects cannot access the resolved features of the object.
- Linear proximity:
  - Agreement with objects is sensitive to linear proximity (CCA and agreement with closest object in RNR).
  - How does the grammar access the features of the closest conjunct?
- Matching Effects in RNR:
  - Why is agreement with subjects but not agreement with objects sensitive to morphological mismatches?
  - How is agreement with the closest object resolved when the conjuncts are larger than DPs?



a. Distribution of ϕ-features in conjunctions.

b. Origin of ϕ-features inside DP (Ritter 1995).

Table 1: ϕ-Features in conjunctions and DPs.

2 Absence of Person and Resolved Agreement

- Observation 1: The features that are absent from agreement with objects are the ones that originate in the highest projection.
  - Conjunctions: Features in &P, Table 1a.
  - DPs: Person features in the DP layer, Table 1b.

  These are the features that, under normal assumptions about locality, should be accessed by agreement.
- Observation 2: Agreement with objects is agreement with an argument that has already been assigned case (Bhatt 2005).
- Proposal: Absence of Person and Accessibility are reflexes of the same process. The features in the highest layer of the object have checked by licensing object case, and are inaccessible to T-agreement because of that.

2.1 Syntactic Assumptions

- The mechanics of agreement and case assignment: Chomsky (2000, 2001).
  - Case assigners are T (subjects) and *v* (objects).
  - Case assigners have unvalued probes for number, gender and person ([uϕ] for short) that can be valued in a relation with a goal DP via AGREE in (11).

(11) Matching is a relation that holds of a probe P and a goal G. Not every matching pair induces AGREE. To do so, G must (at least) be in the *domain* D(P) of P and satisfy locality conditions. The simplest assumptions for the probe-goal system are shown [below:]

  a. Matching is feature identity.

  b. D(P) is the sister of P.

  c. Locality reduces to "closest c-command." (Chomsky 2000:122)

  - When a case assigner AGREEs with a goal, the assigner values its [uϕ]-features to those for the goal, and values the case features of the goal.
  - Successful AGREE deactivates both the probe and the goal, meaning they cannot participate in any further (case and agreement related) AGREE relations.
  - Deactivated goals remain visible for Matching, but can no longer value a probe's ϕ-features (this is how defective intervention works).

- We assume a late insertion model (e.g. Distributed Morphology, Halle and Marantz 1993, Embick and Noyer 2006) where the nodes manipulated by syntax do not contain phonological material. Phonological material is inserted in the post syntactic component, sensitive to the output of the syntactic computation.
- We adopt a model where syntactic structure are linearized in the post syntactic component (Kayne 1994 and much subsequent work).

2.2 Absence of Person

- ϕ-features originate in different parts of DP/NP, Table 2.
- Copies of these features are present in several places in DP:
  - Bernstein (2001): ΦP is the locus of NUM/GEND-concord, gender features have to be present on ΦP.
  - DP internal concord and DP external agreement can differ in their feature specification (see Wechsler and Zlatić 2003:51). D has to contain separate features from those in Φ. Typically though, these will have the same value as those in Φ.
- Person agreement with subjects: Table 3a. T's ϕ-probe accesses the features in the D-layer and can value its person, number and gender features.

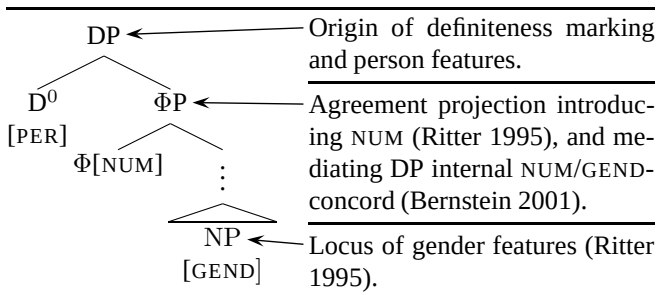


Table 2: Origin of ϕ-features inside DP.

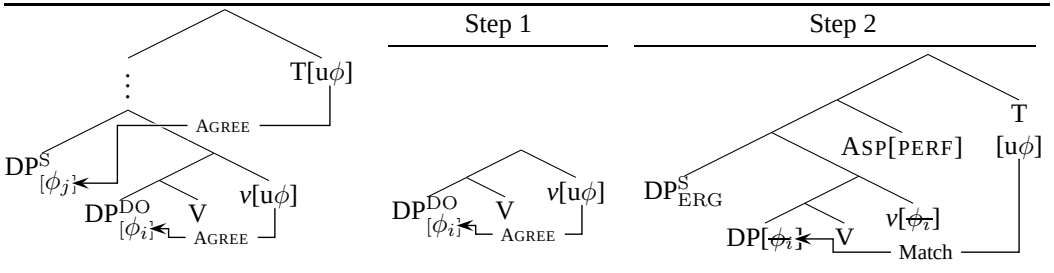


Table 3: Person agreement with subjects and objects.

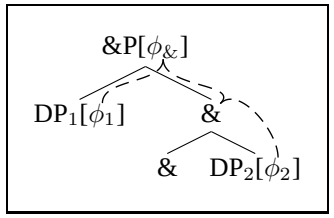
- Agreement with unconjoined objects: Table 3b.
  - Step 1: *v*'s [uϕ] probes and matches the features in the direct object's D and AGREEs with them. This licenses DO's case. *v* values its [uϕ]-features, and DO's ϕ-features become inactive.
  - Step 2: T's [uϕ] probes. T Matches D on DO, because it has the right type of features. DO cannot value T's features, because they have been deactivated by *v*. Since the DP layer contains the only copy of person features, T cannot value its person features.

  The failure to check ϕ-features on T does not lead to a crash. Presumably the same happens in cases like (1c) where both subject and object are overtly case marked.
- The subject-object asymmetry in person agreement:
  - Agreement with subjects: T's [uϕ] is the only probe that accesses the subject for case/agreement purposes. When that happens, the subject's ϕ-features are still active and value T's.
  - Agreement with objects: The only instance of person features, those on D, has already been deactivated by object case assignment at the time T probes. Hence the person feature on T cannot be valued.

2.3 Absence of Resolved Agreement

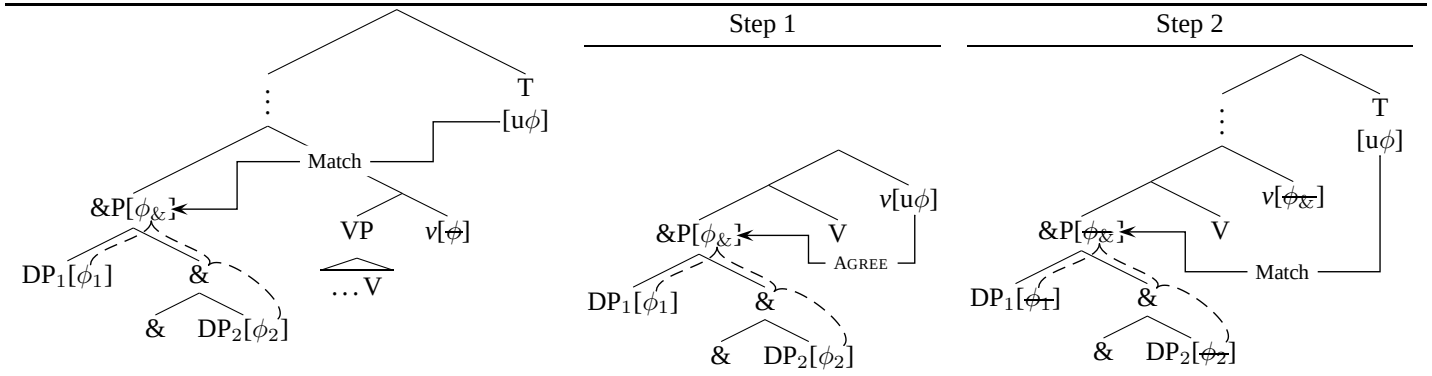
- ϕ-features on conjunctions.
  - We assume that resolved features reflecting the combined features properties of the conjuncts are present on &P, [$\phi_{\&}$] in the inset. In combinations with the account from the previous section, this gives an explanation for the absence of resolved agreement.
  - Combining absence of person with absence of resolved agreement: To ensure that deactivation of &P[ϕ] leads to the deactivation of the ϕ-features in the D layers of all conjuncts, these features have to be linked to one another.

    We assume that this happens as part of the resolution algorithm that computes [$\phi_{\&}$] from [ϕ_1],..., [ϕ_n].



- Agreement with subjects: Table 4a.
- Absence of resolved agreement with conjoined objects: Table 4b.
  - Step 1: *v*'s [uϕ] probes and matches the features in &P and AGREEs with them. This licenses DO's case. Since [$\phi_{\&}$] is related to the features in the D-layers of the conjuncts ([ϕ_1] and [ϕ_2]), these are also deactivated.
  - Step 2: T's [uϕ] probes and Matches [$\phi_{\&}$], because it has the right type of features. [$\phi_{\&}$] cannot value T's features, because it have been deactivated by *v*.

  Like in agreement with uncoordinated objects, T's features remain unvalued.
- The subject-object asymmetry in conjunct agreement:



a. Agreement with Subject: b. Agreement with Object:

Table 4: Agreement with conjoined subject and objects.

- Agreement with subjects: T's [uϕ] is the only probe that accesses the subject for case/agreement purposes. When that happens, the ϕ-features on &P are still active and value T's.
- Agreement with objects: By the time T probes, the ϕ-features on &P have already been deactivated by the object case assigner, and hence cannot value T's [uϕ].

- The absence of resolved agreement and the absence of person agreement receive the same explanation: The features in D/&P have been deactivated by accusative case assignment and therefore cannot value T's [uϕ].

3 Valuing Agreement with Objects

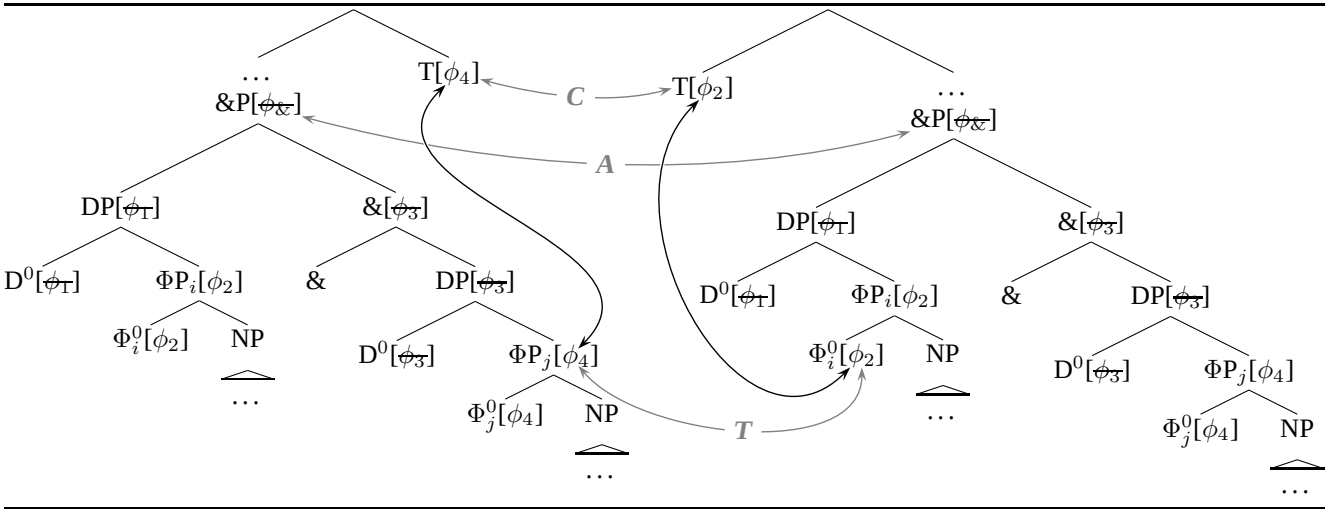
- The general idea: CCA is a PF operation that supplies heads that can morphologically express ϕ-features but failed to value them in the syntax with values using the relations that syntax has established.
  - Syntax fails to value agreement with objects, but establishes a syntactic relation between T's [uϕ] and the ϕ-features complex in DO (the Matching in Step 2 in Tables 3 and 4).
  - PF uses this syntactic relation to to retrieve values for T's [uϕ].
  - When the syntactic relation between T's [uϕ] and DO[ϕ] offers multiple options for valuing T's [uϕ], as happens with conjoined objects, PF chooses one based on linear proximity.

  The overall proposal is similar to that of van Koppen (2005, 2007), in that PF chooses between multiple ways of valuing agreement made available by the syntax.

- Which features inside DO value T-agreement?
  - Conjoined objects: Something lower in the structure of &P, i.e. one of the conjuncts.
  - Non-conjoined objects: There is a head below DP that has number and gender features, ΦP.

  The features that value T-agreement come from a head lower in the structure in both cases. Thus there is a consistent pattern of which features are inaccessible to agreement with objects (those highest in the structure), and one of which features are accessed (ones lower in the structure).

- The specifics:
  - No explanation why CCA rather than some other strategy is used for dealing with the fact that T has unvalued ϕ-features.



a. Last conjunct agreement (see (5)). b. First conjunct agreement (see (7)).

Table 5: First and last conjunct agreement under (12).

– This section presents a way of stating what the closest conjunct is in terms of the information that syntax delivers and linearization statements that come from a linearization algorithm that maps asymmetric c-command onto linear precedence (Kayne 1994 and much subsequent work).

- Three elements enter into the computation of CCA:

  C: The agreement controller, the head on which agreement features are expressed morphologically.

  A: The *anchor*, the element that the T's ϕ-probe has matched.

  T: the *target*, the node that provides the ϕ-features that end up being expressed on ***C***.

  – Syntax delivers the relation between ***C*** and ***A***

  – PF's job is to figure out which part of ***A*** is ***T***.

- The relation between ***C*** and ***T*** can be stated as in (12).

(12) Whichever linear relation holds between ***C*** and ***A***, ***T*** is the unique Φ_i such that

  a. Φ_i is contained in ***A***, and

  b. there is no Φ_j different from Φ_i and contained in ***A*** such that the same linear relation holds between Φ_j and Φ_i as holds between ***A*** and ***C***.

  – Clause b. states that there is no other possible agreement target inside ***A*** that stands between ***T*** and ***C***.

  – The linear relations referred to in (12) can be retrieved from linearization statements generated by the linearization algorithm.

- The workings of (12) are illustrated in Table 5. The features expressed in object agreement are those of ΦP below the DP-layer.

Constraining Linear Relations.

- A purely linear account of CCA runs into potential problems when objects contain other DPs for example inside a prenominal modifier.

(13) a. Atif-ne [[chiinii khaa-taa] bhaaluu] aur [[shahad khaa-tii]
Atif-ERG sugar.F eat-IMP.M.SG bear.M and honey.M eat-IMP.F
chiRiyaa] **dekh-ii**
bird.F see-PFV.F
'Atif has seen a sugar eating bear and a honey eating bird.'

b. Atif-ne {***dekh-ii** / *dekh-aa*} [[**chiinii** khaa-taa]
Atif-ERG {see-PFV.F / see-PFV.M} sugar.F eat-IMP.M.SG
bhaaluu] aur [[shahad khaa-tii] chiRiyaa]
bear.M and honey.M eat-IMP.F bird.F
'Atif has seen a sugar eating bear and a honey eating bird.'

- This potential problem disappears once we consider more closely what the anchor is.
  - The anchor is what T's ϕ-probe matches on &P. These are the inactive features [$\phi_{\&}$].
  - These in turn are linked via resolution (Section 2.3) and DP internal mechanism (Section 2.2) to the features in the extended projection of NP, in particular ΦP.
  - This complex of ϕ-features is the search space that PF operations use to determine the target in the sense of (12).

  The features inside prenominal relatives, or any kind of modifier inside the DP are not part of the anchor and thus ignored for the purposes of CCA resolution.
- Summary:
  - Agreement with subjects can be accounted for in the syntax.
  - The absence of person and resolved agreement in agreement is a syntactic fact, the result of the derivational history of DOs prior to T-agreement.
  - Agreement with objects is valued in the post-syntactic component, subject to linear proximity, but constrained by syntactic relations.

Agreement with Unaccusative Subjects

- In some contexts, unaccusative subjects allow CCA, but ...
  - Animate subjects never allow CCA.
  - Inanimate subjects allow both CCA and resolved agreement.
- This looks like a problem:
  - Our claim is that CCA is fed by case assignment prior to T-agreement. Is there such a thing with unaccusative subjects?
  - CCA with objects is largely insensitive to the properties of the object. Why is CCA with unaccusative subjects sensitive to animacy?
  - CCA with objects is all but obligatory. Why is there optionality with unaccusative subjects?
- Not a problem, but a prediction:
  - Unaccusative subjects can receive case inside the VP domain.
  - This case assignment is sensitive to animacy.

  The availability of CCA with subjects and its sensitivity to animacy is thus predicted.

Bidirectional Agreement: Syntax constrains CCA.

- Agreement in V.PART[O&O]Aux orders access the features of both conjuncts but is subject to an identity requirement between the agreement on the participle and the auxiliary (see Bhatt and Walkow 2011).
- Proposal:
  - Bhatt (2005) argues that Agreement on participles, progressive etc. is parasitic on T-agreement. This delivers the constraint on identity.
  - CCA is a PF process that supplies heads that can express ϕ-features morphologically but have not valued theirs in the syntax. It applies to participles etc. just as much as to auxiliaries in T.

  As a result participles end up receiving features from two places: via CCA and via their syntactic relation with T. These two sets of features have to be expressed in one form, which is only possible when the features are the same or there is a syncretic form.

4 Matching Effects in Right Node Raising

- Sensitivity to linear proximity is not just a fact about agreement with conjoined objects, but is also detectable in larger conjunction structures.
- The contrasts: Subject agreement leads to matching effects, object agreement doesn't, (13b) vs. (13d).

(10) a. [Ramesh ek baksaa] aur [Ram ek thailaa] uthaa
Ramesh.M a box.M.SG and Ram.M a small.bag.F.SG lift
raha tha
PROG.M.S be.PST.M.S
'Ramesh was lifting a box and Ram a small bag.'

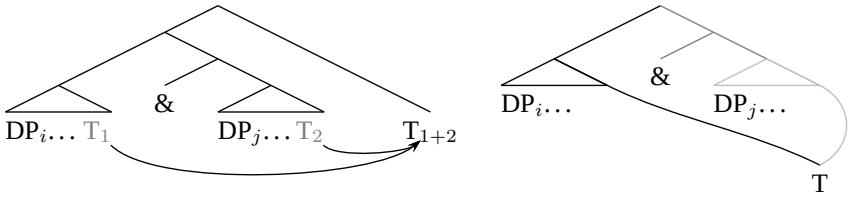
b. Subjects with mismatching features:
[Ramesh ek baksaa] aur [Sita ek thailaa] uthaa
Ramesh.M a box.M.SG and Sita.F a small.bag.F.SG lift
{???rahii thii/ *rahe the}
{PROG.F be.PST.F/ PROG.M.PL be.PST.F.PL}
'Ramesh was lifting a box and Sita a small bag.'

c. Present tense copular construction with mismatching features saved by syncretism:
[Ram aalsii] aur [Sitaa karmaṭh] hai
Ram.M lazy and Sita.F hardworking be-PRS.SG
'Ram is lazy and Sita is hardworking.'

d. Objects with mismatching features:
[Ramesh-ne ek baksaa] aur [Sitaa-ne ek thailii]
Ramesh-ERG a box.M.SG and Sita-ERG a small.bag.F.SG
uThaa{-ii / *-ye}
lift{-F.SG / -M.PL}
'Ramesh lifted a box and Sita a bag.'

- The plan:
  - Derive the contrast between subject agreement, (13b), and object agreement, (13d), from the differences between subject and object agreement established in §2 and §3:
    - Subject agreement values the features of T in the syntax.
    - Object agreement values them at PF, subject to linear proximity.

    The agreement asymmetry in RNR follows from general differences between agreement with subjects and with objects.
- The structure of Right Node Raising:
  - Assume an analysis where the shared constituent is the exponent of syntactic structure in both conjuncts e.g.
    - Rightwards Movement analyses (e.g. Sabbagh 2007).
    - Multidominance (e.g. Gračanin Yuksek 2007, ta, Johnson 2007, McCawley 1982, Wilder 1999).



a. Rightward movement: b. Multidominance:

Table 6: Schematic structures for Rightward Movement and Multidominance analyses of RNR.

- Agreement with subjects:
  - The shared T has ϕ-values from the agreement relations inside each conjunct.
  - Nodes with multiple ϕ-values can only be spelled out if there is a single form that can express all values.
    - Possible when all the features are the same: (13a).
    - Possible when one exponent can express more than one combination of features (syncretism): (13c).
    - Impossible otherwise: (13b)
- Agreement with objects:
  - T's [uϕ] matches the objects in the two conjuncts, without leading to valuation.

  - Similar to agreement with conjoined objects, this offers PF multiple sources for valuing the features on T.
  - PF choses which of the objects will supply values to T by considerations of linear proximity.

- Valuation of agreement at different stages in the derivation subject to different locality conditions derives the subject-object asymmetry in agreement in RNR.

5 Conclusions

5.1 Locating Agreement in Grammar

- At least some agreement processes happen at PF: Agreement with objects in Hindi-Urdu.
  - Agreement with objects is sensitive to linear proximity (CCA and agreement with closest object).
  - Syntactic operations use hierarchical relations, not linear relations.
- Is there agreement in the syntax?
  - The bleeding relation between case assignment and T-agreement fits with an account of case assignment in terms of syntactic feature checking.
  - A completely post-syntactic account of case and agreement (e.g. Bobaljik 2008) would have to account for subject-object asymmetries in a different way.

5.2 Implications for the Analysis of CCA

- The proposal here fits into a line of recent analyses that attribute CCA to a mismatch between the features of the probe and those of &P.
  - Marušič et al. (2007): Slovenian.
    * CCA is only in gender. Number agreement is always resolved.
    * Proposal: While number features can be compositionally computed from the specifications of the conjuncts, gender cannot.
    * Gender agreement is CCA, because &P lacks gender features.

    Bošković (2009) builds on the same assumptions for Serbo-Croatian.
  - Doron (2000): Biblical Hebrew.
    * T agreement in Hebrew has a D-features.
    * &P is not a D, hence it cannot be an agreement target.

    The analysis here argues that such a mismatch can be produced derivationally, such that earlier grammatical processes (object case assignment) make the relevant features on &P inaccessible.
- CCA is not an an option that languages choose instead of resolved agreement, but it is what can happen when resolved agreement fails.

  This is different from accounts where CCA is resolved without reference to &P, for example one using agreement under Government (e.g. Bahloul and Harbert 1992, Harbert and Bahloul 2001, Benmamoun 1992, McCloskey 1986, Munn 1999).
- Unified problem, not a unified solution. The mechanism by which CCA is resolved are different across languages. An example:
  - Bošković (2009) argues that LCA in Serbo-Croatian arises from the absence of gender features, and &P together with the joint constraints of movement and agreement. LCA is resolved syntactically, which also provides an explanation for its sensitivity to the number and gender features of non-final conjuncts.
  - LCA in Hindi-Urdu arises in unmoved word orders, and it is insensitive to the features of conjuncts other than the last one. FCA involves some word order alternation, but it is not clear that the agreement head T is triggering it (Bhatt and Dayal 2007, Mahajan 1997b,a).

  Such a *same problem, different solutions* approach has been advocated for restrictions on clitics in Basque by Arregi and Nevins (2008) and is common in phonology (Pater 1990 for a demonstration).

A Number Sensitive Items

- Aoun et al. (1994), Aoun and Benmamoun (1999 also Aoun and Benmamoun 1999) show that CCA in Moroccan and Lebanese Arabic is incompatible with elements that are sensitive to plurality, henceforth *Number Sensitive Items*,

and take this as evidence that CCA in these languages is not agreement with a conjoined subject, but a clausal conjunction that has undergone a reduction operation.

- The compatibility between Number Sensitive Items and CCA is often taken as evidence against such a reduction analysis (Aoun and Benmamoun 1999, Marušič et al. 2007).
- Hindi-Urdu shows a mixed pattern of compatibility between Number Sensitive Items and CCA. We show that
  - The incompatibility between some Number Sensitive Items and CCA is not an argument for a reduction analysis, and
  - The compatibility between some Number Sensitive Items and CCA is not an argument against such an analysis.

  Data from Number Sensitive Items are uninformative for choosing between a large conjunction and a reduction analysis.
- *ek saath*, 'together,' and relative clauses that contain Number Sensitive Items are compatible with CCA, (14).

(14) a. Ram-ne ek saath (ek haath-se) ek baksaa aur ek thailaa
Ram-ERG together one hand-with a box.M and a bag.M
uṭhaa-yaa
lift-PFV.M.SG
'Ram lifted a box and a bag together (with one hand).'

b. Rina-ne ek baṭuaa aur ek saaṛii kharid-ii ⌈jo ki donõ
Rina-ERG a purse.M and a sari.F buy.PERF.F [REL that both
sale-pe the⌉
sale-on be.PST.M.PL]
'Rina bought a purse and a sari which were both on sale.'

- *ek saath* is also compatible with larger conjunctions like gapping, (15), where the elements *ek saath* associates with do not form a constituent. It's compatibility with CCA in (14a) can then not be taken a priori as an argument against the presence of a large conjunction.

(15) Ram-ne ek saath apnii naanii-ko ek haar bhej-aa
Ram-ERG together self.F grandmother-DAT a necklace send-PFV.M.SG
aur apne nanaji-ko ek ghaṛii
and self.M.OBL grandfather-DAT a watch.F
'Ram sent a necklace to his maternal grandmother and a watch to his maternal grandfather together.'

- Extraposed relative clauses like the one in (14b) can take split antecedents, (16). Their compatibility with CCA cannot be taken as evidence that the objects in (14b) form a constituent.

(16) Ram-ne yeh kitaab$_i$ aur Sita-ne vo ghaRii$_j$ khariidii ⌈jo ki
Ram-*erg* this book and Sita-ERG that watch.F buy.PFV.F REL COMP
donõ$_{\{i+j\}}$ sale-pe {thĩ:/ the}[1]⌉
both sale-on {be.PST.F.PL/ be.PST.M.PL}
'Ram bought this book and Sita that watch which were both on sale.'

- Number Sensitive Items like *donõ*, 'both' (17), and *ek duusre*, 'each other' (18), force resolved agreement with conjoined objects which is not otherwise available.

(17) 'both'

Ram-ne kelaa aur naashpaatii donõ khaa{-ye / *-yii}
Ram-Erg banana.M and pear.F both eat{-PFV.M.PL / -PFV.M.S}

'Ram ate both the banana and the pear.'
(*sab* 'all' behaves the same, Bhatia and Benmamoun 2009)

(18) 'each other'

a. Ram-ne ek baksaa aur ek thailaa darwaaze-ke paas
Ram-Erg a box.M and a bag.M door-Gen near
rakh{-aa / ??-e}
keep{-PFV.M.SG / -PFV.M.PL}
'Ram kept a box and a bag near the door.'

[1]The verb in the relative clause can take either masculine plural or feminine plural agreement. We don't know why that is. Despite this variability, agreement is always plural, which is consistent with the current argument.

b. Ram-ne ek baksaa aur ek thailaa ek duusre-ke paas
Ram-Erg a box.M and a bag.M each.other-Gen near
rakh{???*-aa / -e}
keep{-PFV.M.SG / -PFV.M.PL}
'Ram kept a box and a bag near each other.'

- This is a fact about these elements, not about the size of the conjunction. *donõ* and *ek duusre* also force resolved agreement when their associates are distributed over RNR remnants. In (19) a. and b., show that *donõ* and *ek duusre* force resolved agreement with objects in RNR, where there is agreement with the closest object without them, (19c).

(19) a. Ram-ne [aaj ek baksaa$_i$] aur [kal ek thailaa$_j$] ek
Ram-ERG today a box and yesterday a bag each
duusre$_{\{i,j\}}$-kii jagah rakh diye
other-GEN place keep give.PFV.M.PL
'Ram kept a box today and a bag yesterday in each other's place.'

b. Ram-ne [aaj ek baksaa$_i$] aur [kal ek thailaa$_j$] donõ$_{\{i,j\}}$
Ram-erg today a box and yesterday a bag both
vahaaN rakh diye
there keep give.PFV.M.PL
'Ram kept both a box today and a bag yesterday there.'

c. Ram-ne [aaj ek baksaa] aur [kal ek thailaa] vahaaN rakh
Ram-Erg today a box and yesterday a bag there keep
{diyaa/ ???diye}
{give.PFV.M.SG/ give.PFV.M.PL}
'Ram kept a box today and a bag yesterday there.'

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