Singular *tum* is not plural: a Distributed Morphology analysis of Hindi verb agreement

YASH SINHA, *Massachusetts Institute of Technology*

ABSTRACT

Hindi has a three-way honorificity contrast in the second person: low *tuu* vs. mid *tum* vs. honorific *aap*, and a two-way contrast between non-honorific and honorific DPs in the third person. Honorific DPs are said to be formally plural as they always trigger plural agreement, regardless of semantic number. In this context, I consider the formal number features associated with the non-honorific pronoun *tum*. Prior work has claimed that like honorific DPs, *tum* always bears formal plural features. This is motivated by the fact that in many cases, *tum* takes apparent plural morphology, regardless of semantic number. However, Bhatt & Keine (2018) note a puzzling exception to this generalization: *tum* takes the feminine singular affix -ii when semantically singular, and the feminine plural affix -ı̃ı̃ when semantically plural. I account for this puzzle by assuming that only DPs that are honorific or semantically plural bear the formal plural feature. Since *tum* is not honorific, it does not bear this feature when it is semantically singular. I show that apparent plural morphology associated with *tum* can be accounted for if we assume this morphology is actually underspecified for number. The analysis is couched within a Distributed Morphology framework.

1 Introduction

In the second and third person, Hindi shows a morphosyntactic contrast between honorific and non-honorific DPs, and the agreement they trigger. Generally, honorific DPs are those whose referents the speaker shows deference, politeness or non-familiarity towards. Other referents are referred to with a non-honorific DP. For example, a speaker would refer to one's grandfather with an honorific DP, but a close friend with a non-honorific one. The exact sociocultural and pragmatic conditions that determine whether someone is referred to with an honorific or non-honorific DP are beyond the scope of this paper.

The language uses different second-person pronouns for honorific and non-honorific referents. The choice between these pronouns is also dependent on number. The second-person honorific pronoun is *aap*. *Aap* can be used with both singular and plural reference. The non-honorific second-person pronouns are *tuu* and *tum*. Both *tuu* and *tum* are used in the singular, but only *tum* is used in the plural. Since *tum* and *aap* can be used with singular or plural reference, I use the terms singular *tum/aap* and plural *tum/aap* to distinguish between these two usages. The distribution of the various second-person pronouns is summarized in Table 1.

	Non-honorific	Honorific
Singular	tuu or tum	aap
Plural	tum	aap

Table 1: Hindi second-person pronouns

The contrast between *tuu* and *tum* in the singular also represents a type of honorificity contrast. The use of *tum* with non-honorific addressees is politer than the use of *tuu*. Depending on the context, using *tuu* generally indicates affection, contempt, or anger towards the addressee. I use the terms low and mid to refer to the honorificity level corresponding to *tuu* and singular *tum* respectively. These names are due to the fact that *tuu* corresponds to the lowest honorificity level, while *tum* refers to an intermediate honorificity level between *tuu* and *aap*. As Table 1 implies, the low vs. mid contrast only exists in the second-person singular. In the second-person plural, this contrast is neutralized, and we only get *tum*.

No low vs. mid contrast exists in the third-person. There is only a two-way non-honorific vs. honorific contrast. Number morphology is coopted to express honorificity contrasts. Plural pronouns and demonstratives are used with singular, honorific reference. The use of number morphology on nouns to express honorificity is more complicated, and beyond the scope of this paper. Since plural morphology is used with singular referents to express honorificity, no honorificity contrast can be made in the third-person plural.

Coming to verb agreement, second- and third-person honorific DPs both trigger plural agreement, even if they are semantically singular. This is shown in (1) for second-person *aap* and in (2) for third-person honorific DPs 'grandfather' and 'grandmother', which take the affixes -e/-ı̃ı̃.

(1) aap   kab   aa-y-e/ı̃ı̃
     2.HON   when   come-PFV-MASC.PL/FEM.PL
     'When did you (SG, HON, MASC/FEM) come?'

(2) daadaajii/daadiijii   kab   aa-y-e/ı̃ı̃
     grandfather/grandmother   when   come-PFV-MASC.PL/FEM.PL
     'When did grandfather/grandmother come?'

In this, they pattern like the plurals in (3) and (4), and unlike the non-honorific singulars in (5) and (6), which take the affixes -aa and -ii.

(3) laɽke   kab   aa-y-e
     boy.PL   when   come-PFV-MASC.PL
     'When did the boys come?'

(4) laɽkıyãã kab   aa-y-ı̃ı̃
     girl.PL   when   come-PFV-FEM.PL
     'When did the girls come?'

(5) laɽkaa   kab   aa-y-aa
     boy.SG   when   come-PFV-MASC.SG
     'When did the boy come?'

(6) laɽkii   kab   aa-y-ii
     girl.SG   when   come-PFV-FEM.SG
     'When did the girl come?'

I assume that even when they are semantically singular, honorific DPs carry the plural morphosyntactic feature, explaining their plural agreement. In other words, these DPs are "formally plural." The main focus of this paper, however, is the number feature associated with singular *tum*. Previous descriptive and theoretical works like Bhatt & Keine 2018, McGregor 1972 and Kellogg 1876 have claimed that singular *tum* is also formally plural. This is despite the fact that singular *tum* is neither semantically plural, nor honorific. This claim is supported most clearly by the fact that singular *tum* takes the apparently MASC.PL affix -e instead of -aa, as shown in (7).

(7) tum   kab   aa-y-e/*aa
     TUM   when   come-PFV-MASC.PL/*MASC.SG
     'When did you (SG, MID, MASC) come?'

    However, as Bhatt & Keine (2018) note, when the referent is feminine, singular *tum* takes the FEM.SG affix -ii instead of the FEM.PL affix -ı̃ı̃, as shown in (8). This is different from plural *tum*, which takes the FEM.PL affix -ı̃ı̃ as expected, as is shown in (9). If singular *tum* carries the plural feature, it is difficult to explain why it takes -ii, while plural *tum* takes -ı̃ı̃.

(8) tum   kab   aa-y-ii/*ı̃ı̃
     TUM   when   come-PFV-FEM.SG/*FEM.PL
     'When did you (SG, MID, FEM) come?'

(9) tum   laɽkıyãã kab   aa-y-ı̃ı̃/*ii
     TUM   girl.PL   when   come-PFV-FEM.PL/*FEM.SG
     'When did you girls come?'

An appealing, but ultimately incorrect explanation for this is as follows: We could say that the contrast between the feminine affixes -ii and -ı̃ı̃ tracks semantic number, while that between -aa and -e tracks formal number. Singular *tum*, being semantically singular takes -ii, but still carries the formal plural feature, and therefore takes -e. This is the approach to this puzzle suggested by Bhatt & Keine (2018). However, this approach is untenable because we have already seen evidence that the -ii vs. -ı̃ı̃ contrast tracks formal number too. The affix -ı̃ı̃ occurs not only with

semantically plural DPs, but also with semantically singular, honorific DPs, as shown in (1) and (2). These DPs are formally plural. In other words, the agreement puzzle is really just about singular *tum*, and is not about semantically singular DPs in general.

I propose a different explanation for the feminine agreement of *tum*. My proposal is that only honorific and semantically plural DPs are formally plural. This means that singular *tum* is formally singular because it is neither honorific, nor semantically plural. However, plural *tum* is formally plural because it is semantically plural. Then, the fact that singular *tum* takes FEM.SG -ii, and plural *tum* takes FEM.PL -ĩĩ follows quite straightforwardly. The fact that honorific DPs take -ĩĩ also follows from the fact that they are formally plural, regardless of their semantic number.[1]

This proposal has its own problems. The first problem is accounting for the distribution of the pronoun *tum* itself, vis-à-vis other second-person pronouns. In previous accounts, because singular *tum* was also associated with the plural feature, it was possible to say that the pronoun *tum* realized second-person plural non-honorific features. Under the current proposal, singular *tum* is formally singular, while plural *tum* is formally plural, and so *tum* cannot be associated with a particular number feature. An alternate account for the distribution of *tum* is required.

The second problem is to explain why certain affixes associated with singular *tum* are also found with formally plural DPs. We have already seen one example of this. The masculine affix -e is found with formally plural DPs and singular *tum*, but not with other formally singular DPs. We will shortly see that another agreement affix, -o, that is associated with *tum*, poses a similar problem.

In the analysis developed in this paper, I provide solutions to these problems. Broadly speaking, I claim that the pronoun *tum* and the problematic agreement affixes (-e and -o) are all underspecified for number, making them compatible with both formally singular and plural contexts. They are prevented from occurring in other formally singular contexts because of blocking by more specific pronouns and affixes, or due to impoverishment (feature-deletion).

The rest of this paper is structured as follows. In section 2, I describe verb agreement morphology in Hindi. In section 3, I discuss the morphosyntactic features required for the analysis, and their distributions. Section 4 provides an analysis of the distribution of second-person pronouns, and section 5 does the same for the verb agreement affixes. Section 6 concludes, and discusses some avenues for future work

2   Verb agreement morphology in Hindi

Verb agreement in Hindi can only be controlled by DPs that lack oblique case marking like ergative, dative, differential object marking etc. If the subject is not oblique, it controls agreement. If it is oblique, and the object is not oblique, then the object controls agreement. If both the subject and object are oblique, then the verb short default (third-person, masculine, singular) agreement.

The language has two sets of verb agreement affixes. The first set of affixes track the gender (G), number (N) and honorificity (H) of the controller. I refer to these affixes as GNH affixes. There are four GNH affixes: -aa, -e, -ii and -ĩĩ. The affixes -aa and -e appear with masculine DPs, while -ii and -ĩĩ appear with feminine DPs. Setting aside singular *tum*, -aa and -ii appear with formally singular DPs, while -e and -ĩĩ appear with formally plural DPs. Singular *tum*, as was discussed above, takes the masculine affix -e, but the feminine affix -ii. Table 2 summarizes this distribution.

Affix	Gender	Number (and honorificity)
-aa	masculine	formally singular DPs except singular *tum*
-e	masculine	formally plural DPs and singular *tum*
-ii	feminine	formally singular DPs (including singular *tum*)
-ĩĩ	feminine	formally plural DPs (and not singular *tum*)

Table 2: Distribution of GNH affixes

These affixes occur on verbal elements (main verb and auxiliaries) that are participial in origin, a category that includes most verbal elements in the language. There is significant overlap between these affixes and nominal/adjectival affixes.

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[1] There is a non-standard variety of Hindi in which *tum* is honorific, and singular *tum* takes FEM.PL -ĩĩ. In this variety, *aap* is absent/marginal, and there is only a two-way non-honorific *tuu* vs. honorific *tum* contrast in the second-person singular. Among the speakers I consulted, this variety was characteristic of those from western Uttar Pradesh. This variety is also described in older grammars of Hindi like McGregor 1972 and Kellogg 1876.

The fact that in this variety, singular *tum* is honorific and takes -ĩĩ also provides evidence for our claim that singular *tum*'s non-honorific status in the standard variety is the reason it takes -ii.

Following Bhatt & Keine (2018), I segment the FEM.PL affix -ĩĩ into a number-neutral feminine affix -ii, that is followed by nasalization, which realizes the plural feature. We will see this plural-realizing nasalization appear with the second set of verb agreement affixes too. It should be noted that this nasalization only appears after the feminine affix -ii. It does not appear after the masculine affix -e, even if the agreement controller is formally plural.

Bhatt & Keine (2018) also show that this nasalization only occurs at the right edge of a finite clause. Elsewhere, the contrast between FEM.SG and FEM.PL is neutralized, with both taking the non-nasalized -ii. For example, consider (10)-(12), where agreement is with formally plural feminine DPs. Here, only the last verbal element in the finite clause takes -ĩĩ. The progressive auxiliary *rah-*, the habitual participial and the infinitive all take -ii, without any nasalization.

(10) aap   kahãã   jaa   rah-ii   th-ĩĩ
      2.HON   where   go   PROG-FEM   PAST-FEM.PL
      'Where were you (SG, HON, FEM) going?'

(11) laɽkɪyãã bazaar jaa-t-ii   th-ĩĩ
      girl.PL   market go-HAB-FEM   PAST-FEM.PL
      'The girls used to go to the market.'

(12) mɛ̃=ne   kitaabẽ   paɽh-n-ii   chah-∅-ĩĩ
      1SG=ERG   book(FEM).PL   read-INF-FEM   want-PFV-FEM.PL
      'I wanted to read the books.'

Of course, with formally singular DPs, all verbal elements take -ii, including the final one, as in (13)-(15).

(13) tum   kahãã   jaa   rah-ii   th-ii
      TUM   where   go   PROG-FEM   PAST-FEM.SG
      'Where were you (SG, MID, FEM) going?'

(14) mɛ̃   bazaar jaa-t-ii   th-ii
      1SG   market go-HAB-FEM   PAST-FEM.SG
      'I (FEM) used to go to the market.'

(15) mɛ̃=ne   kitaab   paɽh-n-ii   chah-∅-ii
      1SG=ERG   book(FEM).SG   read-INF-FEM   want-PFV-FEM.SG
      'I wanted to read the book.'

To capture this restriction, I assume that this nasalization realizes some node that only occurs at the right edge of a finite clause. The exact identity of this node is not relevant. Bhatt & Keine's (2018) proposal is along similar lines.

Let us turn to the second set of affixes. These affixes occur on the present tense copula/auxiliary, and the subjunctive verb. They track the person (P), number (N) and honorificity (H) of the agreement controller, and I refer to them as PNH affixes. They are not sensitive to gender. Table 3 shows the PNH affixes for the first and third person. Formally singular DPs take -ũũ in the first person, and -ɛ in the third person. Formally plural DPs take -ɛ̃.

	Formally singular	Formally plural
First person	-ũũ	-ɛ̃
Third person	-ɛ	-ɛ̃

Table 3: Distribution of PNH affixes in first and third person

In the second person, *aap* takes -ɛ̃ like other formally plural DPs, and *tuu* takes -ɛ like third-person singular DPs. *Tum* (both singular and plural) has its own dedicated affix, -o. This is summarized in Table 4.

Pronoun	Affix
tuu	-ɛ
tum	-o
aap	-ɛ̃

Table 4: Distribution of PNH affixes in second person

Strictly speaking, the -ɛ and -ɛ̃ in Tables 3 and 4 are only found on the present tense copula/auxiliary. In the subjunctive, they are replaced by their allomorphs, -e and -ẽ respectively. I do not discuss -e and -ẽ separately however because they have identical distributions to -ɛ and -ɛ̃. Everything I say about -ɛ and -ɛ̃ can be extended to -e and -ẽ.

Once again, following Bhatt & Keine (2018), I segment the -ɛ̃ into -ɛ followed by the plural-realizing nasalization. Note that plural *tum,* which **is** formally plural, does not take this plural-realizing nasalization. As Table 4 indicates, the PNH affix of plural *tum* (as well as singular *tum*) is just -o.

Except in the future tense, the elements that take PNH affixes (present tense copula/auxiliary and the subjunctive verb) are the right-most verbal element. Consequently, the plural-realizing nasalization on the PNH affixes also occurs at the right edge of a finite clause.

The future tense in Hindi is formed with a subjunctive verb that is followed by a participial element -g- (glossed G). As (16) shows, the PNH affix -e (allomorph of ɛ) on the subjunctive verb shows the plural-realizing nasalization, but the feminine GNH affix -ii on the participial element does not. These facts suggest that in the future tense, the node that that is realized as nasalization is immediately above the subjunctive verb, but under the participial element -g-.

(16)   daadii-jii   kal   aa-**ẽ**-g-**ii**
         grandmother   tomorrow   come-SBJV.3.PL-G-FEM
         'Grandmother will come tomorrow.'

This concludes our discussion of verbal agreement morphology in Hindi. I now present the analysis.

3   Features and their distributions

The analysis I present is couched within the framework of Distributed Morphology (henceforth DM, Halle & Marantz 1993, 1994). DM is a realizational theory of morphology. It assumes that the syntax generates nodes containing morphosyntactic features. These nodes are associated with or "realized by" phonological material post-syntactically, via rules of exponence called Vocabulary Items.

In this section, I discuss the morphosyntactic features needed for the analysis. All features assumed are binary. For gender, I use ±FEM, with the negative value of this feature corresponding to masculine gender. For person, I adopt the features ±PART(ICIPANT) and ±AUTHOR. (Noyer 1992 and subsequent work) Their distribution in the three persons is as in Table 5. Nothing crucial depends on this choice of person features, and other systems should work equally well.

Person	Features
First	+PART +AUTHOR
Second	+PART −AUTHOR
Third	−PART −AUTHOR

Table 5: Distribution of ±PART and ±AUTHOR

The feature ±PLURAL tracks formal (not semantic) number. DPs that are either honorific or semantically plural carry +PLURAL. DPs that are non-honorific and semantically singular carry −PLURAL. So, singular *tum*, which is non-honorific and semantically singular, also has −PLURAL.

I assume two honorificity features ±HON and ±MID. ±HON tracks the contrast between honorific and non-honorific DPs: honorific DPs are +HON, and non-honorific DPs are −HON. This is the only honorificity contrasts in the third person. In the second-person singular, we also have an additional contrast between low *tuu* and mid *tum*. The feature ±MID underlies this contrast. Low *tuu* is −MID, while mid *tum* is +MID. Even though the low vs. mid contrast is only overtly realized in the second-person singular, I assume that it is underlyingly present in the second-person plural too.

The low vs. mid contrast is not found outside the second person. To account for this, I make the stipulation in (17). This stipulation will also help us explain the distribution of the masculine agreement affixes in section 5.

(17)   First-person and third-person DPs are always −MID.

Further, only second- and third-person DPs show a non-honorific vs. honorific contrast, a fact that is explained by the stipulation in (18).

(18)   First-person DPs are always –HON.

Finally, to explain why the low vs. mid contrast is only found among non-honorific DPs, I make the stipulation in (19). Consequently, all honorific DPs are –MID.

(19)   +HON and +MID do not co-occur.

It is possible that the restrictions in (17)-(19) follow from the semantics of these honorificity features. The exact semantics of ±HON and ±MID need to be worked out. Since this will require pinning down the exact conditions that license a particular level of honorificity for a particular referent, I leave this task for future work. Pending this, (17)-(19) remain stipulations.

    The distribution of honorificity and number features are summarized in Tables 6 for first and third person. Per (17), all first and third person DPs are –MID, and per (18), all first person DPs are –HON. Honorific third-person DPs are +HON, and also +PLURAL, regardless of semantic number. With first- and non-honorific third-person DPs, the number feature depends on semantic number.

	Semantically singular	Semantically plural
First and non-honorific third person	–MID –HON –PLURAL	–MID –HON +PLURAL
Honorific third person	–MID +HON +PLURAL	

Table 6: Number and honorificity features in the first and third person

Table 7 shows these features in the second person, where we have a low vs. mid vs. honorific contrast. The feature +MID is only found with mid DPs. Low and honorific DPs are –MID. Low and mid DPs are non-honorific; they take –HON and their number feature depends on semantic number. Honorific DPs are +HON and +PLURAL, regardless of semantic number.

	Semantically singular	Semantically plural
Low	–MID –HON –PLURAL	–MID –HON +PLURAL
Mid	+MID –HON –PLURAL	+MID –HON +PLURAL
Honorific	–MID +HON +PLURAL	

Table 7: Number and honorificity features in the second person

4   Analysis: second-person pronouns

In this section, I present an analysis that can account for the distribution of second-person pronouns. Here, we run into the first challenge for the assumption that singular *tum* is formally singular. To see why, consider the number and honorificity features in the second person along with the relevant pronouns, as shown in Table 8. Notice in particular the distribution of *tum*.

	Semantically singular	Semantically plural
Low	tuu –MID –HON –PLURAL	**tum** –MID –HON +PLURAL
Mid	**tum** +MID –HON –PLURAL	**tum** +MID –HON +PLURAL
Honorific	aap –MID +HON +PLURAL	

Table 8: Second-person pronouns and their features

The challenge is to provide an account for the distribution of *tum* vis-à-vis the other two second-person pronouns. The cell that corresponds to singular *tum* in the table above is the mid, semantically singular cell. By hypothesis, it has the feature –PLURAL. However, *tum* also occurs in two other cells (low, semantically plural and mid, semantically plural), which are both +PLURAL. Therefore, we cannot associate *tum* with one particular number feature, as has been done in

the prior literature. Incidentally, *tum* also cannot be associated with +MID either because it occurs in the low, semantically plural cell as well, which is –MID.

I propose that *tum* is the default second-person pronoun, underspecified for any number or honorificity feature. Its Vocabulary Item (VI) is in (20). I am assuming that pronouns realize D heads, which is why (20) is specified for D. It is also specified for second-person features, +PART and –AUTHOR.

(20)   [D +PART –AUTHOR] ↔ tum

In DM, if a VI is underspecified (not specified) for any feature, it is in principle compatible with both positive and negative values of that feature. This is why *tum* is compatible with both +PLURAL and with –PLURAL, and with +MID and –MID . In fact, *tum* is in principle compatible with all second-person contexts. The actual attested distribution of *tum* however, is restricted by *aap* and *tuu*. *Aap* occurs in the presence of +HON, and *tuu* occurs when both –MID and –PLURAL are present. The VIs in (21) and (22) can account for this.

(21)   [D +PART –AUTHOR +HON] ↔ aap

(22)   [D +PART –AUTHOR –MID –PLURAL] ↔ tuu

Aap and *tuu* restrict the distribution of *tum* because of the principle of Pāṇinian ordering. This principle is not specific to DM. It was first formulated by the 6th century BCE Sanskrit grammarian, Pāṇini, and was reformulated in modern times by Kiparsky (1973). Stated in DM terms, this principle says that if two VIs can apply in a particular context, the more specific one blocks the less specific one. Both (21) and (22) are more specific than (20) because they can only apply in a subset of contexts that (20) can apply in. (20) can apply in all second-person contexts, while (21) and (22) are restricted to particular numbers and/or honorificity levels in the second person. Consequently, whenever (21) and (22) can apply, they do, preventing *tum* from occurring in those contexts.

Underspecification and blocking due to Pāṇini ordering can thus help us account for the distribution of *tum*, without positing that singular *tum* is formally plural. These principles will also help explain the distribution of agreement affixes, which I now turn too.

5   Analysis: verb agreement affixes

As was mentioned previously, there is a node at the right edge of a finite clause, that is often realized by nasalization when the agreement-controlling DP is formally plural. I assume that this node carries the number features of the agreement-controlling DP. Aside from this, there are two other types of agreement nodes. In one type of node, we find the gender, number and honorificity features of the agreement controller, but not its person features. This node is realized by GNH affixes (minus the plural-related nasalization). The second type of node carries the person, number and honorificity features of the agreement controller, but not its gender features. This node is realized by PNH affixes (minus the plural-related nasalization). I assume that the phi-features of the agreement-controlling DP are transmitted to these nodes on verbal elements via Agree. I now provide an account for the distribution of the various affixes that were discussed in section 2.

Let us first consider the plural-realizing nasalization, which is found with both PNH and GNH affixes. I propose the VI in (23) to account for this nasalization.

(23)   [+PLURAL] ↔ ˜

This explains why FEM.PL DPs take -ĩĩ instead of -ii at the right edge of a finite clause, and why most formally plural DPs take the PNH affix -ɛ̃ instead of -ɛ. Further, our assumption that singular *tum* is formally singular explains why it does not take the nasalized feminine affix -ĩĩ. Because this pronoun does not carry the feature +PLURAL, (23) does not apply when it controls agreement.

However, (23) wrongly predicts that we should always find nasalization at the right edge if the agreement controller is formally plural. This is not true in two scenarios. First, we saw that there is no nasalization after the masculine GNH affix -e, even if the controller is formally plural. To account for this, I propose that +PLURAL is realized by a null affix when it is adjacent to the masculine feature (–FEM), per the VI in (24).

(24)   [+PLURAL] ↔ Ø/[–FEM] _

Note that nodes where PNH affixes are realized never carry gender features, and so (24) will not apply next to PNH affixes. This is why the distribution of nasalization on PNH affixes is not sensitive to gender. In other words, even masculine DPs take the nasalized PNH affix -ẽ if they are formally plural.

We also saw that the plural-realizing nasalization does not appear on the PNH affix associated with plural *tum,* -o. This is despite the fact that plural *tum,* being semantically plural, carries +PLURAL. Once again, I appeal to blocking by a null affix. Per (25), this null affix realizes +PLURAL, when adjacent to second-person non-honorific features.

(25)   [+PLURAL] ↔ Ø/[+PART −AUTHOR −HON] _

(25) will never apply after GNH affixes because the nodes realizing GNH affixes do not carry person features. As a result, even plural *tum* takes the nasalized GNH affix -ĩĩ, even though it does not take a nasalized PNH affix.

The VIs in (24) and (25) are sensitive to morphosyntactic features that are present on a node that is further inwards. It has been claimed in the literature that such morphosyntactically conditioned allomorphy, such as in (24) and (25), can never be inward sensitive. (Bobaljik 2000) However, this claim has been challenged in recent works including Harizanov & Gribanova (2014) and Banerjee (2019). In positing the VIs in (24) and (25), I side with the latter group of authors.

Once we set aside the plural-realizing nasalization, we only have three GNH affixes: -aa, -e and -ii. All feminine DPs take -ii, per the VI in (26).

(26)   [+FEM] ↔ ii

In the masculine, formally plural DPs and singular *tum* take -e, while all other formally singular DPs take -aa. This is another instance where singular *tum* appears to take plural morphology, something that is difficult to account for if we assume that singular *tum* is formally singular. However, there is an alternate characterization of the distribution of -aa and -e, that does not run into this problem. We can say that -aa occurs when the features −MID and −PLURAL are both present, and -e occurs elsewhere. The feature −MID is present with low second-person DPs and all first- and third-person DPs. Therefore, formally singular DPs of these categories have both −MID and −PLURAL. Formally plural DPs lack −PLURAL, and singular *tum* lacks −MID. In both of these cases, we get -e.

Under this characterization, -e is the default masculine affix, underspecified for number and honorificity. Its VI is in (27). Its distribution is restricted by -aa, which blocks it in the contexts where −MID and −PLURAL are both present, per the VI in (28). Like in the case of the pronouns, underspecification and blocking can be used to explain why -e, occurs with singular *tum*, even though otherwise, it occurs with formally plural DPs,

(27)   [−FEM] ↔ e

(28)   [−FEM −MID −PLURAL] ↔ aa

Finally, we turn to PNH affixes. Setting plural-associated nasalization aside, we are left with the following distribution: (i) 1SG takes -ũũ, (ii) singular and plural *tum* take -o, (iii) all other DPs take -ε. The VI for 1SG -ũũ in (29) is quite straightforward. Since -ε occurs across all persons, both numbers, and with both honorific and non-honorific DPs, I assume that it is underspecified for any phi-feature, per the VI in (30).

(29)   [+AUTHOR −PLURAL] ↔ ũũ

(30)   [ ] ↔ ε

Accounting for the PNH affix of *tum,* -o poses a third and last challenge for the assumption that singular *tum* is formally singular. Since it occurs with both singular and plural *tum,* it cannot be associated with any one value of PLURAL. I posit the VI in (31) for this affix. Aside from PLURAL, (31) is also not specified for any value of MID, because like the pronoun *tum*, it is found in both low and mid contexts.

(31)   [+PART −AUTHOR −HON] ↔ o

However, the VI in (31) wrongly predicts -o as the PNH affix of *tuu*, a second-person non-honorific pronoun. *Tuu* takes the PNH affix -ε and not -o. A similar problem arose in the distribution of pronouns, but we cannot apply the same solution here. Recall that we had to prevent *tum* from occurring in the low, singular cell, just as we have to

prevent the PNH affix -o from occurring in the low, singular cell. For the pronouns, we had posited a more specific VI for *tuu* that blocked the VI for *tum* in these contexts. An analogous solution for the PNH affixes where -ɛ blocks -o in low, singular contexts is not viable. This is because the VI for -ɛ in (30) is less specific than that for -o in (31).

I make use of impoverishment to explain why the low, singular PNH affix is underspecified -ɛ instead of -o. Impoverishment is a feature deleting operation. (Bonet 1991, Noyer 1992, Halle 1997, Harley 2008 among others) If a feature is deleted from a particular context, the VI associated with that feature cannot apply in that context. The impoverishment rule in (32) deletes –HON in low, singular contexts, preventing (32) from applying. As a result, we get underspecified -ɛ there, per (30).

(32)   [+PART −AUTHOR −HON −MID −PLURAL] → [+PART −AUTHOR ~~−HON~~ −MID −PLURAL]

It is therefore possible to account for the distribution of PNH affixes too, even if singular *tum* is not grammatically plural. While we did make use of underspecification, blocking was not enough, and impoverishment was required.

6   Conclusion

In this paper, I argued that despite initial appearances, singular *tum* is formally singular. This provided a straightforward explanation for the puzzle in Bhatt & Keine (2016), that singular *tum* takes the feminine affix -ii instead of -ĩĩ. Cases of apparent plural morphology associated with singular *tum*, like the GNH affix -e, PNH affix -o and the pronoun *tum* itself, were accounted for by using underspecification, blocking and impoverishment.

Before concluding, I would like to discuss some avenues for future work. There is a significant amount of dialectal variation in Hindi verbal agreement morphology, especially in the realization of number and honorificity features. Here, I have only analyzed one variety. An obvious next step would be to document and analyze other varieties of the language. Looking at the micro-variation could also reveal insights that cannot be seen by looking at only one variety.

Another topic for future work would be the honorificity features posited in this paper. The semantics of these features need to be worked out, and it remains to be seen if the restrictions on their distribution stipulated here follow from their semantics. Beyond Hindi, it would be worthwhile to investigate if the honorificity features posited here are useful in analyzing honorificity contrasts in other languages. Other Indo-Aryan languages with three or four levels of honorificity contrasts seem like promising places to start. It would also be interesting to investigate if number and honorificity interact in the same way as Hindi in other languages that co-opt number morphology to express honorificity contrasts.

Acknowledgements

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