A new approach to number agreement with plurals-of-politeness

Abstract

Plural DPs which indicate politeness or honorification towards a singular referent have received significant attention in the literature. Unlike regular plurals which always trigger plural agreement, these DPs, which we call *plurals-of-politeness*/PoPs, can trigger singular agreement on some probes in some languages. Moreover, the distribution of singular agreement is subject to certain constraints. Expanding the class of PoPs to include not only pronominals but also nominals, which are crosslinguistically rarer and have received relatively less attention, this paper offers a new analysis of agreement with PoPs. We propose a structure of PoPs, in which the PL feature in a PoP is embedded further inside the DP than the PL feature in a regular plural. The core idea is that a probe that can access the PL feature in a regular plural can sometimes fail to do so in a PoP, resulting in singular agreement. This analysis can derive all the constraints on singular agreement with PoPs, which existing accounts of agreement with PoPs are unable to do. Additionally, by examining nominal and pronominal PoPs together, we provide the first unified account of DP-internal and external agreement with PoPs.

Keywords: plurals, honorificity, agreement, concord

1 Introduction

Languages often use plural morphology to signal honorification and/or politeness towards a singular referent. We will refer to such constructions as plurals-of-politeness or PoPs. Consider, (1) from Bosnian/Croatian/Serbian, where we have the 2nd person plural pronoun *vi*, which in addition to its use as a regular plural, can also be used to refer to a single honorific addressee. Like a regular plural, this PoP triggers plural agreement uniformly on all agreement targets.

(1) Vi ste bil-i pospan-i
2PL AUX.2PL been-MPL sleepy-MPL
'You (plural)/you (singular honorific) were sleepy.' (Puškar-Gallien 2019, pg. 4)

However, in some languages, PoPs trigger mixed number agreement: singular on some targets and plural on others. Consider the example from Czech below, where

the auxiliary shows plural agreement, but the participle and the predicative adjective show singular agreement.

(2) Vy jste byl-a dobr-á
2PL AUX.2PL been-FSG good-FSG
'You (singular honorific) were good.' (Comrie 1975, pg. 408)

The availability of singular agreement with PoPs has received significant attention in the literature. Various authors (Wechsler 2011; Wechsler and Hahm 2011; Despić 2017; Puškar-Gallien 2019; Sinha TA; Kaur TA) have derived singular and plural agreement with PoPs in various different ways. However, the availability of singular agreement with PoPs is not entirely unrestricted and there are constraints on its distribution, within and across languages. For instance, it has been known since Comrie (1975) that in configurations with two probes, both of which can show singular or plural agreement with PoPs, the probe that is higher in the structure cannot show singular agreement if the lower probe shows plural agreement. To the best of our knowledge, none of these previous accounts are able to derive this constraint. This paper proposes a novel account that can derive the entirety of the agreement patterns seen with PoPs, along with the constraints these patterns are subject to.

The core intuition behind our analysis is that PoPs have a PL feature, which is less accessible for agreement probes than a PL feature in a regular plural. In particular, a probe that can access the PL feature in a regular plural can sometimes fail to do so in a PoP. When this happens, we get default singular agreement with a PoP. To formalize this, we propose that the PL feature in PoPs is located lower in the DP, on the n head, as opposed to regular plurals which host a PL feature on a higher Num head. Variation between singular and plural agreement with PoPs can be derived by varying the search domain of a probe. If a probe can access n, then it shows plural agreement with PoPs, whereas if its search domain is delimited for some reason, so as to prevent it from accessing n, singular agreement obtains. We use this low location of the PL feature in a PoP, along with certain properties of existing agreement machinery in the literature, to derive the various constraints on singular agreement with PoPs. With respect to the agreement machinery, we adopt the Interaction and Satisfaction model of agreement (Deal 2015, 2023), where the features a probe copies (its *interaction* features) may be distinct from the features that once encountered halt probing (its *satisfaction* features). In addition, we assume that a probe that has acquired its features via Agree can then function as a goal for a higher probe (Puškar 2017).

The motivation for our analysis comes from the DP-internal agreement patterns of *nominal* PoPs, which have received little attention in the literature. Nominal PoPs are DPs that carry a PL feature to encode honorification towards a singular referent, but involve a noun rather than a pronoun (Houtzagers 2018; Bhatt and Davis 2023; Corbett 2023; Sinha 2023; Kaur TA). An example from Punjabi is given in (3). DP-internal agreement patterns seen with nominal PoPs in some languages provide crucial insights on how singular agreement obtains, with both nominal and pronominal PoPs, both DP-internally and externally. These insights lead us to an analysis, which can derive the constraints on singular agreement across the board.

(3) masəɽ aye
uncle came.MPL
'The uncle (honorific) came.'

The rest of the paper is organized as follows. We begin, in section 2, by presenting nominal PoPs from Punjabi, focusing on their DP-internal agreement patterns. This data serves as the basis for our proposal, which is presented in section 3. In particular, section 3 provides our proposed structure of PoPs and the mechanism responsible for their agreement patterns. Section 4 extends this analysis beyond Punjabi, to account for DP-external agreement with all PoPs. Section 5 discusses a remaining issue with our analysis, and section 6 concludes.

2 Punjabi nominal PoPs and their DP-internal agreement

Punjabi is a language which has 2nd and 3rd person PoPs. In (4), we see that a 2nd person plural pronoun (with associated plural agreement) can be interpreted as singular honorific. The same point can be made with the 3rd person pronoun in (5).

(4) tussi aye
2PL came.MPL
'You (plural)/you (singular honorific) came.'

(5) ona-nu vekho
3PL-DOM see.IMP
'See them/him (honorific)/her (honorific)!'

In addition, the language has nominal PoPs, as shown in (6). Unlike their pronominal counterparts, the nouns in these DPs do not carry plural inflection themselves. Nonetheless, we treat these DPs as PoPs because they trigger plural agreement on the verb, suggesting that they have a PL feature, even if it is not overtly realized on the noun.

(6) a. massi aye
aunt came.MPL
'The aunt (honorific) came.'

b. masəɽ aye
uncle came.MPL
'The uncle (honorific) came.'

Note also that in (6a), the feminine honorific noun triggers *masculine* plural agreement. This is in fact a general property of PoPs across the language. Even though the language has a dedicated feminine plural agreement affix, feminine PoPs do not take this agreement affix, and instead take the masculine plural one. This suppression of feminine agreement will be discussed in more detail in section 5, but we set it aside for now, only focusing on number agreement.

Unlike pronominals, nominals allow for the possibility of DP-internal adnominal modification. DP-internal adnominals (including attributive adjectives and possessives) in Punjabi agree with the head noun in number and gender. This is shown for a few regular (non-PoP) nouns below.

(7) a. ikk pyara munḍa aya
one lovely.MSG boy came.MSG
'A lovely boy came.'

b. do pyare munḍe aye
two lovely.MPL boy.PL came.MPL
'Two lovely boys came.'

c. ikk pyari kuṛi ayi
one lovely.FSG girl came.FSG
'A lovely girl came.'

d. do pyariã kuṛiã ayiã
two lovely.FPL girl.PL came.FPL
'Two lovely girls came.'

Turning back to PoPs, they also trigger agreement on the adnominals. Crucially, DP-internal agreement (henceforth labeled as concord) with a PoP exhibits a gender asymmetry. While masculine PoPs only allow plural concord, feminine PoPs allow either singular or plural concord.

(8) a. mere pyare/meri pyari massi aye
my.MPL lovely.MPL/my.FSG lovely.FSG aunt came.MPL
'My lovely aunt (honorific) came.'

b. mere pyare/*mera pyara masəṛ aye
my.MPL lovely.MPL/my.MSG lovely.MSG uncle came.MPL
'My lovely uncle (honorific) came.'

Note that the possibility of singular concord is only possible DP-internally. DP-external agreement with PoPs is always plural, regardless of the gender of the PoP. This is true not only for verbs, but also for predicative adjectives, as shown in (9).

(9) mere/meri massi pyare/*pyari ne
my.MPL/my.FSG aunt lovely.MPL/*lovely.FSG AUX.3PL
'My aunt (honorific) is lovely.'

Although feminine PoPs can trigger either singular or plural concord, mixed concord is generally not possible. This means that all adnominals typically either show uniformly singular or uniformly plural concord.

(10) mere pyare/meri pyari/*mere pyari/*meri pyare
my.MPL lovely.MPL/my.FSG lovely.FSG/my.MPL lovely.FSG/my.FSG lovely.MPL
massi aye
aunt came.MPL
'My lovely aunt (honorific) came.'

However, mixed concord is possible for some speakers with two adjectives vəɖɖa and choʈʈa, which when used with kinship nouns, mean 'older' and 'younger' respectively. This is illustrated in (11), where vəɖɖa 'older' can occur with singular agreement while the possessive occurs with plural agreement.

(11) %mere vəɖɖi massi aye
my.MPL older.FSG aunt came.MPL
'My older aunt (honorific) came.'

Crucially, mismatches are tolerated in only one direction - where the low adnominal shows singular concord and the high adnominal shows plural concord. Reversing the agreement pattern results in ungrammaticality. We refer to this restriction as the *SG-over-PL constraint.

(12) *meri vəɖɖe massi aye
my.FSG older.MPL aunt came.MPL
'Intended: My older aunt (honorific) came.'

Not surprisingly, all of the adnominals including vəɖɖa 'older' can also occur with matching singular agreement or matching plural agreement with a PoP, as in (13).

(13) mere vəɖɖe/meri vəɖɖi massi aye
my.MPL older.MPL/my.FSG older.FSG aunt came.MPL
'My older aunt (honorific) came.'

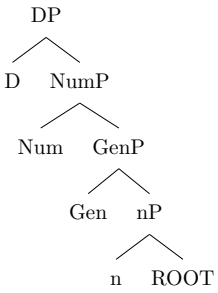
In summary, we have shown that Punjabi nominal PoPs trigger uniformly plural DP-external agreement, but can show singular or plural concord DP-internally. Crucially, there is a gender asymmetry in the availability of singular concord: only feminines allow for this possibility. With multiple adnominals, mixed number concord is generally unavailable. However, with certain low adnominals, we can get singular concord, while the remaining higher adnominals show plural concord. The reverse pattern (i.e., SG-over-PL) is ungrammatical.

3 Our proposal

3.1 The structure of PoPs

Our main proposal is that the PL feature in PoPs is located *lower* in the structure than both semantic gender and semantic number. Following much of the Distributed Morphology literature, we assume that nouns involve a root combining with a categorizing head n (Marantz 1997, 2001; Arad 2003, among many others). This structure in turn combines with a Num head (Ritter 1991; Valois 1991), and then with a D head to give a DP.

(14) Nominal structure

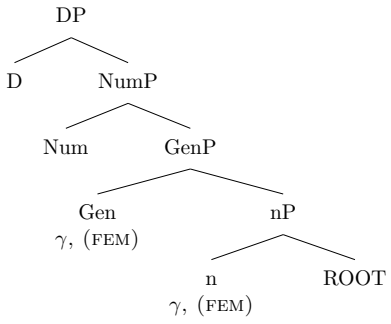


We claim that there are two loci of number features in the DP - one on n, and one on Num (see also Acquaviva 2008; Lowenstamm 2008; Alexiadou 2011; Kramer 2016). The PL feature on the Num is strictly associated with semantic plurality, and is only found on regular plurals and *not* PoPs. In contrast, the PL feature on n is found in both regular plurals and PoPs. In line with Nevins (2011), we do not assume a syntactically active SG feature, and consequently treat regular singulars as simply lacking a PL feature on both n and Num.

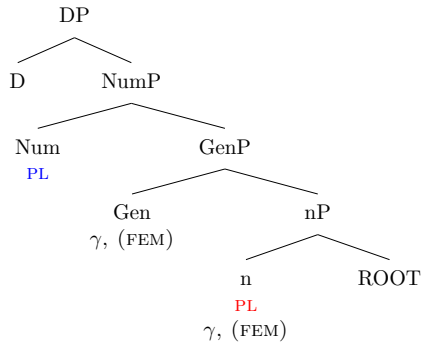
Moving on to gender, we claim that there are two possible sets of gender features: grammatical gender features and semantic gender features. Following Panagiotidis (2018), the two sets are located in distinct positions. Grammatical gender is introduced on the nominalizing head n, where it is able to affect morphophonological phenomena associated with n such as inflection/declension class (Lowenstamm 2008; Kramer 2015 among others). Semantic gender, associated with the 'natural' gender of the noun, is located above n on a head called Gen(der), in line with Panagiotidis (2018). All nouns considered in this paper host not only grammatical gender but also semantic gender since they all refer to humans. We represent gender using the feature γ, which is found in the representation of both masculine and feminine DPs. Feminine DPs are differentiated from masculines by the presence of an additional feature [FEM], not found in masculines.

The relevant structures for a regular singular and a regular plural noun are provided in (15) and (16). The structure of a nominal PoP is given in (17).

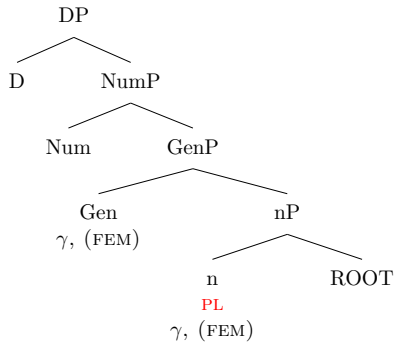
(15) Regular singular



(16) Regular plural



(17) Plural-of-politeness (PoP)



As shown in the trees above, there is no PL feature in regular singulars. PoPs and regular plurals share the PL feature on n (shown in red), with regular plurals hosting an additional PL feature on Num (shown in blue) that PoPs lack. The question of how the PL feature is interpreted such that the lower one on n is found with both regular plurals and PoPs, while the higher one on Num is found only with regular plurals is left for future research. Our focus here is to derive the morphosyntactic behavior of these PoPs vis-à-vis that of regular plurals.

We claim that singular and plural agreement seen with PoPs across all languages can be derived by varying whether the probe can access the low PL feature on n. Plural agreement arises when this PL feature is accessed, while singular agreement arises when this access is blocked. Focusing specifically on the case of Punjabi concord here, where singular concord is available only with feminines, we propose that access to the low PL feature can be blocked by the FEM feature.

3.2 Deriving the gender asymmetry

We assume an Interaction-Satisfaction model of Agree (Deal 2015, 2023). Although this model has so far been used to derive various kinds of DP-external agreement (e.g. Baier 2018; Clem 2019; Oxford 2022 among others), we show that this model is necessary for deriving concord in Punjabi.

In this model, probes are specified for interaction (INT) features and satisfaction (SAT) features. The INT features of the probe determine what features will be copied back to the probe, while its SAT features are those features that once encountered will cause it to stop further probing. To see how this works, let us consider an example from Nez Perce, discussed in Deal (2015). Complementizers in Nez Perce inflect for 1st person, 2nd person, and plural features, in case either the subject or object bear these features. As shown in (18a), when the subject is 1st person plural and the object is 2nd person singular, the complementizer shows 1st person, 2nd person and plural agreement. By contrast, in the reverse configuration where the subject is 2nd person singular and the object is 1st person plural, the complementiser only shows 2nd person agreement, see (18b). Note that the lack of plural agreement on the complementizer in (18b) is not because of some general rule that prevents the probe from accessing number features on the object. The complementizer can occur with plural agreement from the object, but only when the subject is not specified as 2nd person, as in (19).

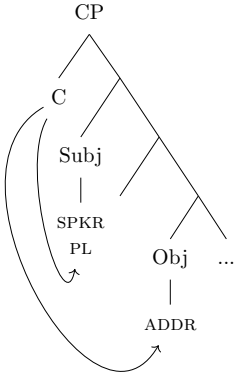
(18) a. ke-pe-m-ex kaa pro_{subj} cewcew-tée'nix pro_{obj}
C-PL-2-1 then PRO.1PL telephone-TAM PRO.2SG
'When we call you(sg)'

b. ke-m kaa pro_{subj} 'ee nees-cewcew-téetum pro_{obj}
C-2 then PRO.2SG 2SG.CL O.PL-telephone-TAM PRO.1PL
'When you(sg) call us' (Deal 2015, pg. 8)

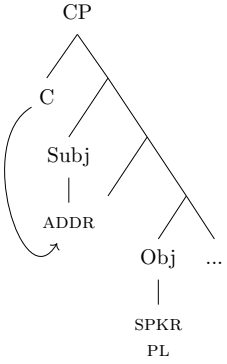
(19) ke-pe-m kaa A.-nim hi-cewcew-téetu pro_{obj}
C-PL-2 then A.ERG 3SUBJ-telephone-TAM PRO.2PL
'When A calls you(pl)' (Deal 2015, pg. 7)

Deal (2015) takes the above facts to suggest that the probe on C in Nez Perce cannot probe beyond a 2nd person feature. To derive this, she proposes a system where the probe interacts with all instances of number and person features until it encounters a 2nd person feature, at which point, probing stops. Thus, the probe on C in Nez Perce is specified as [INT: φ, SAT: ADDR]. Consider the derivation for (18a), as given in (20). The probe on C first interacts with the subject and copies its phi-features. However, since the 1st person plural subject does not meet the satisfaction condition of the probe, i.e. SAT: ADDR, the probe continues its search until it encounters the ADDR feature on the 2nd person object. Consequently, the probe ends up with features from both the subject and the object. Consider now the derivation for (18b), provided in (21). In the presence of a subject that hosts an ADDR feature, the satisfaction condition of the probe is met immediately. Thus, it does not search further, ending up with the ADDR feature alone.

(20) Multiple agreement



(21) 2nd person subject agreement



To sum up, the Interaction-Satisfaction model provides a system of agreement where a probe has INT features that do not need to match the SAT features, nor do they need to stand in an entailment relation in the feature geometry vis-à-vis the SAT features.

Employing the Interaction-Satisfaction model, we now derive the gender based asymmetry for PoPs in Punjabi. Recall that number concord with PoPs in Punjabi exhibits a gender based asymmetry - while feminine PoPs can trigger singular or plural concord on adnominals, masculine PoPs can only control plural concord. The relevant examples are provided below in (22).

(22) a. pyare/pyari massi aye
lovely.MPL/lovely.FSG aunt came.MPL
'The lovely aunt (honorific) came.'

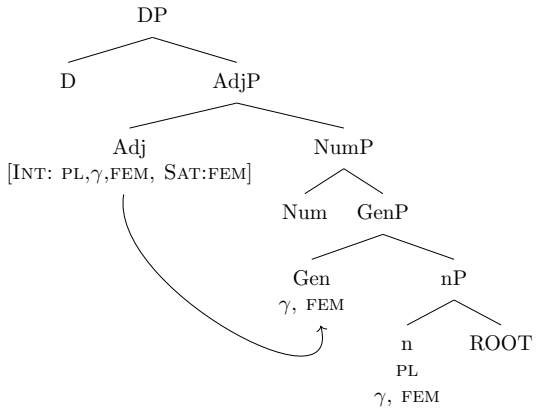
b. pyare/*pyara masəɽ aye
lovely.MPL/lovely.MSG uncle came.MPL
'The lovely uncle (honorific) came.'

We propose that feminine PoPs can show not only plural but also singular concord because the FEM feature can optionally serve as the SAT condition of the probe responsible for concord. The FEM feature on Gen that is present in feminines can optionally block access to the PL feature on n. When this access is blocked, we get singular concord, and when it is not, we get plural concord. The absence of singular concord with masculine PoPs follows from the fact that there is no FEM feature in masculines to block this access.

For now, we make the simplifying assumption that each adnominal hosts its own probe, and its morphology reflects the features copied by this probe. This assumption will be revised in the next subsection. All adnominals merge above Num in the structure. Since adnominals agree in number and gender, we take their probes to be specified as INT:PL, γ, FEM. We propose that these probes can have two possible SAT conditions: SAT:FEM and SAT:-. The two SAT conditions derive the optionality between singular and plural concord with feminine PoPs but only plural concord with masculines, as we now illustrate.

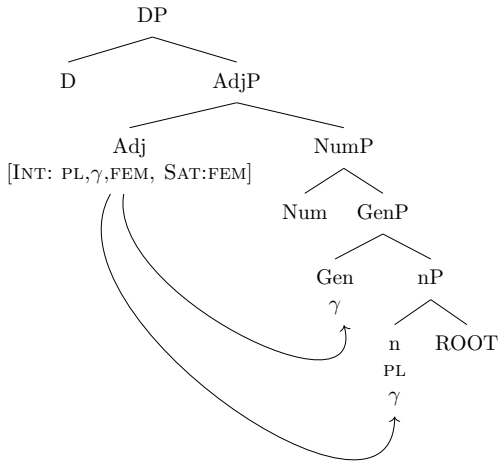
We begin by considering what happens when the probe is specified as SAT: FEM. This satisfaction condition will derive our gender asymmetry, giving us singular concord with feminine but plural concord with masculine PoPs. First consider the case of a feminine PoP. Since the probe is located above NumP, it first encounters Num, which does not host any feature. The probe therefore continues further and encounters Gen, which hosts a γ and FEM feature. It copies these features from Gen because it is specified to interact with number and gender features. However, it is not able to probe further down to n because it has already encountered its SAT feature FEM on Gen. As such, the features on n including the PL feature are not copied, resulting in singular concord.

(23) SAT:FEM : Singular concord with feminine PoPs



On the other hand, in a masculine PoP, SAT:FEM does not give singular concord because masculines lack a FEM feature. Upon encountering Gen, the probe copies the γ feature from it. However, since there is no FEM feature on Gen, the satisfaction condition of the probe is not met and probing continues further to n. The PL feature (and γ) from n is copied, resulting in plural concord.

(24) SAT:FEM : Plural concord with masculine PoPs

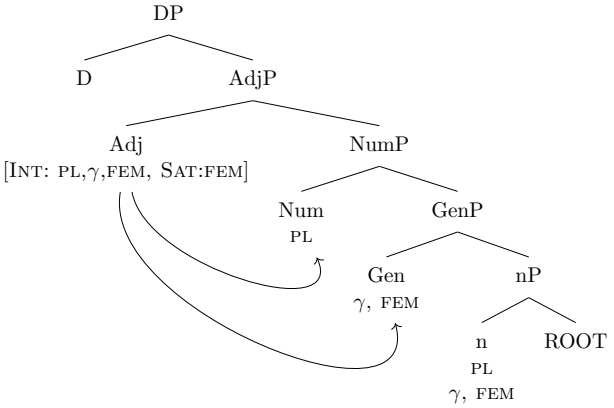


Thus, we see that the same SAT condition that generates singular concord with feminine PoPs does not generate it for masculine PoPs, accounting for the gender asymmetry.

It is also important to note that SAT: FEM does not incorrectly generate singular concord with a regular feminine plural. This is because unlike in a PoP, where there is no PL feature on Num, regular plurals do have a PL feature on Num. So, even when

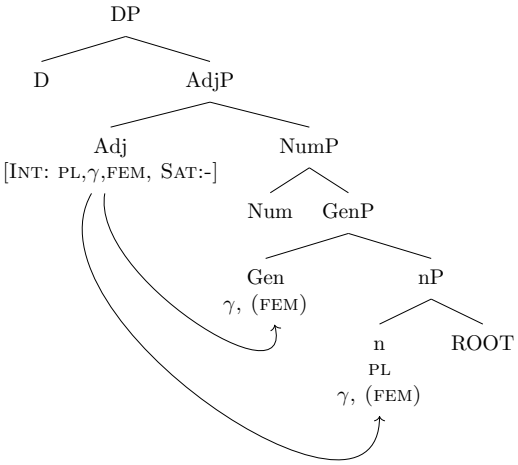
the FEM feature on Gen halts probing, the PL feature from Num still gets copied to the probe, giving us plural concord.

(25) SAT:FEM : Plural concord with a regular feminine plural



Let us now consider what happens when the probe is specified as SAT:-. This probe interacts with all heads in the structure, and copies all features present - gender feature from Gen as well as the PL and gender feature from n, resulting in plural concord. This is true for both masculine and feminine PoPs.

(26) SAT:– : Plural concord with both masculine and feminine PoPs

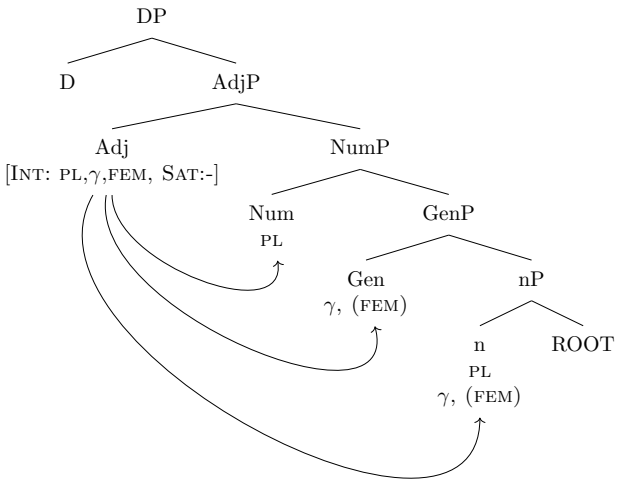


Note that, all else being equal, this derivation should give us *feminine* plural concord with feminine PoPs. Recall however that in Punjabi, feminine PoPs trigger *masculine* plural concord, i.e. the FEM feature is suppressed in plural concord with PoPs. At first glance, this FEM suppression would suggest that the gender feature is

not copied by the probe when the PoP triggers plural concord, contrary to the analysis presented here (cf. Despić 2017; Puškar-Gallien 2019). However, we show in section 5 that FEM suppression cannot be analyzed in terms of failure of gender agreement in syntax, and suggest that the source of FEM suppression is in the morphology. As such, this FEM suppression does not invalidate the analysis presented here.

Finally, in a regular plural, SAT:- also yields plural concord as expected. Here, the probe first copies the PL feature from Num. Since the probe has an empty SAT condition, it goes on to copy the gender features from Gen as well as the features from n, which includes the PL. Consequently, plural concord obtains.

(27) SAT:– : Plural concord with a regular plural



To summarize, SAT:FEM yields singular concord with feminines, but plural concord with masculines, while SAT:- yields plural concord regardless of gender. Crucially, under our approach, singular agreement is derived by having the gender feature on Gen block the probe's access to the PL feature on n. We will see that this view of singular agreement of PoPs as arising due to lack of access to a deeply embedded PL feature can also derive other constraints on the availability of singular agreement.

It is also worthwhile to highlight how our account of the Punjabi facts supports two aspects of our proposed DP structure for PoPs. First, it shows us that there must be a locus of gender above the PL feature in PoPs. We have seen that a specific value of the gender feature determines whether or not PL can be accessed. This is only possible to derive if the gender specification is encountered *before* the PL feature. Our analysis, where semantic gender feature is situated above the PL feature in a PoP, readily captures this. Second, our analysis also provides evidence that regular plurals have a high PL feature on Num, which PoPs lack. This high PL feature ensures that even when the low PL cannot be accessed, we still get plural concord with regular plurals.

Therefore, the same configurations that allowed us to generate singular concord with PoPs do not incorrectly generate singular concord with regular plurals.

3.3 Deriving uniform concord with multiple adnominals

In the previous subsection, we assumed that each adnominal has its own probe. This assumption however makes an incorrect prediction for cases where multiple adnominals are involved. Since each adnominal can be specified as SAT:FEM or SAT:-, nothing prevents us from having multiple adnominals in the same DP with different SAT conditions. As such, we expect to find freely co-occurring singular and plural concord on different adnominals in the same DP, in a feminine PoP. However, this is not borne out. We have already seen that generally, concord must be uniformly singular or uniformly plural. (The sole exception will be derived in the next subsection.)

(28) mere pyare/meri pyari/*mere pyari/*meri pyare
my.MPL lovely.MPL/my.FSG lovely.FSG/my.MPL lovely.FSG/my.FSG lovely.MPL
massi aye
aunt came.MPL
'My lovely aunt (honorific) came.'

To avoid this incorrect prediction, we propose that adnominals do not merge with their own probes. Instead, there is generally only a single probe in the DP that is responsible for concord on all adnominals. We take this probe to be located on D.

Following Norris (2012, 2014), we take concord to involve a syntactic and a postsyntactic component. In line with Norris (2012), we assume that the syntactic component involves Agree, where the D head participates in Agree and copies phi-features from DP-internal heads (e.g. Num).[1] This Agree step takes place exactly as was discussed in the previous subsection, subject to the same interaction and satisfaction conditions mentioned there. The only difference is that instead of each adnominal participating in Agree, only the D head does so.

Postsyntactically, the various adnominals that show concord trigger insertion of AGR nodes (following Noyer 1998). After the AGR node is inserted, the features from the closest head (here, D) dominating them are copied onto the AGR nodes by a Feature Copying rule (cf. Norris 2014). Since all adnominals are copying their features from the same locus postsyntactically (the D head), they necessarily show the same concord pattern as each other. To illustrate how the system works, we provide a sample derivation for a feminine PoP showing uniform singular concord as in (29).

(29) meri pyari massi aye
my.FSG lovely.FSG aunt came.MPL
'My lovely aunt (honorific) came.'

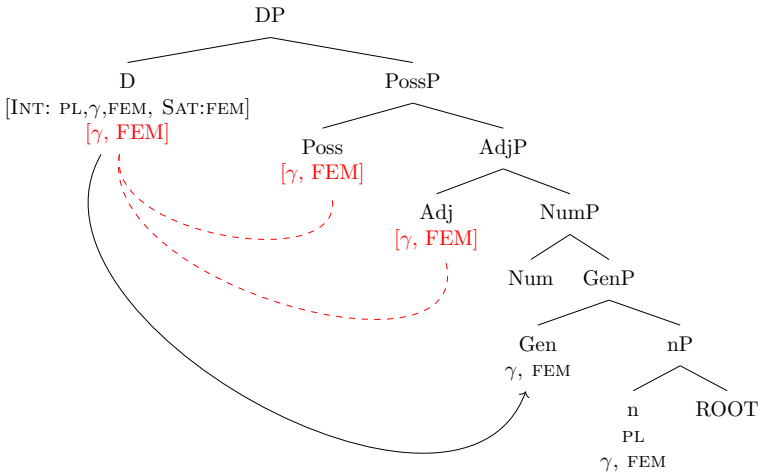
The sole probe in this DP is on D. There is no probe on the possessive or the adjective. As we saw in the previous subsection, the singular concord pattern is derived by specifying the probe as SAT: FEM. Therefore, D must be specified as SAT:FEM.

[1] For Norris (2012), the head that participates in Agree is K and not D. Nothing crucial depends on this choice.

Agree proceeds as described previously. D copies the γ and FEM features from Gen, but the copying of the FEM feature halts probing, preventing access to the PL feature on n. Consequently, D ends up with γ and FEM features. Postsyntactically, AGR nodes are inserted on all adnominals that show concord, as illustrated in the schema in (30). The features from D are copied onto these AGR nodes by Feature Copying. In this case, only γ and FEM features are copied since D does not have a PL feature. This gives us uniform feminine singular concord on all adnominals. For a representation, consider the tree in (31), where the black line indicates the Agree steps that involve the probe on D alone, based on which D ends up with γ and FEM features. On the other hand, the dotted red line indicates the step of Feature copying, where the γ and FEM features on D are copied to both the possessive and the adjective. For ease of exposition, we represent the copied features as being on the adnominal itself.

(30) Adj $\rightarrow$ [Adj AGR]

(31) A unique probe on D: deriving uniform feminine singular concord



Adopting this mechanism of concord therefore allows to capture the fact that concord is generally uniformly singular or uniformly plural. Next, we consider the exceptional case where mixed concord is possible.

3.4 Deriving mixed concord and the *SG-over-PL constraint

As was noted earlier, the adjectives vəḍḍa 'older', choṭṭa 'younger' when used with kinship nouns can occur with mismatching number concord. The relevant example is repeated below in (32).

(32) %mere vəḍḍi massi aye
my.MPL older.FSG aunt came.MPL
'My older aunt (honorific) came.'

For mixed concord to obtain, it is crucial that the adjectives vəɖɖa 'older', choʈʈa 'younger' merge below all other adnominals in the structure. Consider the example in (33a), where vəɖɖa merges below not only the possessive but also other adjectives such as 'lovely' and shows singular concord while all other adnominals occur with plural concord. On the other hand, consider (33b), where vəɖɖa merges above the adjective 'lovely'.[2] In such cases, mixed concord becomes unavailable - it is not possible for vəɖɖa (and any lower adnominal) to show singular concord while the higher adnominal shows plural concord. Only uniform concord is possible with such an order - this is illustrated with uniform plural concord in (33c).

(33) a. mere pyare vəɖɖi massi aye
my.MPL lovely.MPL older.FSG aunt came.MPL
'My lovely older aunt (honorific) came.'

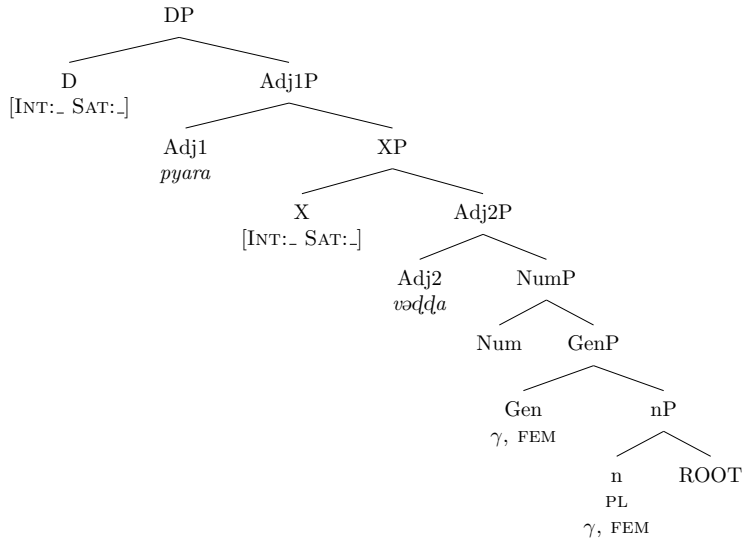
b. *mere vəɖɖi pyari massi aye
my.MPL older.FSG lovely.SG aunt came.MPL
'Intended: My lovely older aunt (honorific) came.'

c. mere vəɖɖe pyare massi aye
my.MPL older.MPL lovely.MPL aunt came.MPL
'My lovely older aunt (honorific) came.'

To account for the mixed concord seen with these adjectives, we propose that there is an additional probe in the DP located between D and Num. We remain agnostic about the exact head on which this probe is present and label it as X. Crucially, vəɖɖa 'older' and choʈʈa 'younger' may merge below X, while all other adnominals must merge above it. Mixed concord only arises when vəɖɖa 'older' and choʈʈa 'younger' merge below X.

[2]There is some variation in the acceptability of this order in that some speakers have a strong preference for merging vəɖɖa really close to the head noun. Crucially, even those speakers who allow vəɖɖa to merge higher, rule out mixed concord in such cases.

(34) Two probes for mixed concord



Recall that our Feature Copying rule ensures that the features on an adnominal reflect the feature copied by the closest head above it. As such, the features on vəḍḍa 'older' and choṯṯa 'younger' will reflect the features copied by X, while the ones on all other adnominals will reflect the features on D. With this system in place, we can derive mixed concord with vəḍḍa 'older' and choṯṯa 'younger'. Like the probe on D, the probe on X can also be specified as SAT: FEM or SAT: -. Recall that SAT: FEM leads to singular concord with feminine (but not masculine) PoPs, while SAT:- leads to plural concord with all PoPs.

Table 1 Predicted mixed concord patterns

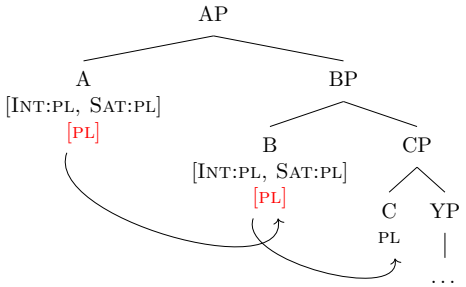
	Specification of D	Specification of X	Resulting concord in feminine PoPs
(i)	SAT: -	SAT: -	Uniform PL
(ii)	SAT: FEM	SAT: FEM	Uniform SG
(iii)	SAT: -	SAT: FEM	PL-over-SG
(iv)	SAT: FEM	SAT: -	*SG-over-PL

In principle, the system so far should allow all possible combinations of singular and plural concord on the two categories of adnominals with feminine PoPs. Three of these are in fact grammatical. These correspond to uniform singular, uniform plural, and singular concord on vəḍḍa 'older' and choṯṯa 'younger' with plural concord on higher adnominals (labeled as PL-over-SG). However, the fourth predicted pattern where vəḍḍa 'older' and choṯṯa 'younger' show plural concord, while the higher adnominals occur with singular concord, is not possible, as shown in (35).

(35) *meri vəḍḍe massi aye
my.FSG older.MPL aunt came.MPL
'Intended: My older aunt (honorific) came.'

To derive the ungrammaticality of this pattern, which we had previously referred to as the *SG-over-PL constraint, we add another piece to our assumed model of Agree. Following Puškar (2017, 2018), we claim that a probe that has acquired its features via Agree can then function as a goal for a higher probe. To see how this works, consider the representation in (36), which involves two probes A and B, both of which can show number agreement. In addition, there is a goal C with a valued number feature. Assuming a strictly bottom-up derivation, the probe B, merged first (i.e. before A) in the structure, finds C in its c-command domain and copies the number feature from this goal. Then, when A merges, it can copy the number feature from the closest source, i.e. B.

(36) Probes as goals for higher probes

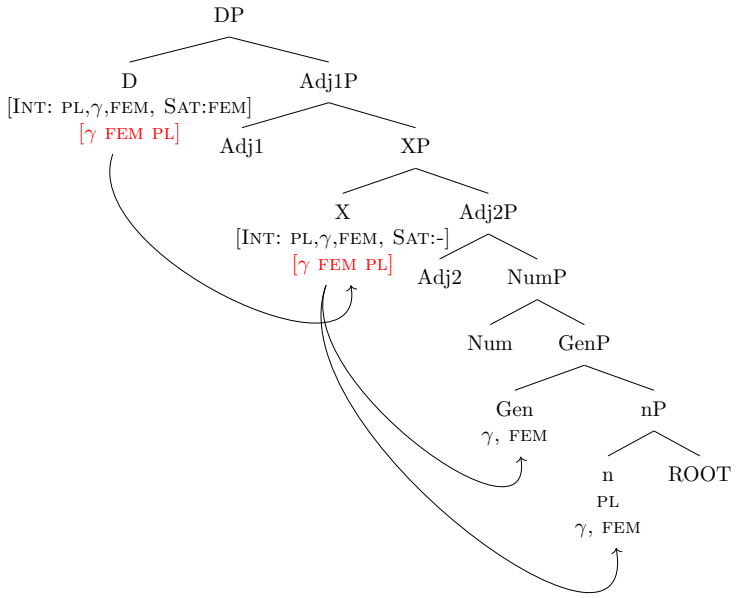


Crucially, this system requires that there is no deletion of features that are acquired by a probe via Agree. This requirement poses a challenge for the original formulation of Agree (à la Chomsky 2000, 2001), where a probe with unvalued, uninterpretable features agrees with a goal with valued and interpretable features purely to delete its uninterpretable features in the narrow syntax. However, within the Interaction-Satisfaction model of Agree as assumed in this paper, uninterpretable features do not play a role in the theory of agreement since features are copied to create redundancy and not to repair a defect in the features of the probe. Consequently, nothing in the system prevents a probe from acting sequentially as a goal for a higher probe.

We now show how this assumption, along with the rest of our system proposed above, can derive the *SG-over-PL constraint. We will see that even with the combination of satisfaction conditions given in (iv) in Table (1), the illicit SG-over-PL concord pattern will not be derived. The basic idea is that once the lower probe X has copied the PL feature from n, D can itself copy this PL feature from X without needing to access n. Consider the derivation in (37), with a feminine PoP, where X is specified as SAT:-, while D is specified as SAT:FEM. First, X probes. Since it is specified as SAT:-, it is able to probe all the way down to n since its satisfaction condition is not met at Gen. As such, it ends up with γ and FEM features from Gen and all features from n including the PL feature. Now, when D merges and probes, it first encounters the features on X. D is specified as SAT: FEM, which prevents it from probing beyond X since X already has FEM. Crucially however, X also has the PL feature. As such, D

is able to copy this PL feature from X itself, without needing to access little n. This means that even the combination of satisfaction conditions on D and X that we might have expected to generate the *SG-over-PL pattern does not do so.

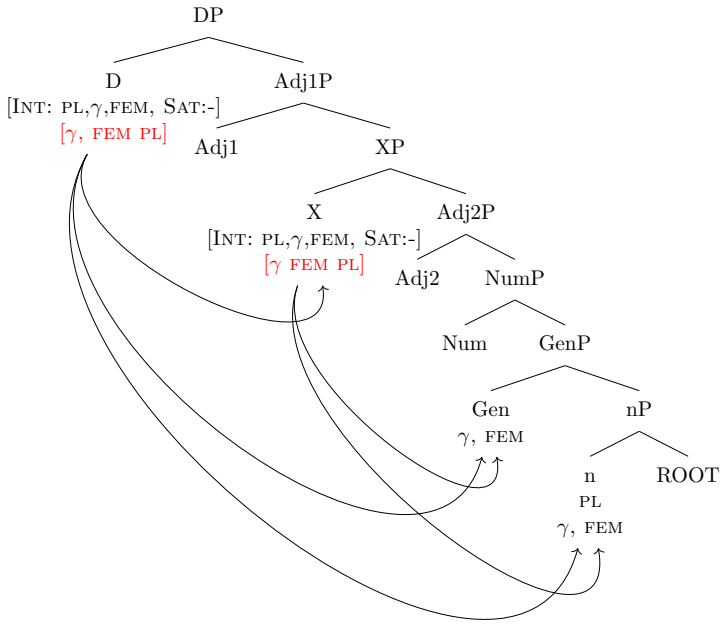
(37) Ruling out SG-over-PL



For completeness, we show that the other three combinations of satisfaction conditions in (i)-(iii) in Table (1) continue to derive the expected patterns with feminine PoPs, even with the assumption that a probe can later act as a goal.

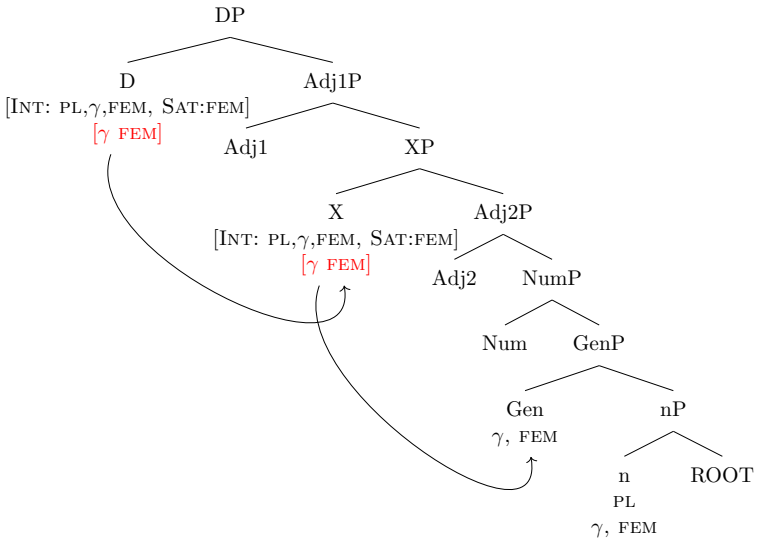
First, consider (i) where both X and D are specified as SAT:-. First, X probes all the way down to n and ends up with both gender (γ, FEM) and and PL features. This behaviour is paralleled by D, which is also able to probe all the way down to n since it has an empty SAT condition and ends up with gender and PL features. Since D and X have both copied PL, this results in uniform plural concord on all adnominals.

(38) Uniform plural concord



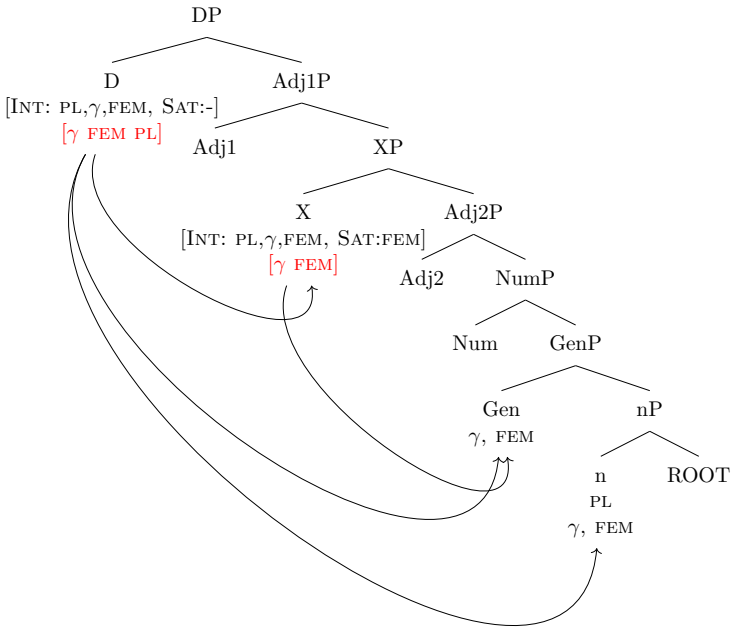
Next, take (ii), where both X and D are specified as SAT: FEM. X, which probes first, copies the γ and FEM features from Gen. However, it fails to copy PL from n since it is satisfied by the FEM feature at Gen. Then, D, which is also specified as SAT: FEM, copies the γ and FEM features from X but then halts probing because its satisfaction condition has been met. This leads to D not having a PL feature either. Since neither D nor X have a PL feature, we get uniform singular concord on all adnominals.

(39) Uniform singular concord



Finally, consider (iii), where X is specified as SAT: FEM and D is specified as SAT:-. Once again, X copies γ and FEM features from Gen, but no PL from n. When D probes, it copies γ and FEM from X, but crucially, is able to continue probing since its satisfaction condition is empty. As such, it searches all the way down to n, accessing the PL feature. In this scenario, X does not have a PL feature, leading to singular concord on the lower adnominals vəḍḍa 'older' and choṭṭa 'younger'. On the other hand, since D does have a PL feature, all the remaining higher adnominals show plural concord. This derives the grammatical mixed concord pattern with PL-over-SG.

(40) Deriving the grammatical PL-over-SG

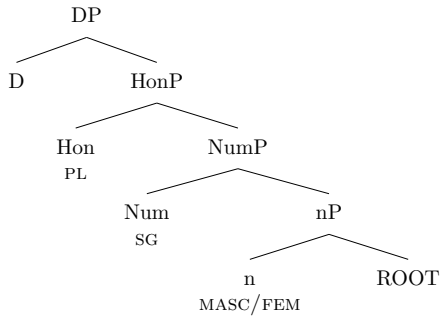


By positing an additional probe in the DP on X and allowing probes to act as goals, we have derived the grammatical uniform and mixed concord patterns seen with Punjabi feminine PoPs, while ruling out the ungrammatical *SG-over-PL one.

3.5 Comparison to previous approaches

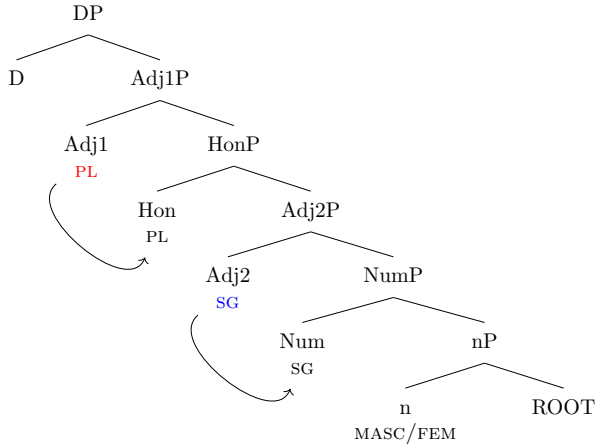
Concord with nominal PoPs in Punjabi has received some attention in the previous literature (Kaur TA; Sinha TA). We compare our proposal with these accounts in this section. Both Kaur (TA) and Sinha (TA) assume a structure for a PoP which makes use of a dedicated Hon head. This head introduces the PL feature, and takes as its complement, a NumP with a SG feature. The relevant structure is shown below.

(41) Structure of PoP according to Kaur (TA) and Sinha (TA)



In these approaches, whether or not an adnominal shows singular or plural agreement has to do with its merge site within the DP. Adnominals that merge below Hon value their number feature from the Num head and show singular concord, while those that merge above Hon value their number feature from Hon and show plural concord. These accounts can therefore derive both singular and plural concord. They can also derive the *SG-over-PL constraint, since in their account, an adnominal showing plural concord (Adj1) must merge above Hon, and consequently must merge above any adnominal showing singular concord (Adj2). This is represented in the structure below.

(42) Mixed concord in Kaur (TA) and Sinha (TA)



However, these accounts cannot easily account for a number of other facts. First, there is no straightforward way to derive the gender asymmetry (*MASC-SG) under these accounts. Specifically, if an adnominal can merge below Hon in a feminine PoP and show singular concord, it is not obvious why a masculine PoP cannot do so. Kaur (TA) and Sinha (TA) offer different explanations for this ban. Kaur (TA) proposes that masculine PoPs have a distinct syntax from feminine ones in that unlike feminine PoPs, which embed a singular NumP, masculine PoPs embed a plural NumP. As such, even adnominals that merge below Hon show plural concord with them.[3]

[3]Kaur's story is more complicated because in it, there is an exceptional class of masculine nouns which are supposed to have a syntax like that of feminines with a singular NumP, but still disallow singular concord

On the other hand, Sinha (TA) attempts to account for the asymmetry morphologically. According to him, the masculine plural affix in Punjabi does not realize the PL feature acquired via Agree, but rather, is sensitive to the presence of a PL feature anywhere in the DP. As such, even an adnominal located below Hon that has not acquired the PL feature via Agree shows masculine plural morphology due to the presence of a PL feature somewhere in the DP. He conceives of this sensitivity to PL as a kind of allomorphy, but admits that this allomorphy is far more non-local than most theories of allomorphy allow for.

We believe that both assumptions - Kaur's non-uniform syntax for masculine vs. feminine PoPs and Sinha's non-local allomorphy - are not unproblematic. However, even if we set these problems aside, there is a bigger problem with these accounts, which is that they cannot be extended to the DP-external domain. In contrast, as we will show in the next section, the current analysis can be extended to the DP-external domain straightforwardly.

The key issue with Kaur (TA) and Sinha (TA) is that in these accounts any agreement target that merges above Hon must show plural agreement. This must necessarily be the case for any DP-external probe. As such, they predict singular agreement to be impossible with a PoP outside the DP. While this is true of Punjabi, the language they examine, it is not true cross-linguistically. In varieties of Czech, a nominal PoP can trigger singular agreement on the (DP-external) predicative adjective, as shown in (43). The example in (43) is provided by Bělič (1972) from the speech of older speakers of a variety of Czech spoken near Slavkov u Brna.

(43) Naší stařenka só hodná
our.FSG grandmother.SG AUX.3PL nice.FSG
'Our grandmother (honorific) is nice.' (Bělič 1972, as cited in Houtzagers 2018, pg. 14)

Similar patterns of DP-external singular agreement are found with pronominal PoPs as seen previously in section 1. An example from French, where the predicative adjective shows singular agreement, is shown below.

(44) vous êtes allé/#allés au marché
2PL AUX.2PL gone.MSG/gone.PL to market
'You (singular honorific) have gone to the market.' (Prudence de Pontbriand, p.c.)

Since the switch between singular and plural agreement happens outside the DP, between the predicative adjective/participle and the auxiliary, the only possibility for the Kaur (TA) and Sinha (TA) approach would be to merge the Hon head between the predicative adjective/participle and the auxiliary. However, such a move is mistaken. Honorification is a property of an individual DP rather than of the clause as a whole. If it were a property of the clause as a whole, we would expect to see this DP-external Hon head and associated plural agreement any time there was a PoP in the clause. However, plural agreement on the auxiliary only occurs when the PoP is located in

for independent reasons. This complication has to do with the morphology of those nouns and discussing it would take us too far off course from our main focus, which is the agreement pattern of PoPs.

positions where the auxiliary can agree with it (i.e., in the subject position). If the PoP is in a non-agreeing position, such as in the object position or in the specifier of the subject, there is no plural agreement on the auxiliary (as long as the subject itself is not plural).

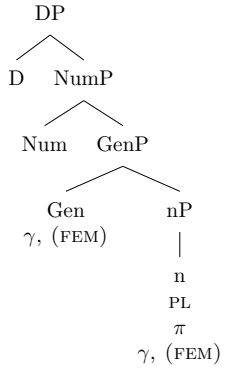
(45) votre fils est/*sont/*êtes allé au marché
2PL.GEN son AUX.3SG/3PL/2PL gone.MSG to market
'Your (honorific addressee) son has gone to the market.' (Prudence de Pontbriand, p.c.)

This means that putting Hon outside the DP is not a viable move. Consequently, there is no way for the accounts by Kaur (TA) and Sinha (TA) to be extended to derive singular and plural agreement outside the DP. Their scope is therefore limited to languages where PoPs only trigger plural agreement DP-externally.

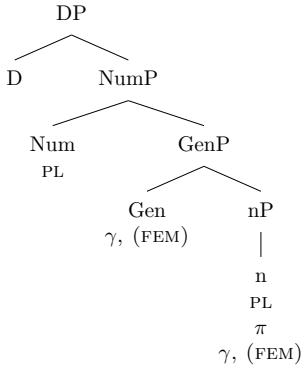
4 DP-external agreement with PoPs

We will now show that unlike these previous accounts, our analysis of concord with nominal PoPs from the previous section extends to DP-external agreement with both nominal and pronominal PoPs. For this extension, we briefly elaborate on our assumed structure of pronouns. Following Panagiotidis (2002) and Patel-Grosz and Grosz (2017), we take pronouns to have the same functional structure as nouns. This means that both nouns and pronouns have n, Gen and Num heads. However, they vary with regard to the presence of a lexical root, which is present in nouns alone. As with nouns, we assume that there are two possible loci for the PL feature in the pronoun: (i) one on n, which is found in both PoPs and regular plurals, and (ii) one on Num, which is strictly associated with semantic plurality and found on regular plurals only. Likewise, the gender feature is present in two structural positions - the Gen head and n. Finally, we propose that person features (represented as π) are introduced on n, which is in line with claims by Harbour (2016) and Ackema and Neeleman (2018) that person is introduced low in the structure. The relevant structures for a pronominal PoP and a regular plural pronoun are provided below.

(46) Plural-of-politeness (pronoun)



(47) Regular plural (pronoun)



With this structure in place, we are now ready to derive patterns of DP-external agreement with nominal and pronominal PoPs. Recall that in languages like BCS, all DP-external probes show plural agreement (see 48) while in languages such as Czech, some DP-external probes show singular agreement (see 49). Furthermore, there are also languages like Bulgarian, where a DP-external probe can exhibit optionality between plural and singular agreement, as shown in (50).

(48) Vi ste bil-i pospan-i
2PL AUX.2PL been-MPL sleepy-MPL
'You (plural)/you (singular honorific) were sleepy.' (Puškar-Gallien 2019, pg. 4)

(49) Vy jste byl-a dobr-á
2PL AUX.2PL been-FSG good-FSG
'You (singular honorific) were good.' (Comrie 1975, pg. 408)

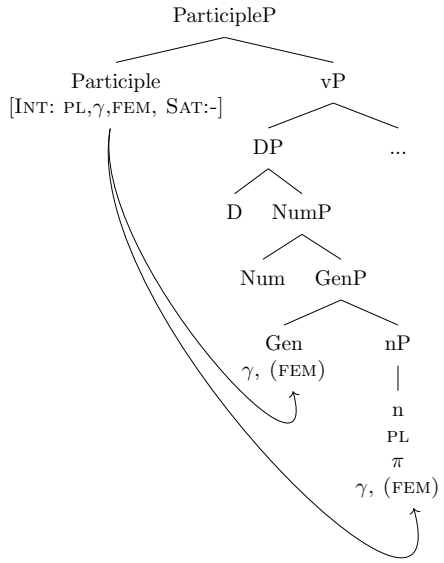
(50) Vie ste bil-i/bil-a umoren-a
2PL AUX.2PL been-PL/been-FSG tired-FSG
'You (singular honorific) were tired.' (Puškar-Gallien 2019, pg. 4)

Therefore, we have to allow for the possibility of a DP-external probe showing singular or plural agreement. Like with DP-internal concord, we derive singular and plural DP-external agreement with PoPs by varying the access of the probe to the PL on n. However, we need to make an assumption to handle the specifics of DP-external agreement: we assume that DP-external probes are able to look inside the DP for agreement. Since this departs from the standard assumption in the literature about Agree, we provide our reasoning for this departure.

The standard view in the literature is that DP-external probes are unable to look inside the DP (Danon 2011, among others). According to this view, DP-external probes must copy the features from the top of the DP, where all features from inside the DP are first collected. This view effectively gives us only two options for PoPs. Either, the PL feature on n in PoPs is able to make its way to the top of the DP, or it is not able to do so. In the former case, all DP-external probes will see the PL feature on the DP and copy it, resulting in plural agreement on all probes. In the latter case, where there is no PL feature on top of the DP, no DP-external probe will be able to copy the PL feature, resulting in singular agreement on all probes. Crucially, such a system will not be able to derive co-occurring singular and plural DP-external agreement, which is a well-attested pattern, and was illustrated with the Czech and Bulgarian examples in (49) and (50) respectively. Therefore, we do not adopt this standard view, and instead allow DP-external probes to look inside the DP.

As before, we say that whether a probe shows singular or plural agreement with a PoP is a consequence of its SAT specification. Plural agreement arises when a probe is specified as SAT:-. Since there is no PL feature on Num in a PoP, such a probe continues probing all the way down to n. It then copies the PL feature on n, and this results in plural agreement. This is illustrated for a participial probe below.

(51) SAT:– : Plural agreement with a DP-external probe



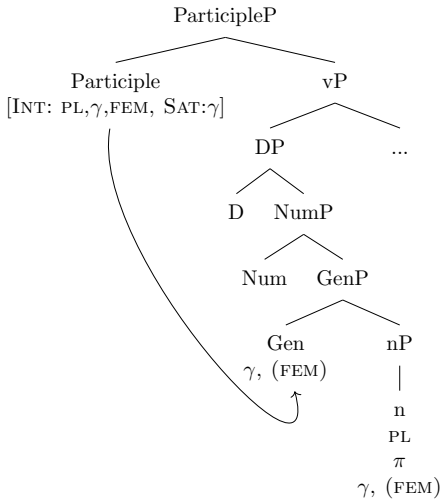
On the other hand, singular agreement arises when the probe has a SAT condition that prevents access to the PL on n. To derive singular concord in Punjabi, we had posited that the relevant probes were specified as SAT: FEM. This was because in that language, singular concord was only possible with feminines. However, in the other languages under discussion, singular agreement is possible across gender specifications. For example, in French, both masculine and feminine PoPs can trigger singular agreement on the participle, as shown in (52).

(52) a. Vous êtes mort dans un accident
2pl aux.2pl dead.msg in an accident
'You (singular honorific male) died in an accident.'

b. Vous êtes morte dans un accident
2pl aux.2pl dead.fsg in an accident
'You (singular honorific female) died in an accident.' (Prudence de Pontbriand, p.c.)

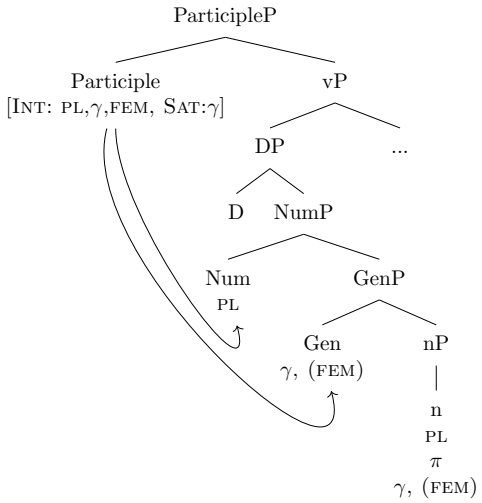
We take this to mean that any gender feature can prevent access to n in these languages. To capture this fact, we claim that the probes that show singular agreement (without regard to gender) are specified as SAT: γ. Such a probe will stop probing once it encounters the feature γ. Since it is unable to access PL on n, it shows singular agreement.

(53) SAT:γ : Singular agreement with a DP-external probe



In a regular plural too, access to n is prohibited for such a probe, but this does not prevent plural agreement since Num (above Gen) has PL.

(54) Plural agreement in regular plurals despite SAT: γ



Our account can therefore derive both singular and plural agreement DP-externally. Like with the DP-internal domain, the distribution of singular and plural agreement is not unconstrained in the DP-external domain either. We now turn our attention to deriving two specific constraints on the distribution of singular and plural agreement DP-externally.

4.1 Deriving *Person-SG constraint

It is well-known from the literature that finite verbs must always show plural agreement when they agree with a PoP (see Comrie 1975; Corbett 1983; Wechsler and Hahm 2011; Puškar-Gallien 2019 for cross-linguistic surveys). Singular agreement on the finite verb in such cases results in ungrammaticality, as shown in (55) from French.

(55) Vous êtes/*es morte dans un accident
2PL AUX.2PL/AUX.2SG dead.FSG in an accident
'You (singular honorific) died in an accident.'

In older literature, the aforementioned obligatory plural agreement on finite verbs was associated with their place in the Predicate Hierarchy, which is shown in (56) (Comrie 1975). The key idea is that agreement options for a predicate are constrained by its place in a hierarchy. As we move rightwards along the Predicate Hierarchy, the likelihood of singular agreement with a PoP increases monotonically. Thus, finite verbs are simply more likely to show plural agreement than other predicates.

(56) finite verb > participle > adjective > noun

While this approach captured the facts, it did not provide an explanation. In more recent work, the requirement of finite verbs to show plural agreement with PoPs has received a more principled account. In specific, Wechsler (2011) argues that the requirement of finite verbs to show plural agreement with PoPs must be correlated with the presence of person agreement on these predicates. The idea is that a probe showing person agreement must show plural agreement with a PoP. Thus, the French finite verb, which is a person-agreeing probe, must show plural agreement when it agrees with a PoP, (55). We label this restriction as the *Person-SG constraint because it rules out singular agreement with a PoP when there is accompanying person agreement.

It is crucial to note that there are languages where the finite verb does not agree in person. Consider the examples in (57) from Gbaya (Niger-Congo), where the verb inflects for number alone. When the verb (a minus-person probe) agrees with a PoP, it shows singular agreement, as illustrated in (58). However, this is not a problem for the *Person-SG constraint since it applies only to probes that agree in person.

(57) a. am ɔ´ gére
1SG AUX.SG alright
'I am alright.'

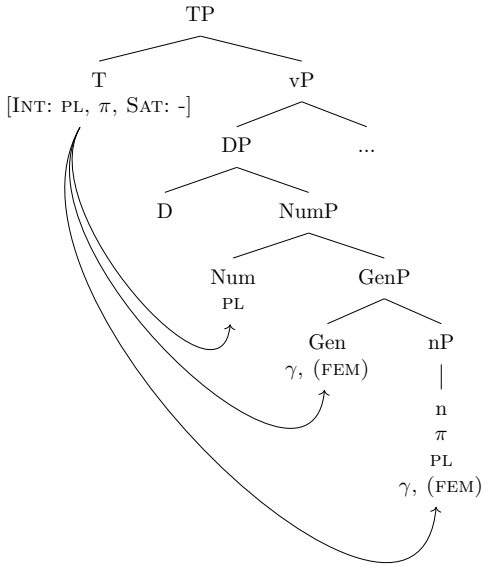
b. ɛrɛ yá gére
1PL AUX.PL alright
'We are alright.' (Samarin 1966, as cited in Wechsler 2011, pg. 1004)

(58) wi ɔ´ gére wéndé?
2PL AUX.SG alright QU
'Are you (singular honorific) alright?' (Samarin 1966, as cited in Wechsler 2011, pg. 1004)

The *Person-SG constraint, which bans singular agreement on agreement targets that agree in person with a PoP, is straightforwardly derivable in our system. Given

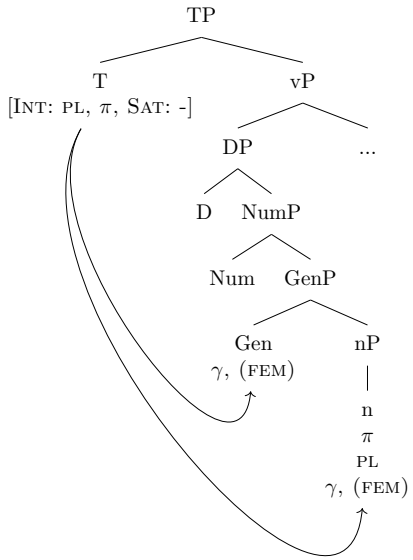
our structure of PoPs, where person and PL are located on the same head (n), it is not possible to access person features without also accessing the PL feature on n. As such, a person-agreeing probe cannot be specified as SAT: γ. If it were, it would stop probing at Gen and fail to show person agreement with any pronoun (regular or PoP). Therefore, we propose that the SAT specification of a person-agreeing probe must be SAT:-. This specification will allow the probe to access person in all pronouns, regular and PoPs. The tree in (59) provides the derivation of person agreement for a regular plural.

(59) Person and plural agreement in a regular plural



In (60), we show how person agreement obtains in a PoP. Since in a PoP, PL is located along with person on n, the probe will copy the PL feature too. This will necessarily give us PL agreement with person, deriving the *Person-SG constraint.

(60) Person and plural agreement in a PoP



4.2 Deriving *SG-over-PL constraint

*SG-over-PL constraint, discussed earlier for DP-internal agreement in Punjabi, also holds for DP-external agreement. In particular, we do not find configurations where a DP-external probe that is lower in the structure shows plural agreement, while one that is higher shows singular agreement.

The most telling illustration of this fact comes from predicate agreement in some Polish dialects. Comrie (1975), citing Makarski (1973), observes that in certain Polish dialects spoken in southeastern Poland (Rzeszowszczyzna podgórska), both adjectives and participial verbs can show singular or plural agreement with PoPs. As shown in (61), both the participle (glossed be.PART) and the adjective ('ill') can be singular or plural. (The person-agreeing auxiliary which is cliticized to the pronoun is always PL as expected.)

(61) Wy=scie byli chorzy/byla chora
2PL-AUX.2PL be.PART.PL ill.PL/be.SG ill.SG
'You (singular honorific) were ill.' (Comrie 1975, pg. 407)

However, there are restrictions on the possibility of singular and plural agreement when the adjective and the participle co-occur. As (61) shows, uniform singular or uniform plural agreement is possible. It is also possible for the adjective, which is lower in the structure, to show singular agreement while the participle, which is higher in the structure, shows plural agreement. This is shown in (62).

(62) Wy=scie byli chora
2PL-AUX.2PL be.PART.PL ill.SG
'You (singular honorific) were ill.' (Comrie 1975, pg. 407)

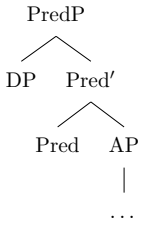
However, it is not possible to have the reverse configuration where the adjective shows plural agreement and the participle shows singular agreement, as shown in (63).

(63) *Wy=scie byla chorzy
2PL-AUX.2PL be.SG ill.PL
Intended: 'You (singular honorific) were ill.' (Comrie 1975, pg. 407)

The ungrammaticality of (63) is a clear example of the *SG-over-PL constraint. This DP-external instance of *SG-over-PL constraint can be derived in the same way like the DP-internal one: by proposing that features copied by the lower probe can serve as the goals for higher probes. Thus, when the probe on the adjective has copied the PL feature, the one on the participle (the higher probe) gets the PL feature even when it is specified as SAT: γ and cannot access the PL on n.

We assume that adjectival predicates are formed via a head Pred which takes an AP as its complement and the subject-DP in its specifier, as represented in (64). The Pred head hosts the probe.

(64) Structure of a predicative adjective

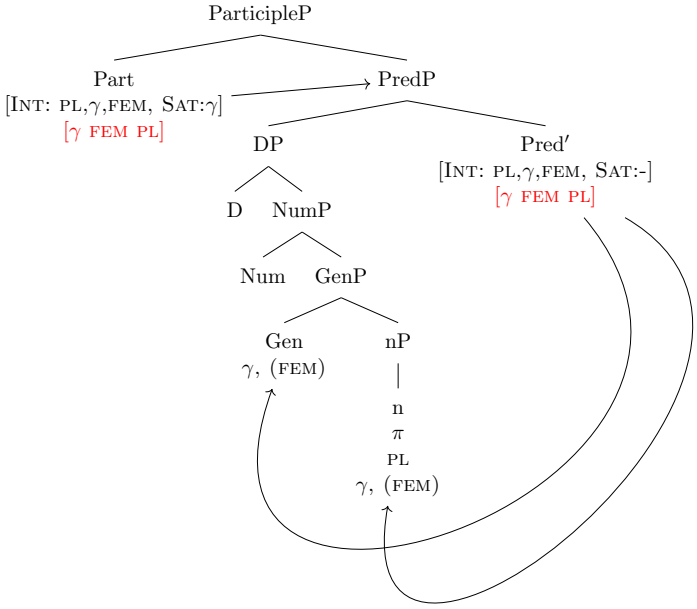


Using Cyclic Agree (e.g. Béjar and Rezac 2009), agreement between the probe and DP can be derived in a straightforward way. The probe on Pred first probes its c-command domain. However, it does not encounter any goal in this agreement cycle since the only DP in the structure is higher than the probe. The probe reprojects, which results in a probe on the intermediate-level projection, i.e. Pred′. The new c-command domain of the probe contains the specifier, which can now be a goal for Agree. The features copied by Pred′ are projected to PredP.

The probe associated with the participial 'be' is located on a Participle head, which lies above PredP. We maintain the assumption from Puškar (2018) that a lower probe can function as a goal for a higher probe. This allows Part to copy valued phi-features from the top node of PredP itself, before it probes the structure of the DP in the specifier of PredP. With this mechanism in place, the ungrammatical SG-over-PL configuration is never generated. To see this, let us consider the combination of SAT conditions on the two probes that could give rise to the SG-over-PL configuration. This corresponds to SAT: γ on Part and SAT:- on Pred′. Note that both probes have the same INT conditions, i.e. PL, γ since both probes show agreement in number and gender. In the presence of SAT:- on Pred′, it copies all features within the structure

of the DP including the gender feature(s) from Gen and the PL feature from n. This results in plural agreement on the predicative adjective. When Part probes, it first encounters the top node of PredP, which hosts PL and gender features. Both of these features are copied onto Part since they correspond to its INT specification. Part does not search further since its SAT condition, γ, has already been met. Therefore, we rule out *SG-over-PL in the DP-external domain exactly as we did it in the DP-internal one. We provide this derivation in (65).

(65) Ruling out SG-over-PL



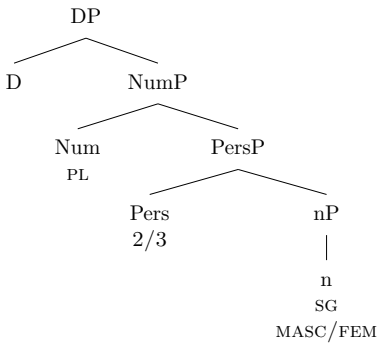
To summarize, this section has demonstrated that our Interaction-Satisfaction based approach can derive DP-external agreement with PoPs. More crucially, we have also derived all constraints on the distribution of singular and plural agreement with PoPs found DP-externally. In specific, we extended our account of the DP-internal *SG-over-PL constraint to also explain the DP-external occurrence of the *SG-over-PL constraint. Furthermore, we accounted for the *Person-SG constraint by capitalizing on the shared structural locus of person and PL features (on n) in our proposed structure of PoPs.

4.3 Comparison with previous approaches

DP-external agreement with PoPs has received a significant amount of attention in the literature. Existing accounts can broadly be categorised into two groups: (i) configurational accounts (Puškar-Gallien 2019) and (ii) non-configurational feature-typing based accounts (Wechsler 2011; Wechsler and Hahm 2011; Despić 2017). Like our account, all these accounts are able to derive singular vs. plural agreement with PoPs. However, our account has a crucial advantage over the existing accounts - it can derive the *SG-over-PL constraint, which, as we show below, none of these accounts can derive.

A configurational account, which like our account, also relies on varying the search domain of the probe to derive agreement with PoPs comes from Puškar-Gallien (2019). Puškar-Gallien (2019) proposes that a PoP contains two sets of features, which are organized hierarchically - there is a PL feature on Num in addition to a SG and a gender feature lower in the structure on n. Person is located between Num and n. This is represented in (66).

(66) Structure of a PoP according to Puškar-Gallien (2019)



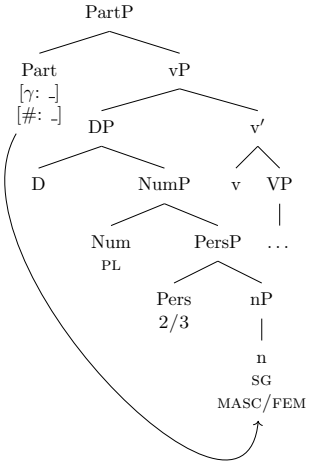
In the agreement mechanism proposed in Puškar-Gallien (2019), agreement for different phi-features (number, gender and person) on a probe is not a single operation. Instead, probing for each phi-feature takes place individually by means of independent Agree operations. These Agree operations apply in a certain order, which may be parameterized across languages. Furthermore, Agree operations from the same head can interact with each other, such that one operation creates a locality domain within which the following operation must apply. In specific, Puškar-Gallien (2019) proposes the following Condition on Agree Domains, as given in (67).

(67) Condition on Agree Domains (CAD): After an Agree operation X, triggered by a probe P from a syntactic head H, has targeted a goal G, any subsequent Agree operation Y, triggered by a probe Q on H cannot target any constituents c-commanded by G.

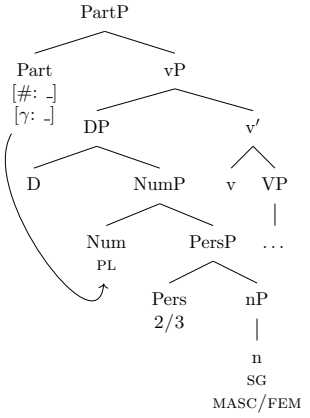
Given the structure of PoPs in (66), the aforementioned agreement mechanism derives variation in singular and plural agreement with PoPs. Singular agreement on a probe is the result of ordering Gender Agree before Number Agree, while plural agreement results from Number Agree preceding Gender Agree. Consider the derivation

for singular agreement on a participial probe, as shown in (68). The participial head (Part) has two agreement probes: Number (#) and Gender (γ). Probing for gender takes place first. The gender feature in a PoP is located on n, which is copied onto the gender probe. Since n also hosts a SG feature, Puškar-Gallien (2019) claims that this number feature is also copied on the probe. There is no separate probing for number since the number probe is valued by the SG feature copied in the first Agree operation. By contrast, plural agreement obtains when Number Agree takes place first. PoPs host two instances of the number feature. The higher of the two, i.e. PL on Num, is copied onto the Number probe. When the gender probe undergoes agreement in the next Agree operation, it cannot access n since the first Agree operation, which targeted Num, prevents access to the PoP structure c-commanded by Num. This is shown in (69).

(68) γ before #: Singular agreement



(69) # before γ: Plural agreement

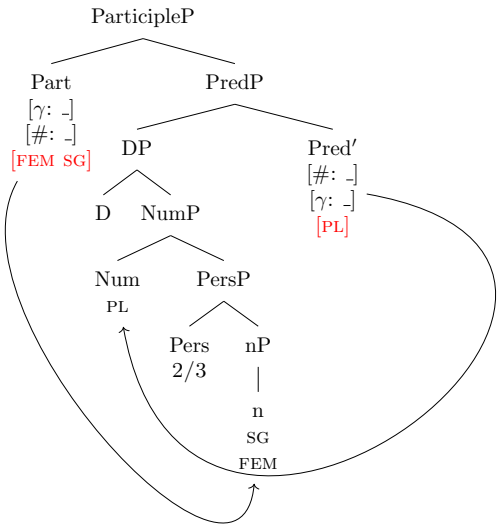


Thus, by employing (i) ordering of Agree operations, and (ii) a locality domain for agreement as determined by CAD, Puškar-Gallien (2019) is able to derive singular and plural agreement with PoPs. However, the *SG-over-PL constraint constitutes a challenge for this approach. In specific, the account by Puškar-Gallien (2019) generates the ungrammatical SG-over-PL combination.

Let us assume two agreement targets in the clausal spine, a higher Part head and a lower Pred head, both of which Agree independently. Given the agreement mechanism of Puškar-Gallien (2019), plural agreement on a target obtains when number Agree precedes gender Agree. Thus, when Pred is specified to undergo number Agree first, it copies the PL feature from Num. There is no further gender Agree since CAD blocks access to n, which hosts the gender feature. Consequently, Pred ends up with plural agreement. For singular agreement, gender Agree must occur before number Agree. Thus, Part undergoes gender Agree first. It searches all the way down to n and copies

the gender as well as the SG feature. Consequently, Part ends up showing singular agreement, which results in the ungrammatical SG-over-PL pattern. Note that this ungrammatical structure will be generated even if the higher target (here, Part) could use the lower of the two targets (here, Pred) as a source of phi-features (in line with Puškar 2018). This is because Pred ends up with a PL feature, but no gender feature. Thus, when Part undergoes gender Agree, there is no intervention by Pred, allowing Part to access n, which will, incorrectly, yield singular agreement on Part.

(70) Failure to rule out SG-over-PL



The other existing approach that can derive singular and plural agreement with PoPs is the feature-typing approach. Within this account, a PoP has two types of features, and probes can be specified to target either type of feature, resulting in different kinds of agreement. To illustrate this approach, we use Despić (2017) as an example (see also Wechsler 2011; Wechsler and Hahm 2011). Under this approach, these two types of features are formal features (which track a DP's form) and semantic features (which track its meaning). PoPs therefore have two number features in Despić's system - a formal PL feature and a semantic SG feature. Probes that target formal features show plural agreement, while those that target semantic features show singular agreement.

Like Puškar-Gallien, this account is also unable to derive the ban on SG-over-PL agreement (*SG-over-PL constraint). Under Despić's proposal, the derivation of this constraint requires that a higher probe should not be able to agree with semantic features in the presence of a lower probe that agrees with formal features. However, there is no mechanism in this account that regulates the feature-type of an agreement

target based on its relative position vis-à-vis other agreement targets in the clause. The same problem also arises with other approaches that account for singular vs. plural agreement with PoPs by varying the featural type that a probe is specified to copy.

Thus, none of the existing accounts are able to derive the entirety of the agreement patterns seen with PoPs, along with the constraints these patterns are subject to.

5 A remaining issue: FEM suppression

One issue that our analysis does not deal with is the fact that in many languages, when feminine PoPs trigger plural agreement, they end up triggering *masculine* plural agreement, even if the language has dedicated feminine plural morphology. We can refer to this phenomenon as FEM suppression. FEM suppression is fairly common and occurs in several languages (see Despić 2017 and Puškar-Gallien 2019 for examples). A Punjabi example illustrating FEM suppression is shown below.

The language has dedicated feminine plural morphology that is distinct from masculine plural morphology, and appears with regular feminine plurals.

(71) meriã/*mere massiã ayiã/*aye
my.FPL/my.MPL aunt.PL came.FPL/my.MPL
'My aunts came.'

Yet, when feminine PoPs trigger plural agreement, they trigger masculine plural and not feminine plural agreement.

(72) mere/*meriã massi aye/*ayiã
my.MPL/my.FPL aunt came.MPL/came.FPL
'My aunt (honorific) came.'

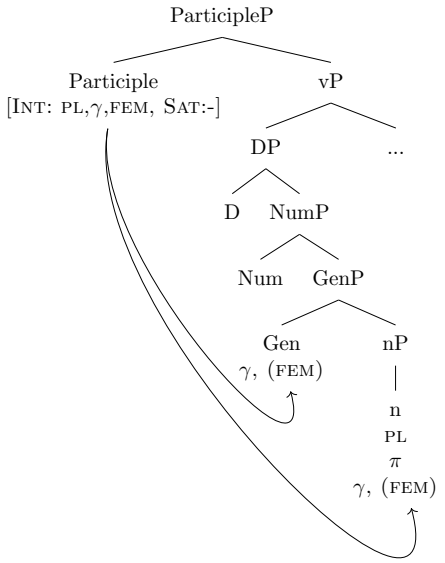
Note that the suppression of the feminine feature is only limited to contexts where PoPs trigger plural agreement. In the very same languages, where PoPs trigger singular agreement, we get feminine singular agreement with feminine PoPs. This can be seen in the adnominal in the Punjabi sentence below.

(73) meri/*mera massi aye
my.FSG/my.MSG aunt came.PL
'My aunt (honorific) came.'

Previous work (Despić 2017, Puškar-Gallien 2019) has analyzed this FEM suppression in terms of failure of gender agreement. While their implementations differ, these previous approaches make it such that a probe that copies the PL feature from a PoP is unable to simultaneously also copy the gender feature from it. With the assumption that the masculine plural agreement morphology is simply the gender-neutral (default) plural morphology when no FEM feature is copied, these approaches are able to derive the masculine plural agreement triggered by feminine PoPs.

Under our analysis however, there is no failure of gender agreement. Consider once again our derivation of plural agreement with PoPs. The relevant tree for a DP-external participial probe is repeated below, but the same state of affairs holds for all probes.

(74) Co-occurring gender and PL agreement with a PoP



As we can see, both the PL feature and a gender feature of a PoP are copied simultaneously. As such, the FEM suppression seen in languages like Punjabi is puzzling, and might appear to be a point against our analysis, and in favor of analyses like those of Despić (2017) and Puškar-Gallien (2019), which are able to derive this FEM suppression. However, we demonstrate that our account is correct by providing empirical arguments against the view that the PL feature and a gender feature cannot simultaneously be copied from a PoP.

First, there are languages like Hindi and Marathi where there is no FEM suppression with plural agreement with PoPs. As the Marathi example below shows, a feminine PoP shows feminine plural agreement.

(75) majhya/*majhe ajji alya/*ale
my.FPL/my.MPL grandmother came.FPL/came.MPL
'My grandmother (honorific) came.'

This means that gender agreement takes place in languages like Marathi and Hindi, even in cases where a PoP triggers plural agreement. An account that completely rules out this possibility is therefore on the wrong track, and we need a system which can account for languages with *and* without FEM suppression.

More strikingly, there is evidence that even in languages with FEM suppression, gender agreement still takes place. The language that shows us evidence of this is (older) Gujarati, as described in Cardona (1965) and Tisdall (1892). In this language, regular (non-PoP) feminine plurals trigger number-neutralized feminine agreement, while masculine plurals have their own dedicated agreement, as shown below.

(76) peli copɖio koni che
these.F book(F).PL whose.F be.3
'Whose books are these?'(Cardona 1965, pg. 75)

(77) mara chokra tyã bɛʈhela che
my.MPL son.PL there seated.MPL be.3
'My boys are seated there.' (Cardona 1965, pg. 75)

Besides this, the language has a dedicated neuter gender, and neuters have their own dedicated plural agreement. This is shown in the example below. Note that here, verb agreement is with the neuter plural object ('fruits') because the subject is ergative.[4]

(78) mɛ bajarmã tajã phəl̩ khəridyã
I.ERG market.LOC fresh.NPL fruit(N).PL bought.NPL
'I bought fresh fruits in the market.' (Cardona 1965, pg. 75)

When we come to PoPs, we find a different kind of FEM suppression: feminine PoPs in Gujarati trigger neuter plural agreement, instead of (number-neutral) feminine agreement.

(79) marã ma mandã pəɖyã
my.NPL mother ill.NPL fell.NPL
'My mother (honorific) fell ill.' (Cardona 1965, pg. 80)

It is tempting to think of this as failed gender agreement, taking neuter to be the default in Gujarati instead of masculine. However, such a view is not tenable because in masculines, we get masculine plural agreement, as shown below.

(80) təmara pita kyare awana che
your.MPL father when coming.MPL be.3
'When is your father (honorific) coming?' (Cardona 1965, pg. 80)

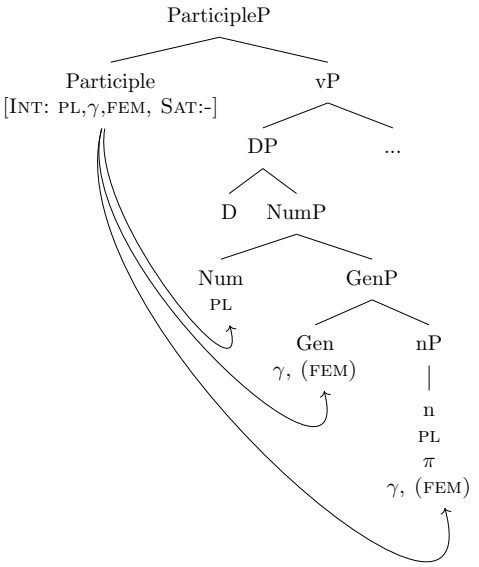
If there was no gender agreement with PoPs, then there would be no way to explain why masculines and feminines trigger different gender agreements (masculine vs. neuter). So here, we have a language with FEM suppression which cannot be analyzed in terms of failed gender agreement. Overall then, previous accounts of FEM suppression cannot account for all the relevant data.

We therefore claim that gender agreement never fails with PoPs, and FEM suppression, in the languages that have them, is a morphological phenomenon. In particular, we suggest that in some languages, even though FEM feature is copied during Agree, post-syntactically, it goes unrealized in the presence of a PL feature. The challenge here is to make sure that whatever mechanism(s) prevent(s) the realization of the FEM feature only applies in a PoP and not in a regular plural. While we do not offer

[4]The neuter plural affix in Gujarati is *-ã*, and differs from the masculine plural affix *-a* only in being nasalized. For the speaker we consulted, the nasalization of the neuter plural affix has been lost, as a result of which there is no longer a contrast between the masculine and neuter plural affix. However, this distinction between masculine and neuter plural has been reported in both Cardona (1965) and Tisdall (1892), along with the honorific agreement pattern described here.

a worked out analysis, we think that the difference between regular plurals and PoPs, as regards the overt realization of the FEM feature, can be derived by taking advantage of the fact that in a PoP, the FEM feature is acquired by the probe before the PL feature, as shown in (74) above, but this is not the case for a regular plural, as shown in (81). To be able to do this, we would need the morphology to keep track of the order in which different features are acquired, an idea which has precedent in the literature on Multiple Agree (Grishin 2022, 2023).

(81) Co-occurring gender and PL agreement with a regular plural



Such a morphological analysis deserves a more detailed treatment than we can offer here, and we leave this as a task for future work. The purpose of this section was two-fold: (i) to show that the fact that our analysis does not block simultaneous plural and gender agreement with PoPs is actually an advantage for languages like Hindi, Marathi and Gujarati where masculine and feminine PoPs trigger different agreements, and (ii) to suggest a potential way to derive FEM suppression morphologically while allowing gender agreement in the syntax.

6 Conclusion

This paper has provided a novel account of number agreement with PoPs. We have argued that the availability of singular and plural agreement with PoPs depends on the search domain of probes. Plural agreement with PoPs obtains when a probe is able to search through the entirety of the DP and copy the PL feature on n. On the other hand, singular agreement obtains when the probe's search domain is restricted,

preventing it from accessing the PL feature on n. For this to obtain, we proposed a structure for PoPs where the PL feature is less accessible to probes than the PL feature in regular plurals.

A major contribution of the account developed here is its empirical coverage. Using the Interaction-Satisfaction model of Agree and the assumption that probes can act as goals, we have successfully derived all restrictions on the distribution of singular and plural agreement with PoPs. These restrictions include: (i) gender asymmetry in the availability of plural concord (*MASC-SG) in Punjabi, (ii) the ban on co-occurrence of singular agreement with person (*Person-SG), and (iii) the ban on a probe with singular agreement to occur higher than a probe with plural agreement (*SG-over-PL). Moreover, our account captures agreement with PoPs in both DP-internal and DP-external domains. While the Interaction-Satisfaction model has so far been used to derive various kinds of DP-external agreement (e.g. Baier 2018; Clem 2019; Oxford 2022 among others), our analysis shows that it is also applicable for DP-internal agreement.

References

Ackema, P. and A. Neeleman. 2018. *Features of person: From the inventory of persons to their morphological realization*. Cambridge, MA: MIT Press.

Acquaviva, P. 2008. *Lexical plurals: A morphosemantic approach*. Oxford University Press.

Alexiadou, A. 2011. Plural mass nouns and the morpho-syntax of number. In *Proceedings of the 28th West Coast Conference on Formal Linguistics*, pp. 33–41. Cascadilla Proceedings Project Somerville, MA.

Arad, M. 2003. Locality constraints on the interpretation of roots: The case of Hebrew denominal verbs. *Natural Language & Linguistic Theory 21*(4): 737–778 .

Baier, N.B. 2018. *Anti-agreement*. Ph. D. thesis, University of California, Berkeley.

Béjar, S. and M. Rezac. 2009. Cyclic agree. *Linguistic Inquiry 40*(1): 35–73 .

Bhatt, R. and C. Davis 2023. Number, honor, and agreement in Hindi-Urdu. In *Proceedings of Formal Approaches to South Asian Languages*, Volume 12.

Cardona, G. 1965. *A Gujarati reference grammar*. University of Pennsylvania Press.

Clem, E. 2019. Object-sensitive switch-reference and insatiable probes. In *NELS 49: Proceedings of the Forty-Ninth Annual Meeting of the North East Linguistic Society*, Volume 1, pp. 173–186. University of Massachusetts, Graduate Linguistics Students Association Amherst.

Comrie, B. 1975. Polite plurals and predicate agreement. *Language 51*(2): 406–418 .

Corbett, G.G. 1983. *Hierarchies, targets and controllers: Agreement patterns in Slavic.* Croom Helm London.

Corbett, G.G. 2023. The Agreement Hierarchy and (generalized) semantic agreement. *Glossa: a journal of general linguistics 8*(1) .

Danon, G. 2011. Agreement and DP-internal feature distribution. *Syntax 14*(4): 297–317 .

Deal, A.R. 2015. Interaction and satisfaction in phi-agreement. In *Proceedings of the 45th North East Linguistics Society*, Amherst, MA, pp. 179–192. GLSA publications.

Deal, A.R. 2023. Interaction, satisfaction, and the PCC. *Linguistic Inquiry 55*(1): 39–94 .

Despić, M. 2017. Investigations on mixed agreement: polite plurals, hybrid nouns and coordinate structures. *Morphology* 27: 253–310 .

Grishin, P. 2022. How to agree with the lowest DP in Algonquian. Manuscript, MIT.

Grishin, P. 2023. Omnivorous third person agreement in Algonquian. *Glossa: a journal of general linguistics 8*(1) .

Harbour, D. 2016. *Impossible persons*, Volume 74. MIT Press.

Houtzagers, P. 2018. The honorific third person plural in Slavic. *Russian Linguistics*: 1–26 .

Kaur, G. TA. Two phi-feature sets on honorific nouns. In *Proceedings of the 41st West Coast Conference on Formal Linguistics*.

Kramer, R. 2015. *The morphosyntax of gender*, Volume 58. Oxford University Press.

Kramer, R. 2016. A split analysis of plurality: Number in Amharic. *Linguistic Inquiry 47*(3): 527–559 .

Lowenstamm, J. 2008. On little n,, and types of nouns, In *Sounds of silence: Empty elements in syntax and phonology*, eds. J. Hartmann, V.H. and H. van Riemsdijk, 105–144. Elsevier Amsterdam.

Makarski, W. 1973. Konstrukcje pluralis maiestatis w gwarach Rzeszowszczyzny. *Poradnik Jezykowy 305*(1): 30–34 .

Marantz, A. 1997. No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon. In *Proceedings of the 21st annual Penn linguistics colloquium*, Volume 4, pp. 201–225.

Marantz, a. 2001. Words. Manuscript, MIT.

Nevins, A. 2011. Multiple agree with clitics: Person complementarity vs. omnivorous number. *Natural Language & Linguistic Theory* 29: 939–971 .

Norris, M. 2012. Towards an analysis of concord (in Icelandic). In *Proceedings of the 29th West Coast Conference on Formal Linguistics*, pp. 205–213. Cascadilla Proceedings Project Somerville, MA.

Norris, M. 2014. *A theory of nominal concord*. Ph. D. thesis, UC Santa Cruz.

Noyer, R. 1998. Impoverishment theory and morphosyntactic markedness, In *Morphology and its relation to phonology and syntax*, eds. Lapointe, S.G., D.K. Brentari, and P.M. Farrell, 264–285. Stanford, CA: CSLI.

Oxford, W. 2022. Probe specification and agreement variation: Evidence from the Algonquian inverse. *Linguistic Inquiry*: 1–47 .

Panagiotidis, P. 2002. *Pronouns, Clitics and Empty Nouns: 'Pronominality' and licensing in syntax*. John Benjamins Amsterdam.

Panagiotidis, P. 2018. (Grammatical) gender troubles and the gender of pronouns, In *Gender and noun classification*, eds. Éric Mathieu, M.D. and G. Zareikar, 186–200. Oxford University Press.

Patel-Grosz, P. and P.G. Grosz. 2017. Revisiting pronominal typology. *Linguistic Inquiry 48*(2): 259–297 .

Puškar, Z. 2017. *Hybrid Agreement: Modelling variation, hierarchy effects and Ø-feature mismatches*. Ph. D. thesis, Universitätz Leipzig.

Puškar, Z. 2018. Interactions of gender and number agreement: Evidence from Bosnian/Croatian/Serbian. *Syntax 21*(3): 275–318 .

Puškar-Gallien, Z. 2019. Resolving polite conflicts in predicate agreement. *Glossa: a journal of general linguistics 4*(1): 1–25 .

Ritter, E. 1991. Two functional categories in noun phrases: Evidence from Modern Hebrew, *Perspectives on phrase structure: Heads and licensing*, 37–62. Brill.

Samarin, W.J. 1966. *The Gbaya language: Grammar, texts, and vocabularies*. University of California Press.

Sinha, Y. 2023. Number morphology on honorific nouns. In *Proceedings of Formal Approaches to South Asian Languages*, Volume 12.

Sinha, Y. TA. Phi-concord in Punjabi singular honorific DPs. In *Proceedings of the 58th Annual Meeting of the Chicago Linguistic Society*.

Tisdall, W.S. 1892. *A simplified grammar of the Gujarati language*, Volume 22. Kegan Paul, Trench, Trúbner & Co. Ltd.

Valois, D. 1991. *The internal syntax of DP*. Ph. D. thesis, University of California, Los Angeles.

Wechsler, S. 2011. Mixed agreement, the person feature, and the index/concord distinction. *Natural Language & Linguistic Theory* 29: 999–1031 .

Wechsler, S. and H.J. Hahm. 2011. Polite plurals and adjective agreement. *Morphology 21*(2): 247–281 .