

Pronouns and Agreement in Telugu Embedded Contexts

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1. Introduction

How languages express *de se* attitude reports in finite clauses is subject to a large amount of cross linguistic variation. For example, English and other Indo-European languages do not distinguish *de se* attitudes from *de re* attitudes. Thus, the utterance in (1) can be used to report an attitude with the attitude holder fully aware that the said attitude is about himself (i.e., *de se*) or unaware that the attitude is about himself (i.e., *de re*). This allows (1) to be used to felicitously report both the scenario in (2a) and (2b).

(1) John said that he is smart.

(2) a. John said, “I am smart.”

b. John_i said, “he_i is smart.”

However a number of authors have recently noted that in many languages, *de se* attitude reports are expressed via *indexical shift*, where a first person pronoun is used to refer to the attitude holder. This is shown in (3) for Zazaki (Anand & Nevins 2004:21, see this work for evidence that we are not dealing with a quoted clause here.)

(3) Heseni_j va ke ez_j dɛwletia
Hesen.OBI said that I rich.be-PRES
‘Hesen said that he was rich.’

A large body of literature has tried to account for such variation (e.g., Schlenker, 1999, 2003; von Stechow, 2002, 2003; Anand, 2006; Sudo, 2012). In this paper, I investigate a new way languages use to mark *de se* by looking at Telugu (a Dravidian language). As (4) shows, a *de se* attitude report in Telugu has a third person pronoun controlling first person agreement on the embedded verb.¹

(4) Rani [tanu exam pass ajj-aa-n-ani] nam-mu-tundi.
Rani [3SG exam pass happen-PAST-1SG-COMP] believe-PAST-F.SG
‘Rani believed that she passed the exam.’

I will refer to this type of agreement pattern as *agreement shift*. I will show that agreement shift has the same interpretive properties and syntactic distribution as indexical shift. Despite these similarities, previous accounts of indexical shift cannot straightforwardly account for agreement shift. In this paper, I propose a uniform analysis for the two. The basic idea of the analysis is that in languages like Telugu, when a third person pronoun is interpreted *de se*, it is semantically first person but morphologically third

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¹ Curnow (2002) notes what seems to be the same agreement pattern in the Nilo-Saharan languages Karimojong and Lotuko. There are also languages like Tamil (Sundaresan, 2012), where first person agreement appears to be controlled by logophors. I discuss this in section 4.

person (in a way to be made explicit later). The agreement probe, responsible for verbal morphology, targets the semantic features of the controller (Corbett, 1979, 1983, 2006). The analysis can be expanded to account for indexical shift and other forms of *de se* marking while also giving a principled explanation for a previously unnoticed typological gap.

2. Agreement in Telugu embedded attitudes

In this section, I will introduce the Telugu agreement shift data. Where relevant, I will compare agreement shift to the better studied cases of indexical shift. I will show that like other cases of indexical shift, agreement shift can only be used to express *de se* attitudes; also, as with indexical shift in Uyghur, the syntactic distribution of agreement shift is tied to a special type of complementizer.

2.1. Background on Telugu agreement

Telugu displays verbal agreement with non-case marked subjects. The agreement paradigm for matrix clauses is given in (5) (putting aside number).

- | | | | | |
|-----|----|--|----|--|
| (5) | a. | neenu parigett-ææ-nu
1SG run-PAST-1SG
'I ran.' | c. | tanu parigett-ææ-Du
3SG run-PAST-M.SG
'He ran.' |
| | b. | nuvvu parigett-ææ-vu
2SG run-PAST-2SG
'You ran.' | d. | tanu parigett-in-di
3SG run-PAST-F.SG
'She ran.' |

Before we continue, I would like to note that what I gloss as the third person pronoun *tanu* is cognate to *ta(a)n* found in other Dravidian languages such as Malayalam (Anand, 2006) and Tamil (Sundaresan, 2012). *Ta(a)n* in these languages is usually not treated as a third person pronoun, but a logophoric pronoun or a long-distance reflexive. *Tanu* was evidently also once logophoric, however in current usage, speakers use it as a non-logophoric third person pronoun (Krishnamurti & Gwynn, 1985:73). This can be seen by examining the distribution of *tanu*. Logophoric pronouns are typically found in embedded attitude reports; they cannot be the matrix subject of an out of the blue sentence. This is shown in (6) for the logophoric pronoun *yè* in Ewe. *Yè* can be used in attitude reports (6a), but not as the matrix subject of an out of the blue context (6b) (data taken from Pearson in press).

- | | | | | |
|-----|----|--|----|---|
| (6) | a. | kofi be yè-dzo
Kofi say LOG-leave
'Kofi _i said that he _i left' | b. | *yè dzo
LOG leave
Intended: 'He left' |
|-----|----|--|----|---|

Tanu, on the other hand, can be used in both environments as shown in (7). Not only can *tanu* be used in embedded attitudes (7a), but also in matrix clauses in out of the blue contexts (7b).

- | | | |
|-----|----|--|
| (7) | a. | Raju tanu parigett-ææ-nu ani çepp-ææ-Du
Raju 3SG run-PAST-1SG COMP say-PAST-M.SG
'Raju said that he ran.' |
| | b. | tanu parigett-ææ-Du
3SG run-PAST-M.SG
'He ran.' |

(7b) can even be used deictically (i.e., accompanied by a pointing gesture). So I take the treatment of *tanu* as a third person pronoun to be empirically well-founded.

As noted in section 1, Telugu allows for agreement shift with pronouns with embedding in attitude reports. When the report expresses an attitude about the attitude holder, the agreement on the embedded verb can be either third person (8a) or first person (8b).

- | | | |
|-----|----|---|
| (8) | a. | Raju tanu parigett-ææ-Du ani cepp-ææ-Du
Raju 3SG run-PAST-M.SG COMP say-PAST-M.SG
'Raju said that he ran.' |
|-----|----|---|

- b. Raju $\text{[tanu parigett-}\ddot{\text{a}}\ddot{\text{a}}\text{-nu ani cepp-}\ddot{\text{a}}\ddot{\text{a}}\text{-Du}$
 Raju 3SG run-PAST-1SG COMP say-PAST-M.SG
 ‘Raju said that he ran.’

Agreement shift can also be found when the attitude holder is second person: the embedded verb can show second person (9a) or first person (9b) agreement.²

- (9) a. nuuvu $\text{parigett-}\ddot{\text{a}}\ddot{\text{a}}\text{-vu ani nuuvu cepp-}\ddot{\text{a}}\ddot{\text{a}}\text{-vu}$
 2SG run-PAST-2SG COMP 2SG say-PAST-2SG
 ‘You said that you ran.’
 b. nuuvu $\text{parigett-}\ddot{\text{a}}\ddot{\text{a}}\text{-nu ani nuuvu cepp-}\ddot{\text{a}}\ddot{\text{a}}\text{-vu}$
 2SG run-PAST-1SG COMP 2SG say-PAST-2SG
 ‘You said that you ran.’

Agreement shift is only acceptable in embedded clauses. Mismatches are disallowed in matrix clauses, as in (10).

- (10) a. $\text{tanu parigett-}\ddot{\text{a}}\ddot{\text{a}}\text{-Du}$ b. $\text{*tanu parigett-}\ddot{\text{a}}\ddot{\text{a}}\text{-nu}$
 3SG run-PAST-M.SG 3SG run-PAST-1SG
 ‘He ran.’ ‘He ran.’

A final note: what sets agreement shift apart from indexical shift is the fact that pronouns do not shift. In other words, first person pronouns must always refer to the current speaker and cannot refer to the attitude holder. This is shown in (11). The embedded first person pronoun, *neenu*, obligatorily refers to the current speaker.

- (11) Raju $\text{neenu eemi tinn-aa-nu ani cepp-}\ddot{\text{a}}\ddot{\text{a}}\text{-Du?}$
 Raju_i 1SG_{*i/s} what eat-PAST-1SG COMP say-PAST-M.SG
 ‘What did Raju say that I ate?’

2.2. The interpretation of agreement shift

Moving on to the interpretation of attitudes with agreement shift; agreement shift is only allowed if the report is a *de se* attitude. For that, it must meet the criterion in (12) (from Pearson 2012).

- (12) A *de se* attitude must meet both the:
 a. *Aboutness condition*: the attitude is about the attitude holder *and*
 b. *Awareness condition*: the attitude holder is aware that the attitude is about herself

To test whether agreement shift only occurs in *de se* attitudes, a scenario must be constructed where the condition in (12b) is not met to see if the sentence is judged felicitous in such a situation. This is done in (13). In this scenario, Rani is not aware that she has an attitude about herself; the sentence with agreement shift is judged to be infelicitous while the sentence without agreement shift is judged to be acceptable.

- (13) SCENARIO: Rani took an exam, and later saw the top 10 scores with the scorer’s student ID numbers. She forgot her own ID number, so did not know who was who. Looking to the top score, she thinks: “This student definitely passed!” But it turned out she was that student.
 a. $\text{raani [tanu exam pass ajj-in-and-ani] nam-mu-tundi}$
 Rani [3SG exam pass happen-PAST-F.SG-COMP] believe-PAST-F.SG
 ‘Rani believes that she passed the exam.’
 b. $\text{\#raani [tanu exam pass ajj-aa-n-ani] nam-mu-tundi}$
 Rani [3SG exam pass happen-PAST-1SG-COMP] believe-PAST-F.SG
 ‘Rani believes that she passed the exam.’

² The matrix subject is moved to the preverbal position to avoid having the two *nuuvus* adjacent to one another.

A similar interpretative restriction has been found for languages that allow for indexical shift: clauses with indexical shift can only express *de se* attitudes. This is shown for Amharic in (14) (Schlenker 1999:97; see also Sudo (to appear) for Uyghur).

- (14) SCENARIO: Jon, who is a candidate in the election, is so drunk he doesn't remember who he is. He watches TV and sees a candidate he finds terrific, thinking that this guy must be a hero. This candidate happens to be Jon himself though he doesn't realize it.
- a. #Jon ɕəɣna nə-ññ yil-all b. Jon fwyew ɕəɣna nəw alä
 John hero be.PF-1sO 3M.say-AUX.3M John the-man hero is said
 'John says that he is a hero.' 'John said the man is a hero.'

A question one may have at this point is: do attitude reports without agreement shift like those in (8a) and (9a) also have a *de se* reading or are they always read *de re*? This is a more difficult question than it appears at first because in simple cases, utterances with a *de se* attitude entail the one with a *de re* attitude. Despite this, there are ways to test whether an attitude has a *de se* reading. Below I deploy a test developed in Percus & Sauerland (2003). In the scenario for this test, there are four individuals: one has a *de se* thought, two have *de re* thoughts about themselves, and one has a *de re* thought about the first individual. The test sentence then reports that only the first individual has the attitude. The prediction of the test is that if a report has a *de se* reading, then the sentence will be judged true in this scenario because it is true that she is the only one who has the *de se* attitude, but if the report only has a *de re* reading, then it would be judged as false because other people in the scenario have *de re* beliefs about themselves or the first individual. In (15), I deploy this test in Telugu. As indicated by the judgements, both clauses with agreement shift and clauses without agreement shift are judged to be true in such scenarios, suggesting that both reports have a *de se* reading.

- (15) SCENARIO: Rani, Raju, Troy, and Bill all took an exam. Later the exam scores were posted next to the student's ID numbers. Rani was the only confident one and thought, "I passed the exam." Raju and Troy had forgotten their ID numbers and both were pessimistic about how they did, thinking they had failed. They saw the two top scorers and thought that those students definitely passed. It turned out they were those students. Bill also thought he had failed, but was confident about Rani and thought she had passed.
- a. raan-e [ʈanu exam pass ajj-in-and-ani] nam-mu-ṭundi
 Rani-FOC [3SG exam pass happen-PAST-F.SG-COMP] believe-PAST-F.SG
 'Only Rani believes that she passed the exam.'
- b. raan-e [ʈanu exam pass ajj-aa-n-ani] nam-mu-ṭundi
 Rani-FOC [3SG exam pass happen-PAST-1SG-COMP] believe-PAST-F.SG
 'Only Rani believes that she passed the exam.'

The final interpretative constraint I will investigate is the so-called *Shift Together* constraint of Anand & Nevins (2004). Based on data primarily from Zazaki, Anand & Nevins (2004) and Anand (2006) propose the constraint on indexical shift in (16).

- (16) All indexicals within a *speech-context domain* must pick up reference from the same context.

For Telugu, this would mean that other first person pronouns in attitude reports with agreement shift should refer to the attitude holder, not the current speaker. As (17) shows, this is not the case. The first person possessive pronoun *naa* can be used to refer to the speaker of the actual utterance and cannot refer to the attitude holder.

- (17) raani_i ʈanu_i naa_{*i/s} teacher-ni kalus-taa-nu ani ɕepp-in-di
 Rani 3SG my teacher-ACC meet-FUT-1SG COMP say-PAST-F.SG
 'Rani said that she will meet my teacher.'

In fact, a number of languages with indexical shift appear to violate *Shift Together* as well. These include Amharic (Anand, 2006), Catalan Sign Language (Quer, 2005) and Golin (Lounghnane, 2005). It appears that Telugu patterns with such languages.³

2.3. The distribution of agreement shift

As discussed in the previous section, agreement shift, like most cases of indexical shift, can only occur in embedded clauses. For many languages with indexical shift, indexicals only shift under certain attitude verbs. For example, indexicals in Amharic only shift under the verb meaning *to say* (Schlenker, 2011). Other languages appear to be more permissive. Uyghur, e.g., allows for shifting to occur under verbs of saying, belief, knowledge and direct perception (Sudo, 2012). Sundaresan (2011) conjectures that the licensing environments for indexical shift fall on the implicational hierarchy developed by Curly (1994) for logophoric pronouns, given in (18). (18) should be read as stating that if indexical shift is licensed by a class of embedding verbs then all other verbs to its left will also license it.

(18) SPEECH > THOUGHT > KNOWLEDGE > DIRECT PERCEPTION

Where does Telugu fall on this hierarchy? It appears to fall on the far right. Not only does it allow for agreement shift with verbs of saying and belief, as demonstrated in the previous section, but also with verbs of knowledge and direct perception. This is shown in (19).⁴

- (19) a. raani [ʔanu exam pass aʃj-aa-n-ani] ʔelusu-ʔun-di.
 raani [3SG exam pass happen-PAST-1SG-COMP know-REFL-F.SG
 ‘Rani found out she passed the exam’
- b. raani [ʔanu exam pass aʃj-aa-n-ani] santoʃanga unʔi.
 raani [3SG exam pass happen-PAST-1SG-COMP] happy COP
 ‘Rani is happy that she passed the exam’

Interestingly, agreement shift only occurs in complements introduced by the complementizer *ani*. This again patterns with indexical shift in Uyghur. In Uyghur, complements introduced by the complementizer *dep* allow indexical shift. Interestingly, both *ani* and *dep* are forms of the verb meaning *to say* in Telugu and Uyghur.⁵

3. An analysis of agreement and indexical shift

In this section, I will propose an analysis of agreement shift that can also cover the basic cases of indexical shift. The basic idea is that when a pronoun is interpreted *de se*, it is semantically first person. In languages with indexical shift, the morphology allows for those features to be spelled out as first person, but in languages without indexical shift, the morphology forces the features to be spelled out as a third person pronoun (putting aside logophors for the time being). What happens in Telugu agreement shift is that the semantic features of the pronoun are able to control agreement on the embedded verb. I will make all these intuitions explicit in the upcoming sections.

3.1. Semantic features and agreement

Descriptively, Telugu agreement shift is a mismatch between agreement controller and the target where it appears that the semantic interpretation of the controller is influencing the agreement target. In a series of typological studies, Corbett (1979, 1983, 2006) has shown that semantic features of nominals can control agreement; in fact, sometimes a nominal can control semantic *and* syntactic agreement in

³ I leave open why there is such variation in the *Shift Together* constraint. See Anand (2006) and Schlenker (2011) for possible explanations.

⁴ For a comprehensive list of verbs that license agreement shift see Messick (in preparation).

⁵ It has long been speculated that logophoric pronouns are licensed in complements introduced by complementizers that are forms of verbs of saying (e.g., Sells, 1987). For the role such complementizers play in licensing indexical and agreement shift see Messick (in preparation).

the same utterance. An example of such *semantic agreement* is given in (20). In (20), a semantically plural noun *committee* can control plural agreement in British English.⁶

(20) The committee has/have decided

The relevance to Telugu is apparent. I suggest that agreement shift is part of this larger paradigm where semantic features are available as agreement controllers. How do we model the ability of semantic features to control agreement? A common way is to allow for nominal elements to carry two sets of ϕ -features, one that interfaces with the semantics and the other with the morphology (e.g., Wechsler & Zlatić, 2000, 2003; Smith, 2015). The same can be done to account for Telugu agreement shift. For concreteness, let's adopt the system developed in Smith (2015). Smith proposes that in the narrow syntax, all nominal elements come with interpretable features that interface with the semantics and uninterpretable features that interface with the morphology. In most cases, the two are the same, but this is not always the case. Thus, *committee* nouns in British English have the feature set in (21).

(21) $\phi_{number} = [uF:singular, iF:plural]$

When the nominal is sent to spell-out, the features are split; the *u*Fs are sent to the PF interface, and the *i*Fs are sent to the LF interface.

Once we have two sets of features, we must explain how agreement probes can target both *u*Fs and *i*Fs. Following Chomsky (2000, 2001), let's assume that the locus of the agreement probe for subject agreement is on the T(ense) head, and also that ϕ -features on T are uninterpretable. In this system, this will mean that T only has one set of ϕ -features, which furthermore do not need to be sent to the LF interface. Following Arregi & Nevins (2012) and Bhatt & Walkow (2013), let's also assume that Chomsky's AGREE operation is decomposed into two sub-operations: MATCH and VALUATION. I assume the definition of MATCH in (22) (from Bhatt & Walkow 2013:972).

(22) MATCHING is a relation that holds of a probe P and a goal G. Not every link induces VALUATION. To do so G must (at least) be in the domain D(P) of P and satisfy locality conditions. The simplest assumptions for the probe-goal system are shown below:

- a. Matching is feature identity.
- b. D(P) is sister of P.
- c. Locality reduces to "closest c-command"

While MATCH is a syntactic relation, the authors above argue that the other sub-operation VALUATION, the actual sharing of features between the probe and the goal, can occur either in syntax or PF. Smith (2015) argues that when VALUATION occurs in the syntax, it may target either the interpretable *i*F or the uninterpretable *u*F of the goal, but if it occurs in the PF component, then only the uninterpretable *u*F is available as a target.⁷

3.2. *De se attitudes*

Following Lewis (1979); Chierchia (1989); Schlenker (1999); von Stechow (2002, 2003); Pearson (2012); a.o., I assume that the complement of an attitude verb is not a proposition, but rather a property of type $\langle e(st) \rangle$, as shown in (23).⁸

(23) ATT $[\lambda x. \lambda w. [\dots x \dots \text{in } w]]$

Attitude verbs then quantify over individual-world pairs, or *centered worlds*. The denotation of *believe* in this system is given in (24).

(24) a. $[[\text{believe}]^g]^g = \lambda P_{\langle e(st) \rangle} . \lambda x_e . \lambda w_s . \forall \langle y, w' \rangle \in \text{DOX}(x, w) [P(y)(w')]$
 b. $\text{DOX}(x, w) = \{ \langle y, w' \rangle : w' \text{ is compatible with } x \text{'s beliefs in } w \text{ and } x \text{ identifies as } y \text{ in } w' \}$

⁶ Another case of semantic agreement involves gender agreement in Slavic languages (e.g., Corbett, 2006).

⁷ For discussion of and extension to the locality of semantic agreement in the system, see Smith (2015).

⁸ I am putting aside tense as it is inconsequential for my analysis.

To illustrate how *de se* interpretations arise, I provide a sample LF and semantic derivation in (25). The abstractor over individuals in the embedded clause binds the pronoun in its scope; this, along with the meaning postulate in the verbal denotation in (24), will result in the pronoun being interpreted *de se*.

- (25) a. $[_{CP1} \lambda w_1. [w_1 \text{ Pete believes } [_{CP2} \lambda x_2. \lambda w_3. [w_3 \text{ he}_2 \text{ is smart}]]]]$
 b. $[[_{CP2}]^g = \lambda x. \lambda w. x \text{ is smart in } w]$
 c. $[[_{CP1}]^g = \lambda w. \forall \langle y, w' \rangle \in \text{DOX}(\text{Pete}, w)[y \text{ is smart in } w']]$.

I will assume that the LF for *de se* attitude reports for languages that have indexical shift as well as languages with agreement shift is that of (25a). How then do we account for the variation? I follow here a modified version of the system developed in Schlenker (1999) (see also Baker 2008). I assume, following Kratzer (2009), that bound pronouns may be born as variables without any feature values (Kratzer's minimal pronouns). The features are then valued during the course of the derivation. The minimal pronoun is shown in (26).

- (26) $X_{[uF: _; iF: _]}$

When the minimal pronoun is bound by the abstraction over individuals in the left periphery of the embedded clause, its *uF* and *iF* are valued [AUTHOR; $-C^*$] (cf. Kratzer's discussion of relative pronouns and PRO receiving features when bound).⁹ The AUTHOR feature marks the pronoun as the *de se* center of some speech context, while the $-C^*$ feature indicates that the pronoun is not the author of the actual speech context. The variation between languages discussed here comes from how these features are spelled out. In Telugu, the spell out rule for the first person pronoun specifies that the pronoun must refer to the author of the actual speech act. In languages with indexical shift, the first person pronoun is unspecified for which speech act the pronoun refers to. This is shown in (27).

- (27) a. *Telugu* [AUTHOR] [$+C^*$] \leftrightarrow *neenu* b. *Zazaki* [AUTHOR] \leftrightarrow *ez*

Since the first person pronoun cannot be used in Telugu to refer to the author of an embedded speech act, the pronoun must be out another way. (8b) and (9b) indicate that the embedded pronoun inherits the features of the matrix subject. Although these features are transmitted to the embedded pronoun, they do not seem to be interpreted. For illustration, examine the embedded pronouns in (28). Even though John is a woman in all contexts compatible with his hopes, the masculine pronoun can be used in (28a). Similarly, in (28b), the matrix subjects have the singular *de se* thought (i.e., *I am the smartest student in the world*), but the plural pronoun can be used in the embedded clause.

- (28) a. John, a transexual, hopes that he will become a woman and that society will accept him.
 b. We all think that we are the smartest student in the world.

There are a number of proposals that attempt to deal with these facts (e.g., Schlenker, 1999, 2003; von Stechow, 2002, 2003; Rullman, 2003; Anand, 2006; Heim, 2008; Kratzer, 2009; Landau, to appear). I will follow Heim (2008) and Landau (to appear) in assuming that these features are transmitted to the pronoun in the PF component of grammar; hence they are invisible to the interpretation at LF. With the necessary background in place, we can now analyze agreement shift.

3.3. Putting it all together

In this section, I will give partial derivations for indexical shift and agreement shift to illustrate how the system developed in the previous sections works. I will begin with indexical shift, as it is simpler. Lets skip ahead to where the embedded TP is already constructed, as this is where the action begins. Assuming the language has subject agreement (like Amharic), the pronoun and T undergo MATCH.¹⁰

⁹ In Baker (2008), the features are lexically specified on the pronoun, however, they must be licensed by being bound by an operator in the left periphery.

¹⁰ I assume that what is commonly referred to as T' has the all the features of the T head. This allows for T and the pronoun to be in the relevant configuration to undergo MATCH. See Rezac (2003).

$$(29) \quad [TP \dots X_{[uF: _ , iF: _]} \dots T_{u\phi _} \dots]]$$

MATCH

The left periphery of the embedded clause is then constructed. The abstractor over individuals binds the pronoun and values its *iF* and *uF* with the *AUTHOR* and *-C** feature values.

$$(30) \quad [CP \lambda x. \lambda w. [TP \dots X_{[uF: AUTHOR; -C^*, iF: AUTHOR; -C^*]} \dots T_{u\phi _} \dots]]$$

BINDING

The pronoun and T can undergo *VALUATION*, copying the value of the *iF* of the pronoun onto T.¹¹

$$(31) \quad [CP \lambda x. \lambda w. [\dots X_{[uF: AUTHOR; -C^*, iF: AUTHOR; -C^*]} \dots T_{u\phi} AUTHORITY; -C^* \dots]]$$

VALUATION

The clause is then sent to spell out. The result is that the pronoun and the agreement morpheme are spelled out as first person.¹²

Moving to the more complicated case of agreement shift, recall from (13) and (15), that when a pronoun is interpreted *de se* in Telugu, it can either control first person agreement (i.e., *agreement shift*) or third person agreement. All the steps will be the same up until (31) for languages with agreement shift. So let us pick back up there. Recall that in Telugu the first person pronoun, *neenu*, can only be inserted with the feature values [*AUTHOR*] [+*C**], so unlike languages with indexical shift, the pronoun cannot be spelled out here in Telugu. I propose that in this situation feature transmission with the matrix subject can be invoked as a last resort measure to allow the pronoun to be spelled out (see Messick (in preparation) for discussion of the last resort nature of feature transmission). Following Heim (2008) and Landau (to appear), I assume that feature transmission is post syntactic feature sharing between two DPs. This is shown for a third person matrix subject in (32).

$$(32) \quad \text{Subject}_{M.SG} \text{ ATT } [[\dots X_{[uF: M.SG]} \dots T_{u\phi} AUTHORITY; -C^* \dots]]$$

FEATURE TRANSMISSION

As a result of feature transmission with the matrix subject, the pronoun can now be spelled out, but as a third person pronoun. However, the T probe and the pronoun had already undergone *VALUATION* in the syntax, resulting in the *iF* features of the pronoun being copied onto T. Since these features were [*AUTHOR*] [*-C**], in this derivation, the agreement morpheme is spelled out as first person. Recall from the previous section that *VALUATION* can be delayed until PF. What would happen if *VALUATION* between the pronoun and the embedded agreement probe on T is delayed until PF? For languages with indexical shift, it is inconsequential (see footnote 12). For languages with agreement shift, since feature transmission results in a mismatch between *uF* and *iF*, if *VALUATION* took place in PF this means that it would access the *uF* of the pronoun. In (32), this would result in the *M.SG* being copied onto T, as shown in (33).

$$(33) \quad \text{Subject}_{M.SG} \text{ ATT } [[\dots X_{[uF: M.SG]} \dots T_{u\phi} M.SG \dots]]$$

VALUATION

¹¹ One may have the worry that *VALUATION* occurs counter cyclically. There are several ways to overcome this technical problem: one way is to assume, following Chomsky (2008), that all operations within a phase occur simultaneously (or that the cycle is defined on phases); another possibility is to follow Frampton & Gutmann (2000) and assume that once the pronoun and T undergo *MATCH* (their *feature sharing*), their features can be valued simultaneously when the pronoun is bound.

¹² *VALUATION* could occur at PF as well, however the result would be the same because for languages with indexical shift there is never a mismatch between *uF* and *iF*.

This will result in both the pronoun and agreement morpheme being spelled out as third person. The optionality of agreement shift occurring with *de se* pronouns then boils down to the timing of VALUATION: if VALUATION takes place in the syntax, the *i*Fs of the pronoun are copied onto T, resulting in the agreement morpheme being spelled out as first person. If VALUATION takes place in PF, the *u*Fs of the pronoun are copied onto T; this results in the agreement morpheme being spelled out as third person in the cases above, as the pronoun had its *u*F valued by feature transmission with the third person matrix subject. Now recall from (13) that when the pronoun is not read *de se*, it crucially cannot control agreement shift (i.e., it must control third person agreement). The system developed here also accounts for this; if the pronoun is not *de se*, this means that it was not bound by the abstraction over individuals in the embedded clause, hence cannot receive the AUTHOR feature. Hence, the T probe will never have access to the first person features unless the pronoun is read *de se*.

4. Extended typology

Let us now examine two other ways that languages use to mark *de se* attitudes. One way is through the use of logophoric pronouns.¹³ Now if logophors can also be read *de se*, this means that they can also be bound by the *de se* center. Under the current system, this would lead us to expect to find logophors which can control first person agreement in some languages, as they would also receive AUTHOR features when bound by the embedded abstraction over individuals. And indeed, we do find such languages, as shown in (34) for Donno Sɔ (Curly, 1994). (Tamil also has logophoric elements that control first person agreement, see Sundaresan 2012).

- (34) Oumar inyemɛ jɛmbɔ paza bolum miñ tagi
 Oumar LOG sack.DF drop left.1SG 1SG.OBJ informed
 ‘Oumar told me that he had left without the sack’

We have seen that the system in place can account for languages with indexical shift, languages with agreement shift, and languages with logophors (with and without first person agreement). Now how does the system handle a language like English, where there is no marking of *de se*? There are two potential ways: one way is to follow Anand (2006), and assume that *de se* readings in English only occur as a special form of *de re*; another way is to assume that the LF for English *de se* is the same as for other languages, but that agreement in English only occurs in the PF component for person agreement. This would mean VALUATION of the probe on T would only have access to the *u*F of the pronoun. Both options are fully compatible with the system developed here. Taking into account all the languages discussed here, we have the following typology of embedded *de se* marking.

(35) *Typology of de se marking*

Language	<i>de se</i> marking
English	Third person pronoun
Amharic, Zazaki	Indexical shift
Ewe	Logophor
Donno Sɔ, Tamil	Logophor with first person agreement
Telugu	Third person pronoun with first person agreement

The system developed here has been shown to have the flexibility to account for all of this variation. Notice, however, that there is a gap in the typology in (35). In this hypothetical language, a *de se* attitude would be expressed with a first person pronoun and third person agreement, as shown in (36).¹⁴

- (36) John said I is a hero.
 Intended: ‘John said that he_{de se} is a hero’

¹³ Note that I am not saying that logophoric pronouns are *obligatorily de se*, as Pearson (in press) has shown that logophors can be read *de re*. I am making the weaker claim that such pronouns *can* be used to express *de se* attitudes.

¹⁴ It is not the case that this surface pattern does not exist; it does in e.g., Golin (Papuan). However, when a first person pronoun controls third person agreement in such languages, it is always interpreted as a *de re* attitude about the current speaker. See Messick (in preparation) for an analysis.

In the current system, in order to be interpreted as *de se* and be spelled out as a first person pronoun both the *uF* and *iF* would be first person, so no matter when VALUATION takes place first person features will always be copied onto T. Hence, the agreement pattern from (36) is underivable under the system developed here, allowing for a principled explanation of this typological gap.

To conclude, this paper presented new data from Telugu that showed a new way of marking *de se* attitudes: *agreement shift*. It was shown that agreement shift behaves in many respects like indexical shift. The system developed here to account for agreement shift can also account for other ways languages mark *de se*, additionally explaining a hitherto unnoticed typological gap.

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