On the Mechanics (Syntax) of Indexical Shift: Evidence from Allocutive Agreement in Magahi

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Abstract: The Eastern Indo-Aryan language Magahi has allocutive agreement on finite verbs that expresses features of who the sentence is addressed to. Unlike Basque, this allocutive marking is freely available in embedded clauses, where it interacts with indexical shift in Magahi. We use this to argue for a reductive analysis of indexical shift in (at least) this language. In particular, the details of allocutive agreement show that: (i) there is a DP "Hr" that expresses the addressee in the periphery of finite clauses, (ii) this DP binds second person pronouns in its domain, and (iii) this DP can be controlled by the goal argument of a higher verb. Taken together, these three properties automatically add up to an account of indexical 'you' shifting to refer to the goal of the higher verb. In particular, no distinct "monstrous" operator qua C-like head is needed. We show that the distribution of indexical shift closely mirrors the distribution of allocutive marking across various clause types and configurations, as this theory predicts. The theory generalizes to first person indexical shift, which also shows signs of syntactic control at work. Finally, a close look at locality conditions shows that embedded Hr always needs to be bound by something: either by a higher argument, resulting in indexical shift, or by a higher Hr, resulting in no shift.

Keywords: indexical shift, allocutive agreement, Magahi, control, pronoun binding

1. Introduction

Magahi, an Eastern Indo-Aryan language spoken in Bihar state, India, allows indexical shift of a

fairly normal kind, similar to what Schlenker (1999, 2003) discussed in his ground-breaking

work on Amharic, and has since been documented and discussed in a fairly wide range of

languages (see also Anand and Nevins 2004, Anand 2006, and others cited below). Thus in (1a)

the pronoun 'I' in the complement of the verb 'think' can refer to either the speaker of the whole

sentence (the unshifted reading) or to the subject of the matrix verb 'think' (the shifted reading).

Similarly, in (1b) when the matrix verb is 'tell', which takes a syntactically expressed goal

argument, the pronoun 'you' can have a shifted meaning in which it refers to Bantee, the goal of

'tell', rather than to the addressee of the sentence as a whole.

(1)   a. John socha h-ai   ki ham tej   h-i.

          John think be-3.NH.S that I   smart be-1.S

          'John thinks that I (=John, or =speaker) am smart.'

      b. Santeeaa Banteeaa-ke kah-kai   ki ham toraa   dekhl-i ha-l.

          Santee   Bantee-DAT told-3.NH.S that I   you.ACC saw-1.S be-PRF

          'Santee told Bantee that I (=Santee or =speaker) saw you (=Bantee or =addressee).'

Magahi then joins the growing list of languages that have this fascinating and theoretically

informative phenomenon. Indexical shift has often been taken to be mostly or even entirely a

semantic phenomenon, but building on the perspective of Shklovsky and Sudo's (2014) study of

Uyghur, we argue that it is has a significant syntactic structure as well (see also Sundaresan to

appear for a similar perspective, but applied to "logophoric" uses of anaphors).

        We develop our case for this primarily by invoking *allocutive agreement* in Magahi.

Alok (2018) shows that Magahi has a form of this even rarer phenomenon. Allocutive

agreement is morphology on the verb that expresses grammatical features associated with the

person that the sentence is addressed to. This phenomenon is otherwise only known to exist in a

handful of languages, most famously Basque (Oyharçabal 1993), from whose grammatical

tradition the term comes; see also Antonov (2015) for four other languages with similar

agreement (Pumé, Bikware, Mandan, and Beja), Miyagawa (2012, 2017) for an argument that a

certain honorific marker (-*masu*) is a form of allocutive agreement in Japanese, and McFadden

(2017) for a preliminary discussion of allocutive number marking in Tamil. Magahi's

manifestation of allocutive marking is introduced in (2). Here the finite verb optionally bears

morphology expressing the honorificity status of the addressee with respect to the speaker

according to a three-way distinction: whether the addressee is a peer of the speaker (a friend, a

cousin, etc.; non-honorific, NH), or someone who the speaker honors (a parent or grandparent; honorific, H), or someone holding a high position in society as a whole (a king, priest, or teacher; high honorific, HH). There are thus four ways to express 'I am going' in Magahi, depending on who one is speaking to, as in (2).

(2)   a. Ham   jaa-it   h-i.   Addressee unspecified.

        I   go-PROG be-1.S

         'I am going.'

        b. Ham   jaa-it   h-i-au.   Addressee nonhonorific, a peer.

        I   go-PROG be-1.S-NH.AL

        'I am going.'

        c. Ham   jaa-it   h-i-o.   Addressee honorific,.e.g. a parent, grandparent.

        I   go-PROG be-1.S-H.AL

        'I am going.'

        d. Ham   jaa-it   h-i-ain.   Addressee high honorific: a king, priest, professor

        I   go-PROG be-1.S-HH.AL

        'I am going.'

Like previous generative studies of allocutivity, Alok (2018) argues that there is a covert but syntactically expressed representation of who the sentence is addressed to in Magahi, and a functional head in the clause agrees with that covert DP (see below for details). In this, he follows Oyharçabal's (1993) pioneering study of Basque, and other works in that tradition (Miyagawa 2012, 2017, McFadden 2017), extending it to Magahi.

Magahi, however, is different from Basque and Japanese in that allocutive marking is freely available in embedded clauses, including complement clauses. Thus in (3) the embedded verb bears the same marking reflecting the status of the addressee as the matrix verb does.

(3)   a. Santeeaa   sochk-**au**   ki   Banteeaa bhag ge-l-**au**.

             Santee   thought-NH.AL that Bantee   run   go-PRF-NH.AL

             'Santee thought that Bantee went to run.' (said to a peer)

    b. Santeeaa   sochk-**o**   ki   Banteeaa bhag ge-l-**o**.

             Santee   thought-H.AL that Bantee   run   go-PRF-H.AL

             'Santee thought that Bantee went to run.' (said to a parent)

    c. Santeeaa   sochk-**ain**   ki   Banteeaa bhag gel-**ain**.

             Santee   thought-HH.AL that Bantee   run   go-PRF-HH.AL

             'Santee thought that Bantee went to run.' (said to a teacher)

In contrast, allocutivity is not marked on embedded verbs in Basque, and in Japanese it is very limited on embedded verbs, appearing only in "embedded root" clauses.

Since both indexical shift and allocutive agreement can involve second persons/addressees, and both can be present in embedded clauses, the question arises as to whether there is any significant interaction between the two. In fact, there is. Under a verb like 'think', there is a kind of negative interaction: indexical shift is impossible if allocutive agreement is present on the embedded verb. Therefore, (4) is not ambiguous as to the reference of 'I' the way that the minimally different (1a) is.
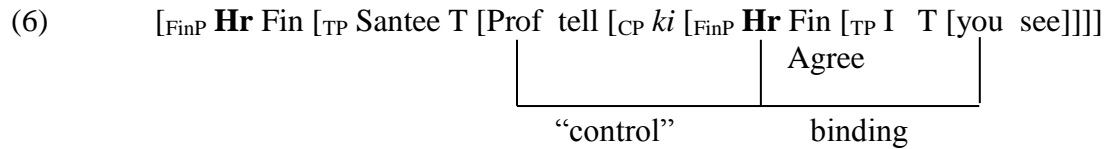
(4)   John socha h-au   ki   ham tej   h-i-**au**.

       John think   be-NH.AL that I   smart be-1.S-NH.AL

       'John thinks that I (=speaker, ***not =John***) am smart.' (said to a peer)

A somewhat different-seeming interaction is found under verbs like 'tell'. Here allocutive agreement may (or may not) shift to show the honorificity status of the goal of 'tell' rather than the honorificity status of the addressee of the whole sentence. If the allocutive marking shifts in this way, then indexical pronouns in the complement clause shift must also shift, as seen in (5).
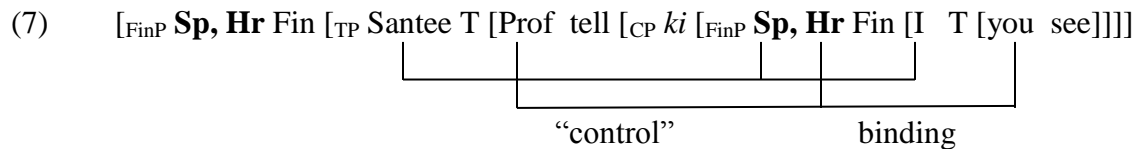
(5)   a. Santeeaa <u>Banteeaa-ke</u> kah-kai   ki ham toraa   dekh-l-i-<u>au</u>   ha-l.

              Santee   Bantee-DAT told-3.NH.S that I   you.ACC see-PRF-1.S-NH.AL be-PRF

              'Santee told Bantee that I (=Santee) saw you (=Bantee, not matrix addressee).

    b. Santeeaa <u>profesar saaheb-ke</u> kah-kai   ki ham apne-ke

              Santee   professor HH-ACC told-3.NH.S that I   you.HH-ACC

              dekh-l-i-<u>ain</u>   ha-l.

              see-PRF-1S-HH.AL be-PRF

              'Santee told the professor that I (=Santee) saw you (=the professor, not addressee).

There are, then, interactions between allocutive marking and indexical shift to study here. Moreover, these interactions can transform our understanding of the mechanisms of indexical shift in a significant way, we claim. More specifically, we put forward the hypothesis that the DP at the periphery of the clause that F agrees with to give allocutive marking in clauses of all kinds (call it Hr, for 'hearer') is also the vehicle of indexical shift for second person pronouns. This element is nominal (a DP) in that it bears the same kinds of phi-features that other DPs bear in Magahi. As a DP, it can bind other, referentially dependent DPs in its domain, namely second person pronouns. Moreover, as a null DP in the periphery of the clause, it can be controlled by a designated argument of the superordinate verb, similar to the way that PRO is controlled in infinitival clauses in English. When the Hr DP enters into this full network of relationships, the

result is indexical shift of a second person pronoun. In other words, the Hr implied by allocutivity is the so-called "monstrous" operator. This hypothesis is sketched in (6).

(6)   [$_{FinP}$ **Hr** Fin [$_{TP}$ Santee T [Prof tell [$_{CP}$ *ki* [$_{FinP}$ **Hr** Fin [$_{TP}$ I   T [you see]]]]]

                                         Agree

                    "control"   binding

Of course, Magahi can shift first person pronouns as well as second person pronouns, as in (1). We therefore claim by parity of reasoning that there is another DP in the periphery of the clause—Sp, for "speaker"—which is the vehicle for the indexical shift of first person pronouns, even although allocutive agreement does not reveal this presence of this second DP. Just as Hr binds the 2nd person pronouns in its domain, so Sp binds the 1st person pronouns in its domain, and first person indexical shift happens if and only if Sp is controlled by an argument of the superordinate verb. This fuller network of relationships is shown in (7).

(7)   [$_{FinP}$ **Sp, Hr** Fin [$_{TP}$ Santee T [Prof tell [$_{CP}$ *ki* [$_{FinP}$ **Sp, Hr** Fin [I   T [you see]]]]]

                    "control"   binding

This hypothesis is significantly different from much of the existing tradition on indexical shift, in that for us the operators at the periphery of the embedded clause are themselves nominals (DPs), and as such they enter into syntactic relationships akin to those of other DPs: relationships of agreement, binding, and control. Furthermore, the crucial factor in indexical shift is not whether these operators are present or not, as in most previous literature, but whether they are controlled or not, and if so, by what. In the resulting analysis, syntax plays a more prominent role than in most predecessors. This analysis also brings indexical shift closer to syntactic analyses of logophoric pronouns in West African languages in the tradition of Koopman and Sportiche (1989) (see also Baker 1999, Speas 2004, Safir 2005 Adesola 2005,

Pearson 2015); contrast Anand (2006) and Deal (2017, 2018) who argue for a sharp distinction between the mechanisms of indexical shift and those of logophoricity in African languages.

We develop our argument as follows. First, we review some basics of allocutive agreement, drawn from Alok (2018) (section 2). Then we provide a morphological argument that Hr does in fact bind second person pronouns in its domain (section 3). Next we show that allocutive marking shows that Hr is controlled by the matrix object (section 4), and the second person pronouns shift when and only when this happens (section 5.2). We then generalize the account to indexical shift of 'I', and show that the relationship does indeed have many of the crucial properties familiar from other instances of control (section 5.3). Section 6 considers an interesting sort of relativized minimality effect that arises in this domain, which suggests that this apparatus may be present even in languages like English in which indexical shift does not take place. Section 7 summarizes and concludes.

2. Basics of Magahi allocutive agreement

We start by reviewing briefly Alok's analysis of basic allocutive marking in Magahi, as background for our study of the interactions between allocutivity and indexical pronouns.

As shown in (2), sometimes there is an extra morpheme on the Magahi verb showing the honorificity level of the addressee of the sentence. (8) gives a similar four-way contrast when the speaker is third person (nonhonorific).

(8)   a. Santee   jaa-it   h-ai.   Addressee unspecified.

        Santee   go-PROG be-3.NH.S

         'Santee is going.'

        b. Santee   jaa-it   h-au.   Addressee nonhonorific, a peer.

        Santee   go-PROG be.3.NH.S-NH.AL

7

'Santee is going.'

c. Santee jaa-it h-o. Addressee honorific,.e.g. a parent, grandparent.

Santee go-PROG be.3.NH.S-H.AL

'Santee is going.'

d. Santee jaa-it h-ain. Addressee high honorific.

Santee go-PROG be.3.NH.S-HH.AL

'Santee is going.'

Comparing (2) and (7) shows that the morphology is compositional in these cases. First person subject agreement is –i, third person is –a(i), NH allocutive is –au, H allocutive is –o, and HH allocutive is –ain. However, some other combinations are more idiosyncratic, with some portmanteaux and syncretism; see Alok (2018) for a complete paradigm.

Although there are different morphemes for subject agreement and allocutive agreement, there is plenty of evidence that they are closely related. In (2) and (7), the two kinds of agreement are morphologically adjacent. In other cases, they fuse into a single portmanteau morpheme. Furthermore, allocutive agreement can be on a verb form if and only if that verb form is a finite one, which also bears subject agreement. Thus, the examples in (7) actually have two verbs, an auxiliary verb and a participle, and subject agreement and allocutive agreement appear together on the auxiliary; Alok 2018 shows that there are other possibilities in other tenses, but the subject agreement and the allocutive agreement are never on different verbs.

One further indication that allocutive agreement is related to subject agreement comes from embedded clauses. As seen in (3), finite embedded verbs—those with subject agreement—can bear allocutive agreement in Magahi. However, nonfinite embedded verbs cannot bear

allocutive agreement. Thus, neither the infinitival verb in (9a) nor the gerundival verb in (9b) can be inflected to show features of the addressee.

(9)   a. Santeeaa   jaayel   chaha   h-au/o/ain   (Infinitive)

         Santee   go.INF   want   be.3.NH.S-NH.AL/H.AL/HH.AL

         'Santee wants to go.'   (*jaayel-au, *jaayel-o, *jaayel-ain)

       b. Ham   okaraa   dhekhe   se   bach-l-i-ain/o/au.   (Gerund)

         I   him.NH   seeing   INS   avoid-PRF-1.S-HH.AL/H.AL/NH.AL

         'I avoided seeing him.'

There is thus good reason to say that allocutive agreement involves T, the same head that undergoes subject agreement, or some other head that is near T and interdependent with T, such as Fin in Rizzi's (1997) cartographic system.

     One might have some concern about treating allocutive marking as an instance of agreement based on the fact that the allocutive marking in Magahi does not vary for familiar phi-features like gender and number, but rather for honorificity level. But in fact, Alok (2018) shows that this is a general property of verbal agreement in Magahi, true of standard subject agreement as well as allocutive marking. A simple subject agreement paradigm in which the addressee is not expressed is given in (10); here too the gender and number of the subject do not affect the morphology on the verb, but the honorific status of second and third person subjects does, with the same three-way NH/H/HH distinctions. (Note that there is only one form for first person, essentially a nonhonorific form, as in politeness systems in other languages.)

(10)   a. Ham/hamani jaa-it   h-i.

         I/we   go-PROG be-1.S

          I/we are going.'

b. Tu/tohani   jaa-it   h-eN.

   you.SG/you.PL   go-PROG be-2.NH.S

   'You (a peer/peers) are going.'

c. Tu/tohani   jaa-it   h-a.

   you.SG/you.PL   go-PROG be-2.H.S

   'You (a parent/parents) are going.'

d. Apne   jaa-it   h-thi(n)

   You.HH.SG/PL go-PROG be-2.HH.S

   'You (a professor/professors) are going.'

e. Santee/u/okhani jaa-it   h-ai.

   Santee/3SG/3PL go-PROG be-3.NH.S

   'Santee/he/she/they (friend(s)) is/are going.'

f. U/okhani jaa-it   ha-thi(n).

   3SG/3PL go-PROG be-3.(H)H.S

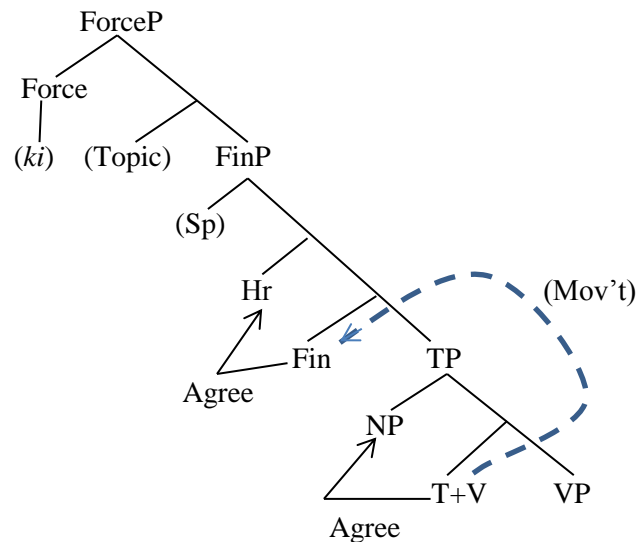   'He/she/they (parent(s), or professor(s)) are going.'

To these simple subject agreement forms, additional allocutive morphology can be added: compare (2) to (10a), and (7) to (10e) (see Alok 2018 for a complete set of forms). Therefore, the fact that allocutive marking expresses the honorific level of the addressee but not the number or gender of the addressee is a similarity with normal subject agreement in Magahi, rather than a difference. This tends to increase our confidence that allocutive marking is a form of grammatical agreement akin to ordinary subject agreement. Magahi is thus like Basque in that the same features are involved in allocutive agreement as in subject agreement; the only

difference is that gender and number are active phi-features for agreement in Basque, whereas honorificity level is an active phi-feature for agreement in Magahi.[1]

We see no objection, then, to the generative tradition of treating allocutive marking as a form of agreement, on a par with familiar subject agreement. But agreement assumes that there is something to be agreed with, a syntactic element that bears intrinsically the features that the verbal head bears derivatively as a result of the agreement. So Alok, like other generative linguists working on allocutivity, concludes that there is a syntactic representation of the person to whom a sentence is addressed within the representation of that sentence. Moreover, this expression of the addressee bears the same features as ordinary subject pronouns do: person and honorificity level. Hence it is natural to infer that it too is a DP.

With facts and considerations like these in mind, Alok arrives at the specific theory of allocutive marking in Magahi sketched in the representation in (11).

(11)

Here the representation of the addressee of the sentence is called "Hr" for "hearer" after Speas and Tenny's (2003) influential proposal (a similar item is called "Ad" in Baker (2008)). Alok locates it in a Spec of FinP in Rizzi's (1997) cartographic structure, hence near T but a little bit above it, and below the finite complementizer *ki*, the head of ForceP (cf. also Bhadra 2018).

The structure in (11) includes the claim that there is no significant interaction between the complementizer (Force) position and the presence of allocutive marking in Magahi. In this respect, Magahi differs significantly from existing analyses of Basque and Japanese, where there are such interactions. In Basque, allocutive marking is generally quite limited, essentially found only in matrix declarative sentences, not in matrix questions or embedded clauses. Oyharçabal (1993: sec. 3) says that this is because allocutive agreement crucially involves C, and +WH and embedded Cs cannot host the relevant allocutive operator. Allocutivity is a bit more widespread in Japanese according to Miyagawa (2012, 2017), but not much: it is found in matrix questions and embedded clauses under verbs like 'say' that otherwise can show root phenomena, but not in most other sorts of embedded clauses. Miyagawa says that this is because Hr is part of the high left periphery, in Speas and Tenny's Speech Act projection (SAP), and most embedding verbs select something smaller than SAP. In contrast to both Basque and Japanese, the possibility of allocutive marking is widespread in Magahi. Alok shows that allocutive marking is possible not only on matrix declaratives but on matrix questions (both yes-no and constituent questions), and on other kinds of speech acts, like exclamatives. It is also found in a wide range of complement clauses—essentially all finite ones. (3) showed this for the cognition verb 'think'; (12) shows it for the communication verb 'say' (in Magahi, 'say' is 'tell' without an explicit goal argument).

(12)   Santeeaa kah-l-**ain**   ki   Banteeaa bhag ge-l-**ain**

        Santee   say-PRF-HH.AL that Bantee   run   go-PRF-HH.AL

'Santee said that Bantee ran way.' (to a HH person such a teacher)

Allocutive marking is also possible in the complements of factive verbs like 'know', in the complements of nonbridge verbs like 'shout', and on the embedded question complements of a verb like 'ask', as shown in (13). Note that this example has two overt C-like heads, *ki* found in other CP complements, and *kaa,* a question particle also used with matrix question. However, even together they do not interfere with allocutive marking:

(13)   Ram   hamraa-se   puuchh-l-**o**   ki   kaa Santeeaa   jai-t-**o.**

         Ram   me-INS   ask-PRF-H.AL   that   Q   Santee   go-FUT-H.AL

         'Ram asked me if Santee will go.'

Allocutive marking is also possible on adjunct clauses, including temporal clauses and purpose clauses, on relative clauses, and on noun complement clauses used with a noun like 'rumor'. In short, allocutive marking seems to be possible on any sort of finite clause in Magahi, regardless of its position or role in the larger sentence, and regardless of what overt C-like heads or operators might be present (it is compatible with at least embedding *ki*, interrogative *kaa*, purposive *taaki*, and relative Cs or operators such as *jeb* 'when' and the relative pronoun *je*).[2] Alok's structure in (11) fits well with these observations. By putting Hr, the goal of allocutive agreement, low in the left periphery, in FinP rather than in SAP, we capture the fact that it is possible in all finite clauses, not just in matrix clauses and other root like clauses that may have a special extended left periphery. This position for Hr also captures the fact that it makes little or no difference what heads fill the Force position, or what other operators might be present in the higher left periphery in Magahi.

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[2] It seems that finite clauses cannot be used as sentential subjects in Magahi, so the issue of allocutive marking in that context does not arise.

One other detail about allocutive marking in Magahi needs to be mentioned, so that some of our examples below will be understood. This is the fact that allocutive marking is (often preferred but) formally optional in Magahi. For example, (2a) is possible in addition to (2b-d), even when one is talking to a particular determinate addressee (not just in impersonal contexts, like written prose that might be read by anyone). This may seem a bit odd within an agreement analysis, since agreement is generally obligatory when the factors that permit it are in place. For example, internal to Magahi, one cannot leave out the subject agreement seen in (10), the way one can leave out allocutive marking in (2a) or (8a). So something should be said about this.

One might contemplate a theory in which the Hr element in (11) is itself an optional part of the representation of the clause. But that does not seem like the best approach, since allocutive marking is optional even when there is a second person pronoun in the clause, making the addressee grammatically explicit, as shown in (14). In this respect, Magahi is different from Basque, where putting a second person familiar pronoun in the sentence makes it obligatory to have matching allocutive marking on the verb, according to Oyharçabal (1993: ex (7)).

(14)   Toraa   kauphii   chah-ai / chah-au?

         you.DAT   coffee   want-3.NH.S/want.3.NHS-NH.AL

         'Do you want coffee?'

Similarly, we have seen that allocutive marking can appear on both matrix verbs and embedded verbs in Magahi. But in fact allocutive marking on both verbs is optional, and independently so; one can have allocutive marking on the matrix verb but not on the embedded verb, and vice versa, as shown in (15).

(15)   a. Santeeaa   sochk-**au**   ki   Banteeaa   bhag   ge-l-ai/**au**.

            Santee   thought-NH.AL   that   Bantee   run   go-PRF-3.NH.S/3.NH.S.NH.AL

'Santee thought that Bantee went to run.' (said to a peer)

b. Santeeaa sochl-**ai**   ki   Banteeaa   bhag ge-l-**au**.

Santee   thought-3.NH.S that Bantee   run   go-PRF-3.NH.S.NH.AL

'Santee thought that Bantee went to run.' (said to a peer)

It seems very odd to say that one of these clauses has an addressee but the other one does not. Therefore, we want another place to locate the optionality of allocutive agreement.

Alok's proposal, already indicated in (11), is that what is optional is whether the V+T complex raises from T to the Fin head. Whether this movement happens or not is not determined by the superficial facts about morphology and word order in Magahi, since Fin has no overt realization, and Fin and T are adjacent heads in a head final structure. We say, then, that T to Fin raising is what is optional. If it does not happen, then T agrees with the subject but is too far from Hr to agree with it as well. If the head movement does happen, then T can agree with Hr in its derived position, and allocutive agreement does happen.[3] Of course it would be wonderful to find some subtle word order or scope evidence that the verb is in slightly different positions when there is or is not allocutive agreement. We do not have such evidence, but merely offer (11) as a possible concrete implementation.[4] Its details do not matter much for what follows, beyond the basic idea that a DP element Hr is present somewhere in the periphery of the clause where a verbal functional head can agree with it.

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[3] The question also arises whether one can and should give a principled explanation for why Hr triggers agreement on the finite verb, but Sp does not. Miyagawa (2012, 2017) explains this structurally, saying that Sp is higher than Hr, just as a subject is higher than an object (following Speas and Tenny 2003), and the agreeing head is between the two, so that it can agree downward with Hr but not upward with Sp. We could adopt this view too, or its analog, by articulating the structure in (11) a little more, such that Sp and Hr are specifiers of different heads in the C-space. We are not sure that agreement with Sp is ruled out universally though. Rose (2015) discusses a few South American languages in which verbs or C-like particles reflect the gender of the speaker, instead of (or in addition to) the gender of the addressee. We would like to know more about languages like these before we invest too much effort into explaining why agreement is with Hr rather than Sp using UG resources.

[4] Another possibility, suggested to us by Norvin Richards (personal communication), is simply that in cases of multiple agreement it is necessary to establish the first Agree relationship, but a second Agree relationship is optional. That would be fine for our purposes as well.

3. On the relationship of Hr and second person pronouns

So far, then, we have agreement evidence for a DP expressing the addressee in the periphery of all finite clauses in Magahi. The next step in building up our reductive account of indexical shift is claiming that this DP binds second person pronouns in normal argument positions inside the clause. In fact, Baker (2008: sec. 4.3) already proposed essentially this in a different context, offering principles like the following:

(16) a. A pronoun is 2nd person if and only if it is locally bound by Hr (or by 2nd person).

    b. A pronoun is 1st person if and only if it is locally bound by Sp (or by 1st person).

A way of expressing the intuition here post Kratzer (2009) is that there are no "native born" local pronouns; all receive their person features by being variable-bound by something—either an overt DP like *only I*, or a covert one, like Speas and Tenny's Sp and Hr. If we can support this for Magahi, then the binding piece of our analysis in (6) and (7) is motivated apart from considerations of indexical shift.

Suppose then that we take (16a) into Magahi, and combine it with the idea that agreement with Hr shows up as allocutive marking. This makes the prediction that there will never be a mismatch between the features represented by allocutive agreement and the features represented by a second person pronoun in the same clause. The reason is simple: according to (16a), the second person pronoun acquires its features precisely by being bound by Hr. But Hr is also what V+T in Fin agrees with. Therefore the features on the pronoun and the features on the inflected verb must be the same, since both are agreeing with the same element. In contrast, if overt pronouns and allocutive marking access the semantic addressee independently, mismatches are conceivable in special situations where the addressee is complex or ambiguous. In fact, we have been unable to find any cases of mismatch, where the HH pronoun *apne* is used in a clause that

bears NH or H allocutive marking, or when the not-HH pronoun *tu/toraa* is used in a clause that bears HH allocutive marking. So imagine uttering an example like (17b) in a situation where the speaker is having a professor and her child over for tea. Speaking in the presence of both of them, with both in mind, one might offer coffee to the child specifically. Conceivably allocutive agreement would be HH because the professor as well as the child is being talked to, but the pronoun would be NH because it is the child's desire that is being inquired about. But in fact this mismatch is ruled out, as is the reversed one with HH pronoun and NH allocutivity in (17a).

(17)　a.　*Apne-ke　　　kauphii　chah-au?　　　　　　(OK with *toraa* you.NH.DAT)

　　　　　you.HH-DAT　coffee　　want.3.NH.S-NH.AL

　　　　　'Do you want coffee?'

　　　b.　*Toraa　　　　kauphii　chah-ain?　　　(OK with *apne-ke* you.HH-DAT)

　　　　　you.NH.DAT　coffee　　want.3.NH.S-HH.AL

　　　　　'Do you want coffee?'

This is in accordance with the prediction of our theory of allocutive marking conjoined with (16a), where there is binding, hence strict syntactic feature sharing, between Hr and a second person pronoun in the clause.

　　　　Another, more clearly morphosyntactic effect strengthens this conclusion. This is the fact that there can be no allocutive marking on the verb when the subject of the clause is itself a second person pronoun in nominative case. Consider the examples in (18). These show agreement with the subject pronoun in person and honorificity, as seen already in (10). But unlike examples which have a first or third person subject, there is no possibility of having an additional morphological marking in the allocutive slot to register the Hr; the suggested morphological additions to the verb forms in (18) are all ungrammatical.

(18) a. Tu/tohani   jaa-it   h-eN-(*au).

    you.SG/you.PL go-PROG be-2.NH.S-(*NH.AL)

    'You (a peer/peers) are going.'

  b. Tu/tohani   jaa-it   h-a-(*o).

    you.SG/you.PL go-PROG be-2.H.S-(*H.AL)

     'You (a parent/parents) are going.'

  c. Apne   jaa-it   h-thin-(*ain).

    you.HH.SG/PL go-PROG be-2.HH.S-(*HH.AL)

    'You (a professor/professors) are going.'

Of course, additional allocutive agreement would be redundant in these examples, but it is not

clear that that in itself should make them formally impossible. There is a contrast with the

grammatical versions of the examples in (17), which also have second person (dative) subjects:

in (17) allocutive marking is perfectly possible as long as it matches the pronoun, even though it

is just as clear who one is talking to in (17) as it is in (18). Something grammatical is going on.

       The relevant grammatical difference between (17) and (18) is that the experiencer

subjects in (17) have dative case, and hence they do not trigger subject agreement on the verb,

whereas the agentive subjects in nominative case do trigger subject agreement on the verb in

(18). The generalization is stated in (19).

(19)   Allocutive agreement with the addressee is barred if and only if another expression of the

       addressee triggers agreement on the verb.

       This generalization covers grammatical objects in Magahi as well as subjects. Normally

there is no agreement with objects in Magahi, and allocutive marking is possible on a clause with

a second person object:

(20) a. Santeeaa toraa   dekh-l-au/o/*ain.

         Santee   you.(N)H.ACC see-PRF.3.NH.S-NH.AL/H.AL/*HH.AL

         'Santee saw you.'

     b. Santeeaa apne-ke   dekh-l-ain/*au/*o.

         Santee   you.HH-ACC   see-PRF.3.NH.S-HH.AL/*NH.AL/*H.AL

         'Santee saw you.'

However, Alok (2018) shows that the verb can agree with the object when the subject is in dative

case, as with verbs like 'want' (see (17)), and in that particular situation having additional

allocutive agreement on the verb is again barred by (19).

The generalization in (19) also has crosslinguistic generality. For example, it holds also

in Basque—with the instructive wrinkle that Basque has object agreement on the verb as well as

subject agreement, so in Basque there is no allocutive marking in sentences analogous to (20),

with structurally case marked second person objects (Oyharçabal 1993). (19) also works in Tamil

(see McFadden 2017), which is like Magahi rather than Basque in having subject agreement but

not object agreement, and which is also like Magahi in allowing allocutive marking on clauses

with second person objects, but not on clauses with second person subjects. So (19) is valid for

the handful of languages in which allocutivity has been studied from a generative perspective.[5]

All who have discussed this effect have essentially the same intuition about it: it is bad

for the verb to agree twice with the same thing. We agree with this intuition, but believe that an

important theoretical conclusion can be drawn from it: that the Hr element and the 2nd person

pronoun really do count as "the same thing" in some deep grammatical respect. On our view,

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[5] Antonov (2015) claims that the generalization in (19) is particular to Basque, and is not found in the other
languages that he surveys. However, his other languages are all such that (i) allocutive agreement is agreement in
gender, and (ii) subject agreement does not show gender features. Hence Kinyalolo's Generalization as stated in
(21) does not rule out double agreement in these cases, since neither morpheme is predictable from the other.

they count as the same thing because one is a variable bound by the other. Indeed, we propose

that (19) can be deduced from a more general principle of morphosyntax, sometimes called

"Kinyalolo's Generalization" (see Kinyalolo 1991, Carstens 2005). This can be stated as in (21).[6]

(21)   In a word (phonologically defined), AGR on one head is silent if and only if its features

        are predictable from AGR on another head.

The principle/generalization in (21) is motivated in Kilega and other Bantu languages by several

kinds of data superficially rather different from the domain under consideration here. The most

directly analogous type is that Kilega has both C-agreement with a wh-operator and T-agreement

with the subject. For example, (22) has both C-agreement *bu-* with the wh-phrase *búni* 'how' and

T agreement *mú-* with the pro-dropped subject.

(22)   Bú-ni   bú-**mú**-ná-kúbul-ílé   má-zi?

        14-how 14.CA-2.PL.S-MOD-pour-PRF 6-water

        'How could you have poured water?'

The crucial fact for our purposes is what happens if the subject nominal itself is the one that

moves to Spec CP. In that case, one could expect to have both C and T agree with (the two

copies of) this one nominal, as in (23). But this is not what is observed; instead, one finds only

one overt agreement—the one on C (the two are morphologically distinct in class 1).

(23)   Názi   ú-(*á)-ku-kit-aga   bu-bo?

        1.who 1.CA-(*1.S)-PROG-do-HAB   14-that

        'Who usually does that?'

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[6] The formulation in Carstens (2005) is a bit more specific: it says that Agr on the lower head is suppressed if it is predictable from Agr on a higher head. We cannot adopt this, because in our cases it is Agr associated with a higher head/position (Fin) that is suppressed in favor of Agr on a lower head (T). Intuitively, this arrangement seems unsurprising since T-agreement is grammatically required whereas Fin-agreement is optional anyway. However, we leave open what principles might determine which agreement is retained in the general case.

Kinyalolo and Carstens take this to be the result of (21): agreement on T is suppressed because C agrees with the same nominal, rendering the agreement features on T predictable.

The generalization about allocutive agreement in (19) can be taken to be parallel to this, a special case of the more general (21). In fact, the structure of an allocutive example is very similar to the structure of (23) given our analysis, as shown in (24). In both structures, an operator in the clausal periphery triggers agreement on a C-like head (wh on C; Hr on Fin) and binds a variable in Spec TP, which in turn triggers subject agreement on T. The operators are of different kinds, but in both cases one of the agreements is suppressed.

(24)   a. C and T agreement with Wh   b. Allocutive marking and T agreement
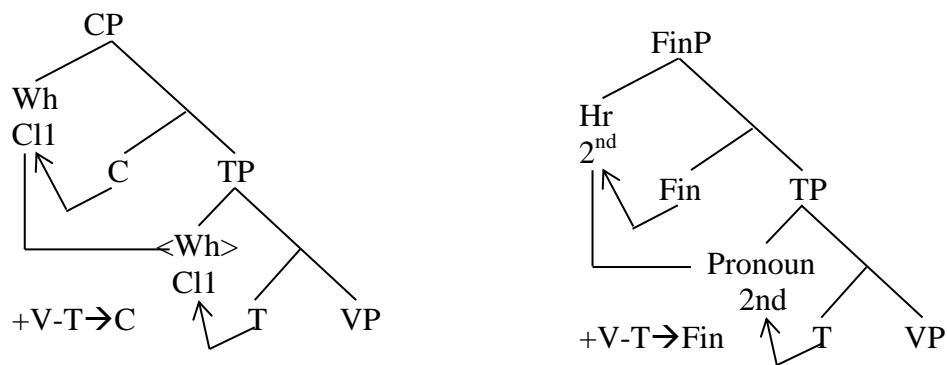
The crucial lesson we want to take from this is that there is a close grammatical relationship—a relationship of variable binding—between Hr and the second person pronoun, analogous to the relationship that a moved wh-phrase has with the copy/variable in argument position that it binds. We take this to be implicit in the meaning of "predictable features" in the statement of (21). It is not enough for the feature values on the two heads to be superficially the same. For example, if one *wh*-moves a singular human NP from object position in Kilega and also has a singular human pronoun in subject position in a sentence like 'Who did she see?', then C and T have the same features (class 1, human, singular), but the agreement on T would not be

suppressed. It is not enough that the features on the two heads be accidentally the same for one to count as being predictable from the other; rather they must be the same by virtue of coming ultimately coming from the same source. That is clearly the case in Kilega, since the two agreed-with positions are copies of the same NP. But it is also true for (24b) in Magahi. So we conclude that Hr must count as "the same" as the second person pronoun in a strong way worthy of comparing to the relationship of a moved wh-phrase and its variable. This motivates our conclusion that there is a relationship of syntactic binding between Hr and second person pronouns inside the clause, as stated above in (16a).

4. Controlled (shifted) allocutive marking.

So far we have shown that there is a covert DP Hr in the periphery of finite clauses in Magahi which the finite verb can agree with, and that this Hr binds second person pronoun inside the clause. Now we add the third major ingredient of our reductive analysis of indexical shift: the fact that the Hr of an embedded clause can be controlled by an argument of the matrix verb.

In almost all of the examples we have seen so far, allocutive agreement expresses the addressee to which the whole sentence is uttered. This is true in embedded clauses as well as in matrix clauses in examples like (3a), repeated here as (25).

(25)   Santeeaa   sochk-**au**   ki   Banteeaa bhag ge-l-**au**.

           Santee   thought-NH.AL that Bantee   run   go-PRF-NH.AL

           'Santee thought that Bantee went to run.' (said to a peer)

The sentence as a whole is addressed to a peer, and this determines the morphology on the embedded verb 'went' as well as the morphology on the matrix verb 'think'. For dyadic verbs like 'think', this is the only possibility. But a triadic verb like 'tell' takes an indirect object as

well and here another possibility arises. In this situation too it is possible for allocutive marking to reflect the matrix addressee:

(26) Santeeaa <u>Banteeaa-ke</u> kahk-**ain** ki Ram-ke Sita-se baat kark-e chah-**ain**.

  Santee Bantee-DAT told-HH.AL that Ram-DAT Sita-INS talk do-INF should-HH.AL

  'Santee told Bantee that Ram should talk to Sita.' (said to a teacher)

But it is also possible for allocutive agreement to show the honorific status of the goal argument of the matrix clause instead of that of the addressee of the sentence as a whole. (27) gives examples of this. In both of them, the allocutive marking on the embedded verb does not match the allocutive marking on the matrix verb, but rather the honorificity status of the goal argument of the matrix verb (see McFadden 2017: ex (19) for a similar example in Tamil).

(27) a. Santeeaa <u>Banteeaa-ke</u> kahk-**ain** ki Ram-ke Sita-se baat kareke chah-<u>au</u>.

    Santee Bantee-DAT told-HH.AL that Ram-DAT Sita-INS talk do.INF should-NH.AL

    'Santee told Bantee that Ram should talk to Sita (said to a teacher).'

  b. Santeeaa <u>profesar saaheb-ke</u> kah-**au** ki Ram Sita-ke dekhl-<u>ain</u> ha-l.

    Santee professor HH-DAT told-NH.AL that Ram Sita-ACC saw-HH.AL be-PRF

    'Santee told the professor that Ram saw Sita.' (said to a peer)

The examples in (27) seem to have a kind of upward long-distance agreement between the downstairs verb and the goal argument of the matrix verb. This violates the locality conditions on Agree according to most theories, if not all. A far more natural implementation, given that Agree with Hr is attested anyway (e.g., in simple matrix clauses) is to say that the lower T/Fin agrees with Hr in (27) as well, but in this case Hr is controlled by the matrix goal, and therefore has the same phi-features as that goal. This relationship between the matrix goal and the Hr in the embedded clause may not be quite identical to the normal sense of control in

English and similar languages—but it has a lot in common with it. Like PRO, Hr is a kind of null pronominal at the edge of a particular type of clause. Moreover, 'tell' is a canonical control verb in many languages (cf. *Mary told John [PRO to buy milk]*). Other verbs that allow this kind of controlled allocutive marking include 'ask', 'convince', and 'remind', which are also canonical object control type verbs.

(28) a. Santeeaa <u>professor-saaheb-se</u> puuchhk-**au** ki   kaa   Ram chal gel-<u>ain</u>

          Santee   professor-HH-INS   ask-NH.AL that what Ram walk went-HH.AL

          'Santee asked the professor if Ram walked.' (spoken to a peer)

    b. Ram <u>John-ke</u>   yaad   di-wa-l-**ain**   ki   Sita   kal

          Ram John-ACC   remember give-CAUS-PRF-HH.AL that Sita tomorrow

          jaait   h-<u>au</u>.

          go-PROG be-NH.AL

          'Ram reminded John that Sita is going tomorrow.'

    A schematic syntactic representation for (27b) then is (29). In contrast, (26) would have a similar gross syntactic structure, but in this case Hr in the embedded clause is not controlled by the matrix goal, but rather is left free, as in (30) (or it is controlled by the matrix Hr; see below).

(29)   [FinP **Hr** Fin [TP Santee T [Prof tell [CP *ki* [FinP **Hr** Fin [Ram   T [Sita see]]]]

            NH Agr:NH   HH   HH Agree:HH

                                     "control"

(30)   [FinP **Hr** Fin [TP Santee T [Bantee tell [CP *ki* [FinP **Hr** Fin [Ram   T [Sita-with talk]]]]

            HH Agr:HH   NH   HH Agr:HH

5. Indexical shift and allocutive agreement

Now we finally come to indexical shift, having explored the syntax of allocutive marking in both simple matrix clauses and in complement clauses. In fact, we now have all the ingredients that we need for our quasi-reductive account of shifted 'you' in Magahi. First, we have a DP (Hr) at

the periphery of any embedded clause in the language, as revealed by allocutive agreement. Second, we have that this DP binds second person pronouns in its domain, as shown by the Kinyalolo's Generalization effect in which the verb can only agree once with the operator (Hr) and the variable it binds ('you'). Third, we have that this DP can be controlled by the goal argument of a verb like 'tell', as shown by the shifted allocutive agreement in (27) and (28). Now put these ingredients together, and we essentially predict the existence of indexical shift of 'you' in the language. This happens when Hr is both controlled by the goal of a 'tell' class verb and binds 'you' in its scope, two things that we independently believe to be possible. Since the goal controls (and therefore binds) Hr and Hr binds 'you', it follows that 'you' must be referentially dependent on the goal argument, by the transitivity of binding/referential dependence. The structure would look like (31), adding the binding piece seen in (24b) to the control piece seen in (30)

(31) $[_{FinP}$ **Hr** Fin $[_{TP}$ Santee T [Prof tell $[_{CP}$ *ki* $[_{FinP}$ **Hr** Fin [Ram T [you   see]]]]
          NH   HH   HH Agr:HH   HH

                                        "control"   binding
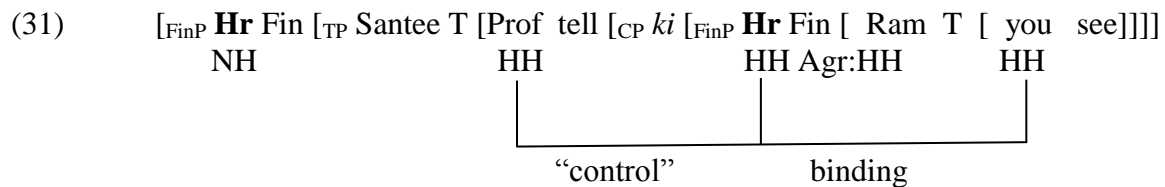
This is essentially the representation that we advertised above in (6) in the introduction; all the pieces are in place. No mysterious "monster" operator of unclear syntactic category and status is needed on this account; rather we have an operator that is independently motivated, which appears in matrix clauses too, but which takes on some special properties when it is embedded (because then control becomes a possibility). This approach to indexical shift is comparable to Koopman and Sportiche's (1989) approach to logophoric pronouns in Abe, and indeed indexical shift and logophoricity are similar/related phenomena according to many.

And of course Magahi does in fact have indexical shift of 'you', precisely in complements of 'tell'-class verbs. Moreover, there are tight relationships between the distribution of allocutive marking and the distribution of indexical shift, just as one would expect from this perspective. This section documents this tight relationship, generalizes the account to shift of first person indexicals, and reflects on some implications of the analysis.

5.1 Basics of indexical shift

First we pause to cover some basics of indexical shift in Magahi. We already showed in the introduction that Magahi allows indexical shift of the pronouns 'I' and 'you' of the by-now-fairly-familiar kind.[7] (32) shows again the shift of 'I' in the complement of a verb like 'say', 'think' or 'dream' to refer to the matrix subject. This is not limited to the verb 'say', as in Amharic and Zazaki; rather it is possible with most if not all attitude and communication verbs, as in the Turkic languages (Uyghur, Sakha). (32) also shows that indexical shift is optional: 'I' can also refer to the utterer of the whole sentence, as in English. In this, Magahi is like most indexical shifting languages, but different from Uyghur (Shlovsky and Sudo 2014).

(32)   Santeeaa sapnaa dekh-kai   ki   ham   Chomsky-se   mil-l-i.

        Santee   dream   saw-3.NH.S that   I   Chomsky-INS   meet-PRF-1.S

        'Santee dreamed that I (= Santee or = speaker) met Chomsky.'

Example (33) gives an example with the verb 'ask' in which 'I' can shift to the asker and 'you' to the askee; see (1b) for a similar example with 'tell'. Here too, indexical shift is optional in that 'I' can also refer to the speaker of the whole sentence and 'you' to the addressee. However, the

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[7] In this paper, we focus on the indexical shift of overt first and second person pronouns. Magahi is a pro-drop language, in which null pronouns are possible in subject positions. Such null pronouns also undergo indexical shift optionally in Magahi, but there are two differences. The first is that in neutral contexts null pronouns usually prefer the shifted reading, all things being equal, whereas overt pronouns are more readily perceived as ambiguous. This seems to be a pragmatic effect such that null pronouns prefer to have sentence-internal antecedents—something observable also for third person (nonindexical) pronouns—perhaps because they cannot bear topic or focus marking.

The second difference between null pronouns and overt ones is that null pronouns allow Shift Together violations of a sort that we do not observe when both pronouns are overt. See note 11 for a remark about this.

example shows a "shift together" restriction, much discussed since Anand and Nevins (2004) and Anand (2006), in that it is two ways ambiguous but not four ways ambiguous. Either 'I' and 'you' both shift to refer to the arguments of 'ask' or neither of them shifts; mixed readings in which 'I' refers to the speaker and 'you' refers to John or in which 'you' refers to the addressee and 'I' refers to Ram are impossible.

(33) Ram John-se   puuchh-kai ki kaa ham toraa   dekh-l-i   he.
      Ram John-INS   ask-3.NH.S that what I   you.ACC see-PRF-1.S be
      'Ram asked John whether I saw you.' (whether Ram saw John, or whether I saw you)

There is by now a fairly standard battery of tests to distinguish true indexical shift from direct quotation, which it can superficially resemble (see Shlenker 1999, 2003, Anand 2006, etc.). One is whether a question word associated with the embedded clause can take scope over the matrix clause to form a direct question. In English direct quotation this is impossible, but in Magahi, as in other languages with indexical shift, it is possible, as shown in (34).[8]

(34) a. Kab   Ram   soc-l-ai   [ki   ham   *t*   mar-b-ai]?
          when Ram   think-PRF-3.NH.S   that I   die-FUT-3.NH.S
          'When does Ram think that I (=Sp or =Ram) will die?' (time of dying questioned).

      b. Kab   Santeeaa Raam-ke   kah-l-ai   ki   tu   mar-b-a?
          when Santee   Ram-DAT   tell-PRF-3.NH.S   that you.(N)H die-FUT-2.H.S
          When did Santee tell Ram that you (=Hr or =Ram) will die? (time of dying Qed)

Another standard test is negative polarity licensing, where one puts an NPI in the embedded clause which is licensed by negation in the matrix clause, so that the embedded clause

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[8] We note that there might be some complications to this test. Some kinds of long distance questions use an indirect dependency/scope marking construction in Magahi, and this may itself interfere with indexical shift. Also whether wh-in-situ is possible or not with matrix scope seems somewhat variable. We mostly use adjunct questions here, where these complications seem less relevant. A full scale study of the varieties of question formation in Magahi and how they may interact with indexical shift should be undertaken at some point.

would not be grammatical as a quotation. (35) shows that when this is done in Magahi shifted readings for the indexical pronouns are still possible, whether 'I' in (35a) or 'you' in (35b).

(35)   a. Banteeaa-ke na   laga h-ai   ki   hamraa kuchhbhii almaari me milt-ai.

Bantee-DAT NEG   seem be-3.S that I.DAT anything   closet   in find-3.NH.S

'It doesn't seem to Bantee that I (=Sp or =Bantee) will find anything in the closet.'

b. Santeeaa Banteeaa-ke   na   kah-kai ki   toraa   koi kitaab paRhe-ke chah-ai.

Santee   Bantee-DAT NEG tell-3.S that you.DAT any book read-ACC should-3.S

'Santee didn't tell Bantee that you (=Hr or =Bantee) should read any book.'

Magahi thus tests out as having genuine indexical shift, not just direct quotation.

There is also a Magahi-specific test that is relevant to this issue, which involves allocutive marking. As mentioned in the introduction and discussed more below, there is a negative interaction between indexical shift and allocutive agreement under an intransitive verb like 'think' or 'say' in Magahi. 'I' in the embedded clause can refer to the same person as the subject of the matrix clause only if allocutive marking is absent on the embedded verb.

(36)   John kahk-au   ki   ham tej   h-i-(#**au**).

John. say-NH.AL that I   smart be-1.S-(#NL.AL)

Not possible as: 'John said that I (=John) am smart.' (spoken to a peer)

This effect would make little sense if there were no true indexical shift in Magahi. Then "I am smart" would have to be a direct quotation in (36)—and then the fact that allocutive agreement is ungrammatical here would become inexplicable, *Ham tej hi-au* being a fine thing to say by itself, simple sentences with first person subjects allowing allocutive agreement as shown in (2). So no explanation of the restriction in (36) would be forthcoming along these lines. In contrast, we show below that an analysis of (36) can be constructed assuming that it involves indexical shift.

This suggests a rather strong conclusion: examples with the form of (36) *cannot* be read as direct quotations. It is not totally clear to us why they cannot be, but it seems that quoted material may need a distinctive intonational contour in Magahi. Based on this, we assume that confusion between syntactic complementation with indexical shift and direct quotation is not a very serious issue in Magahi. Therefore, we do not include wide scope wh-words or NPIs in most of our examples, both of which make sentences harder to construct and interpret.

We conclude that Magahi has indexical shift of the same general sort known to exist in other languages. In other words, it is possible for there to be a so-called "monstrous operator" in the periphery of these embedded complement clauses. Indeed, our claim is that this operator is the same as the phi-feature bearing DP operator that is being agreed with in allocutive marking, as shown in (31). We turn now to further correlational evidence for this.

5.2 The fundamental interaction of indexical shift and allocutive agreement

In fact, there is plenty of evidence of a close relationship between embedded allocutivity and indexical shift. Consider first a ditransitive matrix verb like 'tell'. In this context, we saw that it is possible to have allocutive agreement on the embedded verb that matches allocutive agreement on the matrix verb, but it is also possible for allocutive marking to be shifted to reflect the addressee of the matrix telling event—the goal argument of 'tell'—rather than the addressee of the sentence as a whole. (37) gives two more examples of the latter type, which also have a pronoun 'you' inside the complement clause. In these examples in which the allocutive marking is shifted, the second person pronoun in the embedded clause *must* be shifted too. Hence, (37a) must have the informal form *toraa* 'you' and this must refer to Bantee; (37b) must have the formal form *apne* and this must refer to the professor. Unshifted readings in which a second person pronoun refers to the addressee of the sentence as a whole are impossible here.

29

(37) a. Santeeaa <u>Banteeaa-ke</u> kahk-ain   ki   Ram toraa   dekhl-i-<u>au</u>   ha-l.

         Santee   Bantee-DAT told-HH.AL that Ram you.ACC   saw-1.S-NH.AL be-PRF

         'Santee told Bantee that Ram saw you (=Bantee, not hearer).' (said to a teacher)

     b. Santeeaa <u>profesar saaheb-ke</u> kah-au   ki   Ram apne-ke   dekhl-i-<u>ain</u>   ha-l.

         Santee   professor HH-DAT told-NH.AL that Ram you.HH-ACC saw-1.S-HH.AL be

         'Santee told the professor that Ram saw you (=the professor, not hearer).' (to s peer)

This interdependency is what we expect if Hr is controlled by the goal argument and then binds

second person pronouns in its scope, as shown in (31). Since the goal argument controls Hr, they

have the same features, and the embedded verb records the features that Hr inherits from the goal

as allocutive agreement. A pronoun is only second person if it is bound by Hr (see (16a)), so if

Hr refers to the matrix goal via control, then the second person pronoun must too, resulting in

indexical shift. The two go together because the same element Hr is integrally involved in both.

       Conversely, if the allocutive marking is not shifted, as in (38), then a second person

pronoun inside the embedded clause cannot be shifted either. For example, 'you' in (38) cannot

refer to Bantee given that allocutive marking on the embedded predicate 'should talk' is HH,

reflecting the status of the addressee of the sentence as a whole and matching the allocutive

marking on the matrix verb.

(38)   *Santeeaa <u>Banteeaa-ke</u> kahk-**ain**   ki   Ram-ke   <u>toraa-se</u> baat karke chah-**ain**.

        Santee   Bantee-ACC told-HH.AL that Ram-DAT you-INS talk do.INF should-HH.A L

        'Santee told Bantee that Ram should talk to you (=Bantee).' (said to a teacher)

       It is important to clarify that it is also possible to have shifted pronouns in the embedded

clause if there is no allocutive marking on the embedded clause at all, as in (1). On our analysis,

Hr is still there and is still controlled, but one doesn't see that as directly, simply because

allocutive marking is optional, as discussed above. Recall that we tentatively modelled this by saying that V+T moving to Fin so T can agree with Hr is optional (see (11)).

5.3 Generalizing the account to first person indexical shift

Next consider the examples in (39), which are like (37) except that they have first person indexicals in the complement clause as well as second person ones. These can undergo indexical shift as well, and in fact must do so when Hr is controlled and 'you' undergoes indexical shift.[9]

(39) a. Santeeaa <u>Banteeaa-ke</u> kahk-ain   ki   ham toraa   dekhl-i-<u>au</u>   ha-l.

         Santee   Bantee-DAT told-HH.AL that I   you.ACC saw-1.S-NH.AL be-PRF

         'Santee told Bantee that I (=Santee) saw you (=Bantee).' (said to a teacher)

      b. Santeeaa <u>profesar saaheb-ke</u> kah-au   ki ham apne-ke   dekhl-i-<u>ain</u>   hal.

         Santee   professor HH-DAT told-NH.AL that I   you.HH-ACC saw-1.S-HH.AL be

         'Santee told the professor that I (=Santee) saw you (=the professor). (to a peer)
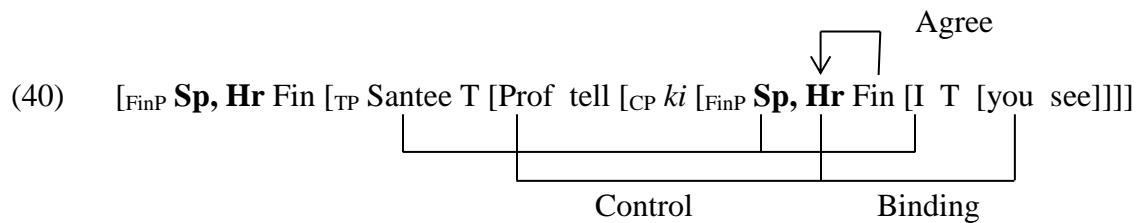
This is the familiar "Shift Together" effect, in the sense of Anand and Nevins (2004) and Anand (2006). We observe, then, that allocutivity is thoroughly entwined with second person indexical shift, and second person indexical shift is thoroughly entwined with first person indexical shift. It behooves us, then to generalize our account from second person pronouns to first person pronouns—as indeed is desirable anyway.

We do this in a relatively straightforward way. Just as Speas and Tenny (2003) and related work says that there is a Hr operator at the edge of (some) finite clauses, so they also say that there is a Sp operator at the edge of these clauses. The embedded Fin/T in Magahi does not happen to agree with Sp the way it does with Hr, but that may be a coincidence; see Rose (2015)

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[9] We note that implicit goal arguments can also control indexical shift to some degree in Magahi; such goals tend to refer to the speaker. For example, if 'Bantee-DAT' in omitted in (1a) (the same as (39a), but with no allocutive marking), then the sentence can have a reading in which Santee says (implicitly to the speaker) that he, Santee, saw the speaker.   We generally put this sort of reading aside.

for some South American languages in which a verbal/clausal head apparently does agree with Sp, thereby manifesting the gender features of the speaker of the clause. Then, just as Hr binds second person pronouns in its domain, so Sp binds first person pronouns in its domain, as stated already in (16b), after Baker (2008). Finally, just as the goal of a verb like 'tell' can control the Hr operator, a species of object control, so the agent of a verb like 'tell' and plenty of others can control the Sp operator. The result of these two dependencies is that the 'I' in the embedded clause is referentially dependent on the subject of the matrix clause by transitivity of binding. In this way, the reductive mechanisms we have proposed for 'you' shift can perfectly well be used for 'I' shift as well, even though there is no direct evidence from allocutive agreement for the mediating DP in the case of 'I'. But of course most indexical-shifting languages do not have even allocutive agreement; we are lucky to have agreement with at least one of these DPs to take advantage of in Magahi. The generalized analysis is shown in (40) (=(7) above).

Agree

(40)   [$_{\text{FinP}}$ **Sp, Hr** Fin [$_{\text{TP}}$ Santee T [Prof tell [$_{\text{CP}}$ *ki* [$_{\text{FinP}}$ **Sp, Hr** Fin [I T [you see]]]]]

Control   Binding

Put in these terms, the Shift Together phenomenon amounts to the generalization that Hr in the embedded clause is controlled by the matrix goal if and only if Sp in the embedded clause is controlled by the matrix subject. It is not entirely obvious why this should be, on theoretical grounds. However, it is also not obvious to us why this should be on previous theories, in which indexical shift is accomplished by a nonnominal context shifting operator.[10] We leave this as an issue for future work, simply stating it as a descriptive generalization for now.[11]

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[10] For example, Anand (2006) stipulates that there are different operators: Op$_{\text{PER}}$, which shifts both 'I' and 'you', and Op$_{\text{AUTH}}$, which shifts 'I' only. Then whether this kind of shift together happens or not is a lexical property of which operator is present—and it is not clear why an Op$_{\text{ADDR}}$ would not also be possible. Deal (2017) posits Op$_{\text{ADDR}}$ and

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(41)   *Shift Together:* If one overt indexical from the set {I, you} in CP_x gets reference from an

argument of the superordinate verb that selects CP_x via Sp and Hr operators at the

periphery of CP_x, then all such indexicals inside CP_x must get reference from arguments

of that superordinate verb.

There are other signs of a control or control-like relation at work in first-person indexical

shift; indeed, there may even be more evidence for this than there is for second-person shift,

since first-person shift can happen with a wider range of verbs. In particular, we claim that the

generalization in (42) holds.

(42)   An NP controls Sp to give indexical shift of first person pronouns only if NP *is a*

syntactic subject near Sp.

This makes sense if something akin to syntactic control is at work, since control involves

grammatical functions, as well as locality conditions and thematic roles. A purely semantic

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Op_{AUTH} as separate operators (as we do, more or less) but says that Op_{ADDR} is higher in the functional architecture of the clause than Op_{AUTH}, so it is present only if Op_{AUTH} is. But it is not clear to us why the functional hierarchy should be this way rather than the reverse, nor do we deem it certain that higher functional heads can never be present when lower functional heads are not; the optional presence of Neg in the middle of the clause is a familiar possible instance. (Indeed Deal herself does not stick strictly to this principle when it comes to C, which plays a crucial role in *de se* interpretations in her theory.) That is why we say that we don't think that anyone has yet gotten to the bottom of Shift Together effects. The crosslinguistic empirical situation is also complex, with Slave behaving differently from Uyghur and Magahi when it comes to the treatment of 'you' under a verb like 'think' (Rice 1989).

We can offer a conjecture about where progress might come on this. We can imagine a variant of our theory in which the fundamental control relationship is not between the arguments of a verb like 'tell' and the Sp/Hr operators in FinP, but rather between the verb 'tell' itself and the head Fin. Then there would be a kind of distribution principle to the effect that if head X controls head Y, then the arguments of X control the corresponding arguments of Y (if any). This could give Shift Together. In addition, the fact that there are contexts where we see 'I' shift without 'you' shift but few or none where we see 'you' shift but not 'I' shift could perhaps be derived from the fact about lexical semantics/theta-theory that many verbs have agent/experiencer subjects but no goal argument, whereas few or none have a goal argument but no agent/experiencer argument (although 'hear' in Magahi is a possible case). However, it would be a big project to develop a full theory of Sp/Hr control along these lines and show how it relates to familiar instances of control, so we leave this for future work.

[11] (41) recalls the Shift Together generalizations of Anand and Nevins (2004), Anand (2006), and Deal (2017, 2018), but it avoids referring to contexts in the sense of Kaplan, which we tentatively replace with Sp and Hr.

As mentioned in note 7, Shift Together is not always obeyed in Magahi when one of the indexicals is a null pronoun in subject position, licensed by agreement on T, and its antecedent is the subject or object of the immediately superordinate clause. This is an interesting phenomenon that we do not give an analysis of here. We conjecture that this phenomenon may be akin to the "finite control" found in languages like Hebrew (see Landau 2004), where the null subject may be PRO rather than pro. This element can perhaps be controlled by a matrix argument more directly, without using Sp or Hr as intermediaries, or at least without using them up.

alternative would be that a first person pronoun inside a clause headed by OP$_{AUTH}$ refers to the author of the clause. But there are several situations in which one can find potential mismatches between the grammatical function of subject and a semantic/pragmatic notion of the source or author of some propositional content.[12] We mention three.[13]

The first involves contrasting the subject of a verb like 'say' and the possessor of the subject of a verb like 'say'. Consider the two English sentences in (43). In both sentences, Mary is the source /author of the information that she will arrive tomorrow. However, in one case, *Mary* is the subject of the matrix verb, whereas in the other *Mary* is the possessor of the subject of the matrix verb, a different syntactic relation.

(43)   a. Mary said that she will arrive tomorrow.

        b. Mary's letter said that she will arrive tomorrow.

Now with this in mind, consider Magahi. We have seen that first person pronouns can shift to refer to the subject of 'say'/'tell' (see e.g. (12)). In contrast, (44) shows that a first person pronoun cannot shift to the possessor of the subject of 'say'/'tell', even when the possessor is the source of the information expressed by the CP complement—the author in an intuitive sense. [14]

(44)   Santeeaa-ke imel Banteeaa -ke batal-kai   ki   ham parichha me fel ho gel-i.

        Santee-GEN email Bantee-DAT told-3.NH.S that I   exam   in fail be go-1.S

        'The email of Santee told Bantee that I (not =Santee) passed the exam.'

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[12] This is also what primarily distinguishes our view from that of Sundaresan (to appear). Like us, she emphasizes the syntactic aspects of indexical shift and posits a covert pronominal element in the C-space that can be agreed with. However, she claims that the relationship of the covert pronominal and its antecedent is unconstrained discourse-pragmatic coreference. As far as we can tell, her view would not cover the restrictions we document for Magahi in this section. (She may be right for Tamil *taan*, a long distance anaphor; we do not take a stand on this.)

[13] We got the idea of these particular tests from Diercks's (2014) study of complementizer agreement in Lubukusu. He uses these tests (among others) to show that C agrees with an operator that is referentially dependent on a higher subject, rather than with a semantically/pragmatically defined "logophoric center".

[14] Interestingly, indexical-shift is possible in (44) if the matrix subject is 'Santee's face' rather than 'Santee's letter'. Maybe Santee's face is identical to Santee in a way that his letter or email is not. We leave open how best to accommodate this fact.

This suggests that something like syntactic control is at work in indexical shift in Magahi, since grammatical function plays a role as well as semantic sourcehood (compare English: *Mary$_i$ promised [PRO$_i$ to come soon]* is fine, but **Mary$_i$'s letter promised [PRO$_i$ to come soon]* is not).

A second relevant comparison is a verb of speaking like 'tell' with the verb 'hear'. These verbs are opposites of each other when it comes to how the source and goal of the communicative act are associated with the grammatical functions of subject and oblique object. In (45a) the source of the information is the subject and the receiver is a PP, whereas in (45b) the source of the information is a PP and the receiver is the subject.

(45)   a.   Mary said to John that she will come tomorrow.

        b.   John heard from Mary that she will come tomorrow.

Now if it is only semantic source/authorship that is crucial for indexical shift of 'I', shifted 'I' should refer to Mary in both of these cases. In contrast, if subjecthood plays an important role, then 'I' should refer to 'Mary' in (45a) but to 'John' in (45b). (Or both factors may play a role in some kind of combination; this may sometimes the case.) Again, grammatical function clearly plays a role in indexical shift in Magahi. (46a) shows that 'I' can shift to the subject of 'hear' as well as 'say'/'tell'; (46b) shows that 'I' cannot by itself shift to the PP source.

(46)   a.   Santeeaa sun-kai   ki   ham   parichhaa paas ho   ge-l-i.

              Santee   heard-3.NH.S that I   exam   pass be go-PRF-1.S

              'Santee heard that I (=Santee, or =speaker) passed the exam'.

        b.   Santeeaa   Banteeaa- se sun-kai   ki   ham parichha paas ho ge-l-i

              Santee   Bantee-from heard-3.NH.S that I   exam   pass be go-PRF-1.S

              'Santee heard from Bantee that I (=Santee, not =Bantee) passed the exam.'

Here too, grammatical function has at least as much influence on how indexical shift happens as an independently characterizable semantic sense of author does.

A third consideration comes from comparing lexical causatives with syntactic causatives. Compare a sentence with the verb 'convince' with a sentence with a periphrastic construction 'cause to think'. In gross semantic terms, the two can be similar: to convince X that Y is roughly to cause X to think that Y; see (47). But again, the grammatical relations are different: the person whose thoughts are being molded is a kind of subject in (47b) (the subject of the small clause/vP built around 'think') whereas it is only the object of 'convince' in (47a). If subjecthood is important for indexical shift of 'I', we might find 'I' shifting to Sue in (47b), but this should be impossible in (47a), where 'I' should only shift to Mary. In contrast, if authors and holders of mental states are all that is crucial, then 'Sue' might well be the focus of indexical shift in both.

(47)   a.   Mary convinced Sue that she will pass the test tomorrow.

        b.   Mary made Sue think that she will pass the test tomorrow.

Once again, subjecthood turns out to be important for indexical shift. (48) has a matrix predicate like 'convince' (a kind of light verb construction), where the attitude holder is always a syntactic object. Here shifted 'I' can refer to the convincer, but not to the convincee.

(48)   Santeeaa Banteeaa-ke bharosa de-l-kai   ki   ham parichha paas ho gel-i.

        Santee   Bantee-DAT trust   give-PRF-3.NH.S that I   exam   pass be went-1.S

        'Santee convinced Bantee that I (=Santee, not = Bantee) passed the exam.'

In contrast, (49) shows that in Magahi's syntactic (or productive morphological) causative, in which the causee is case-marked like an object (a kind of ECM) but is (presumably) a small-clause subject syntactically, 'I' can shift to the causee.

(49)   Santeeaa Banteeaa ke   soch-wa-l-kai   ki   ham parichha paas ho gel-i.

Santee   Bantee-ACC think-CAUS-PRF-3.NH.S that I   exam   pass be went-1.S

'Santee made Bantee think that I (=Santee or = Bantee) passed the exam.'

Again the subjecthood of the "antecedent" of a shifted indexical seems to be an important factor, suggesting a syntactic relationship of control. (It remains to determine why the controller of Sp is always or almost always a subject, not an object or oblique in the matrix clause, since that is not uniformly true of canonical control of PRO; perhaps some notion of thematic matching is relevant here, with agents/experiencers corresponding better to Sp than to Hr; see note 9).

There is one other important way in which indexical shift of 'I' is like syntactic control. It can be shown that only the closest subject can control Sp. So consider the sentence in (50).

(50)   Santeeaa socha h-ai   ki   Banteeaa hamar   baabaa-ke   kah-kai
        Santee   think be-3.NH.S that Bantee   my.GEN grandfather-DAT told-3.NH.S
        ki   ham   igjaam me phel ho   ge-l-i.
        that I   exam   in   fail happen go-PRF-1.S.

'Santee thinks that Bantee told my grandfather that I failed the exam.'

Here the representation should contain one matrix Sp and two embedded Sps, one in the FinP complement of 'think' and one in the FinP complement of 'told' (and Hrs too, not considered here). Now suppose that a Sp can be bound by a subject, but there is no control-like locality condition on this relationship. Then (50) could have a representation like (51), where the lower embedded Sp is bound by *Santee*, but higher embedded Sp is not, but is unshifted.

(51) Sp_k $Santee_i$ think [Sp_k that Bantee my_k grandfather-DAT told [Sp_i that I_i failed exam]]

If this were possible, then (50) should have a reading in which 'my' in the intermediate clause refers to the speaker (as is possible in simpler examples) but 'I' in the most embedded clause refers to Santee. But this is impossible: 'my' and 'I' either both shift, or neither of them does, even when they are in different clauses. This shows that the shifted-to subject and the shifted

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operator Sp must be local to each other in a way that is not characteristic of bound pronoun anaphora, but is characteristic of control (*John thinks that Mary expects [PRO to come]* can't have *John* as controller of PRO, but only the closest subject *Mary*.) This example does not distinguish our view from standard accounts of indexical shift (see Anand and Nevins 2004 and Anand 2006 for similar examples in Zazaki), but it fits with an account in which a control relation plays a significant role (it does distinguish our view from that of Sundaresan to appear).

A similar conclusion can be drawn from an example like (52).

(52)   Santeeaa Banteeaa-se kah-e-ke   ummid kar h-ai   ki   ham parichha paas
       Santee   Bantee-INS say-INF GEN expect do be-3.NH.S that I   exam   pass
       ho   ge-l-i.
       happen go-PRF-1.S

'Santee expects Bantee to say that I (=Bantee, not=Santee) passed the exam.'

Here 'expect', although an attitude type predicate, takes a nonfinite clause as its complement. Therefore, no Sp (or Hr) operator is present in the periphery of this clause, since this is a property of finite FinP only (see also below). Thus there is only one controllable Sp here, in Spec FinP of the *ki* clause, and the closest subject to that is 'Bantee', the oblique subject of nominalized 'say', not 'Santee', the subject of 'expect'. If a control-like locality restriction is at work here, 'I' should be able to shift to Bantee but not to Santee; if there is no such locality restriction, 'I' could shift to Santee. It is clearly the first prediction that is the correct one.

Overall, then, we have converging evidence for a control-type relation between the subject of a verb and the Sp of the verb's complement—parallel to the relation between the goal of a 'tell' type verb and the Hr of its complement—even though agreement does not reveal this.

5.4 More interactions of allocutivity and indexical shift

Now that we are equiped with a proposal about how first person indexical shift works as well as second person indexical shift, we gain access to a richer set of examples to show that there is an intimate relationship between where allocutive marking is possible and where indexical shift is possible, supplementing our "instant gratification" examples using 'tell' type verbs in 5.2.

Consider, then, complements of verbs like 'think' and 'say'. We have seen that these have a kind of negative interaction between allocutive marking and indexical shift: allocutive on the embedded verb is possible if and only if the embedded pronoun 'I' is not shifted, as in (53).

(53) John   socha h-<u>o</u>   ki   ham tej   h-i-<u>o</u>.   (see also (4), (36))

        John   think   be-H.AL that I   smart be-1.S-H.AL

        'John thinks that I (=speaker, not =John) am smart.' (spoken to grandfather)

Now in this context where allocutive marking is not allowed, neither is a second person pronoun. So 'you' is impossible in (54), whatever its interpretation, as long as 'I' is shifted to 'Santee'.

(54) #Santeeaa soch-it   ho-t-ai   ki   ham toraa   kal   dekh-l-i.

   Santee   think-PROG be-FUT-3.S that I   you.ACC yesterday see-PRF-1.S

        Not: 'Santee must be thinking that I (=Santee) saw you (any meaning) yesterday.'

        Only OK as: 'Santee must be thinking that I (=speaker) saw you (=addressee) yesterday.'

Again, 'you' and allocutive marking have closely related distributions.

We can redescribe what is going on here in light of what we know about 'tell'. In fact, we have to consider two subcases of the generalization that one cannot have allocutive agreement under a verb like 'think' if a first person pronoun is shifted. On the one hand, it is impossible to have an unshifted allocutive in this situation; this is what is displayed in (53), where the embedded verb has the same allocutive marking as the matrix verb does. This is essentially like what we saw with 'tell'; if allocutive is unshifted, then pronouns must be unshifted too (see

(38)). On the other hand, it is impossible to have a shifted allocutive marking under 'think' and 'say'. Intuitively, it is clear why: there is no explicit addressee of the event denoted by the matrix verb to shift to. In our syntactic terms, there is no goal argument to control Hr in this case. The Sp operator can be controlled, but when it is a contradictory situation arises with respect to Hr. Shift Together implies that Hr should be controlled by an argument of the verb too, but there is no controller for it (except for the possibility of an implicit goal with 'say', as mentioned in note 9). In this situation, Hr ends up as defective, with no features and no reference. Since it has no features, allocutive agreement with it does not apply; since it has no reference, second person pronouns bound by it are impossible. This is sketched in (55).

(55)   [FinP **Sp, Hr** Fin [TP Santee T [think [CP *ki* [FinP **Sp, Hr** Fin [I   T [you see]]]]
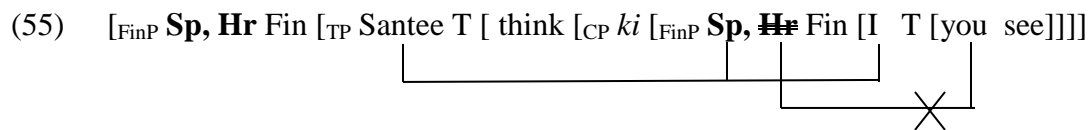
Although there is more to understand about the nature of the control relationship (and the source of Shift Together effects; see note 9), what we want to emphasize is that where allocutive agreement is impossible, second person pronouns are also impossible. This supports our view that there is a tight causal link between the two. (The badness of 'you' where 'I' has been shifted has been reported before for other languages: it is also seen in Uyghur and Nez Perce, although not in Slave; see Sudo (2012: 231-236) and Deal (2017: 40-43) for discussion.)

Yet another type of evidence for allocutivity and indexical shift being mediated through a single Hr element comes from nonfinite complements. We saw above that allocutive marking is impossible on infinitival and gerundival complements; this is seen again in (56).

(56)   Santeeaa   jaayel   chaha   h-au/o/ain   (see also (9))

        Santee   go.INF want   be.3.NH.S-NH.AL/H.AL/HH.AL

        'Santee wants to go.'

There are two possible views about this. One is that there is an Hr present in the periphery of the nonfinite clause, but nonfinite T/Fin is not a probe for Agree; as a result, it cannot agree with Hr, just as it cannot with its subject. The second, stronger view is that Hr and with it Sp are not even present in the periphery of nonfinite clauses, but only in Spec FinP when Fin is finite. Suppose we take this second view, and combine it with our proposal that Hr and Sp are the essential vehicles of indexical shift. Then we derive the prediction that indexical shift should be impossible in nonfinite complements. In fact, this is true, as shown in (57). There can be first person pronouns in the complement clause, but they cannot refer to the subject of the matrix clause, but only to the speaker of the sentence as a whole. (The issue of shifted 'you' does not arise here because there is no goal/addressee in the matrix clause; in this respect, 'want' and 'expect' are expected to behave more like 'think' than like 'tell' and 'ask'.)

(57) a. Santeeaa u   kitab-waa je   ham paRh-l-i   ha-l   paRh-al chaaha h-ai

          Santee   DEM book-DEF REL I   read-PRF-1.S be-PRF read-INF want   be-3.S

          'Santee wants to read the book that I (=speaker, not=Santee) read.'

      b. Santeeaa Banteeaa-se hamar bahini-ke   sahariyaa me dekh-e-ke   ummid   kara h-ai

          Santee   Bantee-INS my   sister-ACC town   in   see-INF-ACC expect do be-3.S

          'Santee expects Bantee to find my (= speaker's, not=Santee's) sister in town.'

This does not obviously follow from a simple semantic characterization of indexical shift, since the subjects of 'want' and 'expect' are clearly attitude holders and perspective bearers—the kind of argument that indexicals can shift to. Indeed, in Slave where 'want' takes a finite complement, indexical shift is possible in the complement of 'want' (Rice 1989:1280). So there is something partially syntactic limiting indexical shift here. We take it to be significant that the kind of complement that does not allow allocutive marking does not allow indexical shift either, whereas

the kind that allows allocutive marking also allows indexical shift. That makes sense if the two are related in the way that we have proposed.

Examples like (57) provide us with an opportunity to comment briefly on an alternative way of accounting for the tight relationship between allocutivity and indexical shift, suggested to us by Amy Rose Deal (semantics workshop 2017). She suggests that allocutivity is the result of having what is essentially a second person pronoun as a null DP in the periphery of a finite clause. This pronoun is not itself the vehicle of indexical shift, but it falls within the scope of a monstrous operator which is also at the edge of an embedded clause, slightly above the pronoun. As such, the null allocutive pronoun can undergo indexical shift, just as second person pronouns in conventional argument positions can. From this perspective, the fact that second person pronouns shift if and only if allocutive marking shifts is essentially another Shift Together effect, similar to the fact that two 'you's must corefer in an example like 'Santee told Bantee that your sister can help you.' Either both of the second person pronouns shift (if a monstrous operator is generated) or neither of them does (if no monstrous operator is generated). The two alternative views are compared schematically in (58).

(58)   a.   tell Chris [$_{CP}$ (Op$_{ADDR}$) [$_{AllocP}$ [you] Alloc [I saw you]]]]   Op$_{ADDR}$ optional (ARD)

        b.   tell Chris$_k$ [$_{FinP}$ Hr$_i$ Fin [I saw you$_i$]]   control makes i=k or not.   (us)

A conceptual/theoretical reason to prefer (58b), we claim, is that it is more parsimonious: it assumes just one null element (Hr) in the clause periphery, rather than two (Op$_{ADDR}$ and you-Alloc).[15] A positive effect of this is that it draws a tighter, hence potentially more explanatory connection between the two phenomena. In Deal's version in (58a), one could imagine a clause

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[15] Of course, parsimony judgments are highly dependent on one's background assumptions. Amy Rose Deal, for example, clearly finds (58a) more parsimonious (or at least preferable) because it is compatible with existing semantic proposals for what Op$_{ADDR}$ is, and more generally how indexicals work. However, we assume that it would be perfectly possible to develop a plausible semantics for (58b) (and Kratzer p.c. and Pietrowski p.c. think so too). We leave that for future research, however.

type that could have Op$_{ADDR}$ without AllocP, where indexical shift could happen without the possibility of allocutive marking. The infinitival complements in (57) could be a case in point. According to the alternative view, they could conceivably have had Op$_{ADDR}$, even though they cannot have the allocutive projection, so there is no firm prediction that indexical shift would be bad in (57). It is thus something of a coincidence on this view that the same clauses that disallow allocutive marking also disallow indexical shift. There is less room for this kind of mismatch in the (58b) version—and in fact such mismatches are not attested in Magahi, as far as we can tell.

In summary, we have considered the following cases:

(59)   a. 'tell' type verbs: indexicals shift if and only allocutive marking shifts

       b. 'think' type verbs: 'I' can shift, but this rules out both allocutive marking and 'you'

       c. 'want'/'consider' verbs: allocutive is impossible; so is indexical shift.

These are three different patterns, but in all three there is a close parallelism between the possibility of allocutive marking and whether indexical shift happens. This is as expected given that allocutive marking is agreement with the very operator that mediates the indexical shift of 'you' (and Sp and Hr are packaged together), as we claim.

6. Evidence that embedded Sp and Hr are always controlled

So far we have discussed two things that can happen to Hr (and, by extension, Sp). First, Hr can simply denote the addressee of the sentence as a whole; this is always the case for Hr in a matrix clause in particular. Alternatively, if Hr is in an embedded clause, it can be controlled by the superordinate goal (and Sp by the superordinate subject). But what about embedded Hrs (and Sps) when this control does not happen? Overt allocutive marking shows that they too express the matrix addressee, but how? Two plausible possibilities come to mind. One is that uncontrolled Hrs can always intrinsically denote the addressee, wherever they are. The other

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possibility is that an embedded Hr that is not controlled by a goal argument expresses the addressee by being bound by the matrix Hr, so that it inherits reference to the addressee from that higher Hr. In this final section we present evidence in favor of the second view—a view that has potential implications for unshifted indexicals even in a language like English.

The relevant evidence comes from structures with three levels of embedding, with one attitude verb embedded under another one. The verb in the highest clause is 'think', the kind that can control the Sp of its complement, but not the Hr, as shown in (55). The intermediate clause contains an indexical pronoun 'I', which can reveal whether this control has happened or not. The question of interest is what can happen with allocutive marking in the most deeply embedded clause. Relevant examples are in (60). (60a) shows that when the subject of the intermediate clause has a shifted reading, allocutive marking is impossible in the most deeply embedded clause. In contrast, (60b) shows that if the subject of the intermediate clause does not have a shifted reading, then allocutive marking is possible on the most deeply embedded clause. This allocutive marking matches the allocutive marking on the higher verbs (if any).
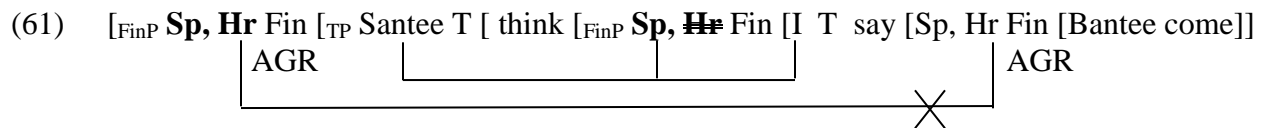
(60) a. Santeeaa socha h-o   ki   ham kah-l-i   ki   Banteeaa ait-ai/*o

Santee   think be-H.AL that I   say-PRF-1.S that Bantee come.FUT-3.S/*H.AL

'Santee thinks that I (=Santee) said that Bantee will come.' (no Alloc).

b. Santeeaa socha h-o   ki   ham kah-l-i-o   ki   Banteeaa ait-o.

Santee   think be-H.AL that I   say-PRF-1.S-H.AL that Bantee come.FUT-H.AL

'Santee thinks that I (=speaker) said that Bantee will come.' (Alloc OK).

In one sense, this pattern is not surprising: these facts are parallel to what we have seen in simpler two-clause structures. (4)/(53) shows that if 'I' is shifted in the complement of 'think', one cannot have allocutive marking on the verb of that complement; (60a) shows that one also

cannot have allocutive marking on a more deeply embedded clause. (4)/(53) also shows that if an indexical is unshifted in a complement clause, one can have (unshifted) allocutive marking on that clause; (60b) shows that one can also have the same allocutive marking on the lower clause.

However, these sentences do have an implication for the grammar of Hr (and Sp). Consider what is happening in the FinP region of the lowest clause in (60). (60b) shows that it is possible to have Hr in Spec FinP in this clause; otherwise, there would be nothing there for the lowest verb to agree with. This is expected: there is no reason to think that this FinP should be intrinsically different from any other finite FinP in the language. But now consider why allocutive marking is impossible in (60a). It is not because there can be no Hr in Spec FinP here, given that the structure of this embedded clause and its relationship to the verb that selects it is locally the same as in (60b); the only difference is higher up, in the relationship that the middle CP has to the highest verb and its arguments. So the problem is not that there is no Hr; rather it must be that that Hr has no proper referent/antecedent. The structure must look as follows:

(61)   [$_{FinP}$ **Sp, Hr** Fin [$_{TP}$ Santee T [think [$_{FinP}$ **Sp, ~~Hr~~** Fin [I T say [Sp, Hr Fin [Bantee come]]
        | AGR | | | | AGR
        └──────────────────────────┴─────────────────────┘   ╳

This answers, we claim, the question posed at the beginning of this section. Uncontrolled Hr must not be able to denote the addressee directly wherever it is. If it could, (60a) should be possible (given that 'say' doesn't necessarily control Sp and Hr in Magahi: shifting is optional). However, if we claim that embedded Hr can denote the addressee only by virtue of being bound by a higher Hr that does so, then this restriction becomes explicable. In (60a)/(61), the intermediate Hr does not denote the ultimate addressee because control by the argument(s) of 'think' has happened. Nevertheless, this Hr's presence prevents the highest Hr from binding the lowest one because of a kind of relativized minimality or defective intervention effect, in which a

relationship between two elements cannot be established over another element of the same type (cf. Rizzi 1990, Chomsky 1995, 2000, 2001). We infer that only unembedded Hrs denote the addressee directly, and embedded ones do so only if they can enter into the right relationship with higher Hrs. Presumably this holds for Sp too: if it is in an embedded clause, it must be bound by the immediately superordinate Sp in order to express the top-level speaker.

Additional data confirms that the locality restriction seen here is a relative one, of the Relativized Minimality (RM) type, rather than an absolute one, of the Phase Impenetrability Condition (PIC) type.[16] Consider the possibility of structures that are similar to (60)/(61), but where the middle clause is an infinitval clause, as in (62) with the structure sketched in (63).

(62)   a. Santeeaa kah-e   laa tay   kark-o   ki Banteeaa ai-t-o

Santee   say-INF for decide do-H.AL that Bantee   come-FUT-H.AL

'Santee decided to say that Bantee will come.'

b.   Ham John-se   kah-e-ke   ummiid kara h-i-o

I   John-INS   say-INF-ACC expect   do   be-1.S-H.AL

ki   Santeeaa ai-t-o.

that Santee   come-FUT-H.AL

'I expect John to say that Santee will come.'

(63)   [FinP **Sp, Hr** Fin [TP Santee T [decide [CP PRO say [FinP Sp, Hr Fin [Bunty T come]]
          |AGR |_____| |AGR
          |_____|

We have seen that nonfinite clauses never show allocutive agreement on the nonfinite verb, and they are never a domain for indexical shift in Magahi. Therefore, we said that infinitival clauses

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[16] There would also be a technical problem with attributing locality effects on Hr and Sp binding to PIC This is that the phase boundary induced by v should prevent the Hr of a given clause from being bound even by the Hr of the next highest clause. To fix this, one would either have to deny that transitive v is a phase head or say that there are Sp and Hr operators at the edge of vP as well as at the edge of CP—an otherwise unmotivated complication.

do not have Sp and Hr operators of their own; those only reside in FinP of a finite clause.[17] The

question posed by (62)/(63), then, is whether allocutive marking on the lowest clause is possible

matching allocutive marking on the highest clause, despite the intervention of the infinitival

clause. In fact, this is perfectly possible in (62). Now the distance between the Hr associated

with the lowest clause and the Hr associated with the highest verb in (62)/(63) measured in

absolute terms is very similar to the distance between them in (60)/(61). In particular, the

nonfinite CP complement associated with 'decide' or 'expect' is probably a phase as much as the

finite CP complement of 'think' is.[18] Nevertheless, the matrix Hr can bind the embedded Hr in

(62)/(63) but not in (60)/(61). This shows that it is presence of a defective Hr that has the

blocking effect, not the presence of phase boundaries. In other words, the locality effect here is

of the Relativized Minimality type, not the PIC type. (We leave open exactly what kind of

"binding" relation this is, such that it is sensitive to RM, but not the PIC.)

Pursuing the matter one step farther, we observe that indexical shift of 'you' is once again

parallel to allocutive marking, just as we expect. Thus, (64) shows that in a three clause structure,

indexical shift in the middle clause makes it impossible to have an unshifted indexical in the

lowest clause. This is a kind of "shift together", but across clausal boundaries; in previous

literature, the phenomenon is known as "No Intervening Binder" (Anand 2006).

(64)   Santeeaa socha h-ai   ki   ham   kah-l-i   ki   tu   aim-eN.

        Santee   think   be-3.NH.S that I   say-PRF-1.S   that you   come-2.NH.S

        'Santee thinks that I (=speaker, not =Santee) said that you (=addressee) will come.'

---

[17] The alternative is to say that infinitives can have Sp and Hr, but T[–finite] cannot agree with them and they must
always be bound by the subordinate Sp and Hr, never controlled by the arguments of the superordinate verb. This
alternative is not entirely ruled out, but we don't know any principled reason for the stipulation about control.

[18] This might not be true if the infinitval complements in (62) were restructuring constructions. But that is not very
plausible for these particular examples: 'decide' is not a canonical restructuring verb in (e.g.) Romance languages,
and the complement of 'expect' even has an overt subject in oblique case.

If operators in the lowest FinP had the option of accessing the speaker and hearer directly, then one might expect the indexical shift to "reset" at the finite clause boundary, contrary to fact. And here again an intermediate nonfinite clause does not disrupt local pronouns in the lowest clause from referring to the top-level speaker and addressee the way that an intermediate finite clause with a shifted indexical (hence with a controlled Sp) does. This is seen in (65).

(65)   Santeeaa   kah-e   laa tay   kark-au   ki   tu   ai-m-eN

       Santee   say-INF   for decide do-NH.AL that you.NH come-FUT-2.NH.S

       'Santee decided to say that you will come.' (spoken to a peer)

This is again consistent with our claim that allocutivity and indexical shift are intrinsically related, both depending on the same Hr (and Sp) operators. As a result, the two are sensitive to finite and nonfinite clause boundaries in the same way.

This also has potentially important theoretical implications for our understanding of unshifted indexicals. The standard view has been that "monstrous" operators are optional in most languages, if a language has them at all. If they are present, indexical shift happens; if they are absent, indexical shift does not happen. But the facts about allocutivity and its relationship to indexical shift point to a different conclusion: the operator is always there (in finite clauses), and it is always controlled or bound. The optionality comes instead from what locally binds the operator. If the operator is bound by an argument of the superordinate verb, the result is indexical shift; if the operator is bound by a higher operator, then the result is no indexical shift. Either way, there are operators and some kind of syntactically significant binding relationship.

This may well reflect back even on the analysis of English and other languages without indexical shift. We see now that it cannot be taken for granted that an indexical in an embedded clause can automatically denote the speaker or hearer of the sentence as a whole. On the

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contrary, we have seen that there are contexts in Magahi where these pronouns (e.g. 'you' in (64) with shifted 'I', also 'you' in (54)) cannot be used, even to denote the addressee of the sentence. If that isn't automatically possible in Magahi, then it may not automatically possible in English either. Rather there may be reason to use the apparatus of control of Sp and Hr operators in embedded clauses even in English. The difference between an indexical shift language and a nonshifting language would then not be whether this structure exists, but whether it allows two possibilities for how Sp and Hr are bound (Magahi), or only one (English).

7. Conclusion

At the heart of our analysis is a kind of parsimony argument. We claim that once one understands the syntax of Hr as revealed by allocutive agreement in Magahi, one already has all that one needs to predict/explain the existence of indexical shift of 'you' and, by extension, of 'I'. Allocutive marking shows that there is a second person DP Hr present in the periphery of finite clauses. A Kinyalolo's Gneralization effect shows that this Hr binds normal second person pronouns in argument positions as variables. The possibility of allocutive shift shows that Hr can be controlled by the goal of the superordinate verb rather than by the Hr of the superordinate clause. Put these together, and one has all the ingredients one needs for indexical shift. We then went on to show that the distribution of shifted indexicals mirrors the distribution of allocutive marking over a rather wide range of structures, just as expected based on this view.

The analysis has several theoretical implications. It presents a different view about the nature of "monstrous" operators from most previous work on indexical shift: they are essentially null DPs that enter into relationships of binding and control, rather than C-like heads that shift contexts semantically. The optionality of indexical shift has less to do with the optionality of these operators themselves than with whether they are controlled by the arguments of the

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superordinate verb or by the Sp and Hr of the higher clause. These control relations obey recognizable syntactic principles, including a version of relativized minimality style-locality. Finally, we add that this binding-and-control style analysis of indexical shift brings it more in line with how logophoric pronouns in African languages have been analyzed in the tradition of Koopman and Sportiche (1989). This could pave the way for a more deeply unified treatment of these superficially similar phenomena than is possible within theories like Anand (2006) and Deal (2017), who distinguish rather sharply between these two types of de se phenomena. We take this to be a positive outcome, although more work is needed to fully unify the two.

Abbreviations:

The glosses of examples in this paper follow the Leipzig glossing conventions, with the following additions: AL, allocutive; CA, complementizer agreement; H, honorific; HAB, habitual; HH, high honorific; MOD, modal; NH, nonhonorific. S stands for subject, transitive or intransitive. 1, 6 and 14 in Kilega are Bantu noun classes.

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