Antipresuppositions, logophors and shifted indexicality

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Abstract

Some languages can 'shift' indexicals, such as *I* and *you*, and use them anaphorically to refer to participants of the speech event being reported (Schlenker 2003, Deal 2020); other languages use dedicated 'logophoric' pronouns in the same fashion. A fact about logophoric languages is that, in speech reports, the use of a 3rd person form to refer to the author of the report is prohibited, giving rise to a disjointness or 'anti-coreference' effect. An interesting observation that has often gone unnoticed in the previous literature is that the same generalization holds for languages displaying obligatory indexical shift, suggesting that the two phenomena should be given a uniform account. I argue that this type of 'reporting disjointness' stems from the computation of an antipresupposition at level of person features (Percus 2006, Sauerland 2008a i.a.). Altogether with the aforementioned generalization, the present proposal is shown to be able to correctly derive distribution patterns of both classes of pronouns across languages.

1 Introduction

Some languages can 'shift' indexicals, and use them anaphorically to refer to arguments of the matrix clause. This is exemplified in (1) for Erythrea Tigrinya, a semitic language that allows shifting of first and second person pronouns under verbs of speech:

(1) a. Kidane kə-xɛyəd dɛliɛ ʔallɛxu ʔiłu (nɛyru)
Kidane COMP-IMPF.leave PRF.want.1SG AUX.1SG say.3SG.M AUX.3SG.M
'Kidane$_i$ said that he$_i$ wanted to leave'

b. Kidane kə-xɛyəd dɛliu ʔallo ʔiłu (nɛyru)
Kidane COMP-IMPF.leave PRF.want.3SG.M AUX.3SG.M say.3SG.M AUX.3SG.M
'Kidane$_i$ said that he$_{*i/j}$ wanted to leave' [Tigrinya, personal fieldwork]

This phenomenon, known as indexical shift (henceforth, IS), has been reported for a wide variety of languages pertaining to different families, ranging from Semitic (Amharic, Tigrinya) to Athabaskan (Slave) and Turkic (Uyghur, Chuvash). Languages differ as to which elements undergo shifting: some allow for 1st person shifting only (Slave, Rice 1986), others allow 1st and 2nd person to shift (Uyghur, Shklovsky and Sudo 2014), and some allow for all indexicals to shift without restrictions (Matses, Ludwig et al. 2010; Munro et al. 2012). Languages also vary as to whether IS is obligatory, as in Uyghur (Shklovsky and Sudo, 2014) or Navajo (Speas, 1999), or optional, as in Zazaki (Anand and Nevins 2004; Anand 2006). An interesting observation that has often been overlooked about those languages (a notable exception being Anvari (2020) about Farsi) is that, whenever IS is obligatory, the use of a 3rd person form in speech reports triggers a disjointness inference. The generalization can be stated the following way:

(2) **Disjointness inference in shifty contexts**
In obligatory IS-languages, embedded 3rd person proforms under verbs of speech cannot co-refer with the author of the report.

More precisely, whenever a language L allows for its indexicals to shift under a shifting-licensing predicate, using a 3rd person form in lieu of an indexical will give rise the inference that their

referents are distinct individuals. An early observation of this can be found in Speas (1999) for Navajo, as illustrated in (3):

(3) a. ndoolnish ní
3SG.S.work 3SG.S.say
'He$_i$ says he$_{*i/j}$ will work'

b. ndeeshnish ní
1SG.S.work 3SG.S.say
'He$_i$ says he$_i$ will work'
'He says I will work'

c. nizhdoolnish jiní
4SG.S.work 4SG.S.say
'He$_i$ says he$_i$ will work'

[Navajo, Speas 1999: (3)]

The above data is reminiscent of similar patterns of disjoint reference in languages with logophoric pronouns; in Ewe, for instance, the use of the 3rd person pronoun *e* instead of the logophoric form *yè* indicates that its referent is not the reported speaker, Kofi, but some other, salient male individual:

(4) a. Kofi be yè dzo
Kofi say LOG leave
'Kofi$_i$ said that he$_{i/*j}$ left'

b. Kofi be e dzo
Kofi say 3SG leave
'Kofi$_i$ said that he$_{*i/j}$ left'

[Ewe, Clements 1975]

In (1), the first person indexical can only refer to the matrix subject, and not to the utterance speaker. In order to capture this, a fruitful line of research, pioneered by Anand and Nevins (2004), suggested that the shifting of indexicals may be induced by the presence of a monster operator 👻 in the embedded clause. The semantics of 👻 are straightforward: it rewrites the Kaplanian context coordinates of a context-sensitive expression α-a tuple of parameters consisting of a speaker s, an addressee ad, a world w, a time t and a location l-with the values of the *index*, or circumstances of evaluation, consisting of a similar set of coordinates. Following Anand (2006), I am assuming that indexes are tuples as complex as contexts, not just world-time pairs:

(5) $[\![\text{👻}\ \alpha]\!]^{g,c,i} = [\![\alpha]\!]^{g,i,i}$

Depending on the language, the operator is generally taken to be introduced by attitude verbs such as *say*. Once inserted, all indexicals within its scope will thus inherit the value of the embedded context. An important thing to note is that in most IS languages (including Tigrinya), SIs are unambiguously read *de se* (Schlenker 2003, Anand 2006, Deal 2020 a.o.); sentences involving SIs are judged true only in scenarios in which the reported speaker self-identifies with the attitude holder (Perry 1979, Lewis 1979; see §2.2).

While it allows to capture a wide range of IS-related data crosslinguistically (such as the *shift together* constraint, cf. Anand 2006), the monster-based approach does not predict anything about the disjointness inference alluded to above, that the remaining of this piece will try to cash out in terms of presupposition projection and maximization.

2 Disjointness effects as antipresuppositions

As first observed by Heim (1991) and in a parallel fashion by Hawkins (1991), some utterances involving presupposition triggers seem to be infelicitous in contexts where the truth of a presuppositionally stronger element is entailed, i.e. where the presuppositionally stronger element is common ground:

(6) a. #A moon is bright.
b. The moon is bright.

(7) a. #I broke all my legs running.
b. I broke both legs running.

(6a) presupposes that there is exactly one moon, which is satified in the utterance context; consequently, (6a) will be perceived as odd if uttered. The same goes for (7b), which presuppose that the speaker has exactly two legs; uttering its presuppositionally weaker counterpart

(7a) will trigger the inference that the stronger alternatives do not hold, much like scalar implicatures. Heim (1991) convincingly argues that this kind of inferences cannot readily be analyzed as standard implicatures, because both pairs are equally informative in the given context; she proposes the pragmatic principle *Maximize Presupposition!* to account for the fact that cooperative speakers tend to prefer more informative presuppositional alternatives over their less-informative counterparts. This principle is stated in (8):

(8) **Maximize Presupposition!** (Heim, 1991)
Do not use ϕ if there is a $\psi \in \textsc{Alt}(\phi)$ s.t.
a. $\text{p}(\psi) \subset \text{p}(\phi)$, and
b. $[\![\phi]\!] \equiv [\![\psi]\!]$

Taken as a pragmatic filtering condition on utterances in a given context, *MP!* states that an utterance of ϕ should be avoided if ϕ has an alternative ψ whose presupposition is stronger than that of ϕ, and whose assertive strength (or informativity) are the same in the utterance context. If a competent and cooperative speaker were to utter ϕ under those conditions, then the hearer would consistently infer that she did not utter the presuppositionally stronger ψ on purpose, and that she very likely believes ψ to be false: in other words, the utterance of ϕ would give raise to an *antipresupposition* (Percus, 2006). If *MP!* is a general principle guiding speakers and hearers alike in the interpretation of presuppositions, and if, as we argue below, person features are presupposition triggers, we should expect to observe *MP!*-related effects in the pronominal domain as well.

2.1 The morphosemantics of person

Let us assume that the following features (9) are active across languages, where 1, 2, 3 stand for the persons (Sauerland 2003; McGinnis 2005; Sauerland 2008b; Harbour 2016; Sauerland and Bobaljik 2022). In line with most current research in the semantics of person (Cooper 1983; Heim 2008; Sauerland 2008b; Stokke 2010; Sudo 2012; Charnavel 2019, Sauerland and Bobaljik 2022 a.o.), I consider person features to be interpreted as presuppositions, i.e. partial functions of type $\langle e, e\rangle$ that restrict the domain of interpretation of the expression they are associated with (the pronoun itself being treated as a variable, cf. Heim and Kratzer 1998); since 3rd person pronouns are devoid of person features, no entry is associated with them (Benveniste, 1966), (10).

(9) a. 1: [Part(icipant), Author]
b. 2: [Part(icipant)]
c. 3: [ ]

(10) a. $[\![\text{ 1st }]\!]^{g,c,i} = \lambda x : s(c) \sqsubseteq x.x$
b. $[\![\text{ 2nd }]\!]^{g,c,i} = \lambda x : s(c) \sqsubseteq x \vee a(c) \sqsubseteq x.x$

A key component of this hierarchy is that it is both *asymmetric* (features entail lower ones in the hierarchy) and *nonnovel* (every feature projects onto the higher levels). As (10) illustrate, the set of pronouns of a given language complies with Katzir 2007's definition of structural alternatives: for any given pronoun π, $\textsc{Alt}(\pi)$ is the set of other pronominal forms available in the lexicon of the language, naturally deriving an appropriate scale on which *MP!* can apply, and where features are ranked in terms of semantic markedness (Sauerland 2008b, 2008a): a given feature in the hierarchy will semantically entail all the features below it. The present system predicts that their use are subject to *MP!*; specifically, use of a feature F in the scale will trigger the antipresupposition that stronger, higher-ranked alternatives *F'* do not hold.

2.2 Antipresuppositions in complex sentences

Indexical shift being mostly an embedded phenomenon, we will need to give an account of person presupposition projection in complex sentences. Following Heim (1992), sentences of the form *x believes that p* or *x says that p* are analyzed as context updates relativized to doxastic alternatives (Hintikka, 1969):

(11) a. $[\![\text{say}]\!]^{g,c,i} = \lambda p.\lambda x.\forall w' \in DOX_{x,w}, p(w') = 1$

b. For any common ground C, C + *John*^{i} *believes he*$_i$ *is hungry* = $\{w \in C : \forall w' \in DOX(j,w), \text{g(i) is hungry in } w'\}$.

This analysis, however, is incomplete, since it fails to deliver two crucial predictions needed in order to capture the data at stake. First, it does not predict any *de se* readings; second, while it captures the meaning of sentences involving doxastic verbs such as *believe* or *think*, it cannot straightforwardly be applied to other predicates such as *say* or *claim*, which quantify over different modal bases (Brasoveanu and Farkas 2007; Anand and Hacquard 2008, 2014). Following Pearson (2015a), I adopt the following entry for *say*-predicates:

(12) $[\![\text{say}]\!]^{g,c,i} = \lambda p.\lambda x.\forall w' \in SAY_{x,w}, p(w') = 1$, where SAY denotes the accessibility relation `compatible-with-what-x-said-in-w`.

With this modification in place, we can now turn to the second issue, namely, the *de se*: while our semantics will correctly delivers *de re* readings of the embedded clause, it will fail to do so in cases where the sentence is true if and only if the agent of *say* recognizes himself as the subject of the attitude introduced by the verb - i.e., has a *de se* attitude about himself. We will modify the entry in (12) in order to allow quantification on properties (and not propositions) of type $\langle e, \langle s, t\rangle\rangle$, where properties are tuples containing both individual and world parameters - *centered propositions*. A centered proposition will be true of an individual relative to a world if and only if this individual correctly self-locates himself in that world; in other words, it will be true if and only if the relevant individual has a *de se* attitude about himself, (13):

(13) **Semantics of *say* (centered worlds version):**
$[\![\text{say}]\!]^{g,c,i} = \lambda P.\lambda x.\forall \langle y, w'\rangle \in SAY_{x,w}, p(w')(y) = 1$

This will ensure that our semantics for attitude verbs, coupled with Heim's mechanism of presupposition projection, will correctly derive *de se* readings of sentences involving both SIs and logophoric pronouns (§3).

With that in place, we can now turn back to disjointness inferences. Consider (1). Recall that, since Tigrinya is an obligatory shifting language, the insertion of 👻 is mandatory under *ʔiłu* '*say*', with the effect that the embedded first person coordinate is shifted towards that of the reported speaker, Kidane. This yields the following pseudo-LF for a sentence like (1b):

(14) Kidane^5 said 👻 I$_5$ want to leave.

Following our semantics as well as Heim's presupposition projection rule, we get the following LF for (14):

(15) $[\![$ Kidane^5 said 👻 I$_5$ want to leave $]\!]^{g,c,i} = 1$ iff $\forall i \in SAY_{w(c)}(Kidane)[s(i) \sqsubseteq (g(5))].\forall i \in SAY_{w(c)}(Kidane)[g(5)$ wants to leave in $w(i)]$.

In words, (14) is true iff the presupposition of the embedded 1st person is satisfied in Kidane's *say*-alternatives, those worlds in which Kidane is the *de se* center in the (shifted) context world $w(i)$, now the world of the index. Consider now an utterance of the following sentence, which is infelicitous if *kidane* and *he* are co-indexed:

(16) Kidane^5 said 👻 he$_5$ wants to leave.

Contrary to its 1st person counterpart, (16) does not presuppose anything. However, in virtue of *Maximize presupposition!* as defined above, its utterance triggers an antipresupposition,

negating all the presuppositional alternatives of the sentence. Consequently, uttering (16) antipresupposes that the speaker does not know whether *g(5)* refers to the speaker or the addressee. However, as noted forcefully in the literature about both scalar implicatures (Spector 2003, Van Rooij and Schulz 2004, Sauerland 2004) and antipresuppositions (Chemla, 2008), this inference is too weak: what the utterance of (16) conveys is actually something stronger, by which the speaker indicates that she does not believe p's presuppositional alternatives to be true. The antipresupposition arrived at with this extra *epistemic step* is indicated in (17), which derives the observed disjointness inference in Tigrinya: *he* and *Kidane* do not co-refer.

(17) **Antipresupposition of 👻 / 3 sentences (with epistemic step):**
   a. (16) $\rightsquigarrow CG\neg[\forall i \in SAY_{Kidane,w(c)}[s(i) \wedge a(i) \sqsubseteq (g(5))]$.
   b. (16) $\rightsquigarrow$ *g(5)* is neither the reported speaker or addressee.

By way of comparison, consider an utterance of the same sentence in English; it will trigger the same antipresupposition than its Tigrinyan counterpart, with one crucial difference: since no monster is present in the structure, the worlds relative to which the *say*-alternatives of the reported speaker are those accessible from the *actual* context, not those of the index or reported context. As a consequence, the antipresupposition targets the matrix context, deriving the correct disjointness inference for English - *he* and the actual speaker cannot co-refer.

3 Deriving anti-logophoricity

Logophoric languages have a distinct set of 3rd person proforms that are used in embedded contexts under verbs of speech (Clements 1975, Hyman and Comrie 1981, Sells 1987, Culy 1994). Crucially, when used, those pronouns cannot pick up a referent distinct from the reported speaker, or 'logophoric center', in the sense of Sells (1987); using a regular, third person pronoun in the same environment triggers a similar disjointness inference:

(18) a. Oumar Anta inyemɛn waa be gi
Oumar Anta LOG.ACC seen AUX said
'Oumar$_i$ said that Anta had seen him$_i$'

b. Oumar Anta won waa be gi
Oumar Anta 3SG.ACC seen AUX said
'Oumar$_i$ said that Anta had seen him$_{*i/k}$'
[Donno Sɔ, Culy 1994: (1)]

(19) a. #oò kɔ oò dɔ
2SG said 2SG fell
'You$_i$ said you$_i$ fell'

b. oò kɔ oò dɔ-ɛ
2SG said 2SG fell-LOG
'You$_i$ said you$_i$ fell'
[Gokana, Hyman and Comrie 1981: (10)]

Given the similarity between examples (4a), (18), (19) from logophoric languages and example (1) above, it seems reasonable to assume that both phenomena are closely related. In spite of this, logophoric pronouns (LPs) and SIs have been given very different treatments in the literature, for reasons that we cannot review here (Anand 2006; Deal 2020). Before attempting to apply the present analysis to LPs, it might be useful to motivate a unified analysis in the first place. An important similarity concerns the typological distribution of the two classes, which occur in very similar environments - attitude reports. As first proposed by Culy (1994) for LPs and by Deal (2017) for SIs, both classes across languages seem to be licensed by a common range of predicates, organized into an implicational scale; second, both enforce *de se* interpretations (Schlenker 2003; Adesola 2006; Anand 2006; Haida 2009; Sudo 2012; Deal 2020; Bimpeh et al. 2022). This suggests that a unified account of both phenomena is worth pursuing.

The behavior of LPs can straightforwardly be captured with our antipresupposition account, with further assumptions about logophoric systems. In order to consistently maintain the required featural asymmetry at the level of alternatives, let us assume that, instead of being

specified with a dedicated feature [LOG], as in most accounts (Schlenker 1999, von Stechow 2002, 2003, and more recently Bimpeh et al. 2022), logophors lack a feature that first person pronominals have: a feature [ACTUAL], which 1st person pronouns come specified with (the [ACTUAL] feature is inspired from Schlenker (2003), and closely resembles his [+ AUTHOR*]). I assume that logophoric languages like Ewe make use of the following feature set:

(20) **Features of logophoric systems**
   a. 1: [AUTHOR], [PARTICIPANT], [ACTUAL]
   b. LOG: [AUTHOR], [PARTICIPANT]
   c. 2: [PARTICIPANT]
   d. 3: [ ]

(21) **Semantics of logophoric features:**
   a. $[\![1]\!]^{g,c,i} = \lambda x : s(c) \sqsubseteq x.x$
   b. $[\![\text{LOG}]\!]^{g,c,i} = \lambda x : s(c) \sqsubseteq x \vee s(i) \sqsubseteq x.x$
   c. $[\![2]\!]^{g,c,i} = \lambda x : s(c) \sqsubseteq x \vee a(c) \sqsubseteq x \vee s(i) \sqsubseteq x \vee a(i) \sqsubseteq x.x$

Once such a hierarchy is assumed, deriving disjointness inferences triggered by ordinary 3rd person pro-forms in LP-languages becomes straightforward. Take example (4b) above. What we observe is that the use of a standard 3rd person form in the logophoric environment introduced by *be 'say'* suggests that the two referents are distinct individuals. This is because the choice of (4b) over its logically stronger counterpart (4a) triggers our familiar inference that *Kofi* refers neither to the author nor addressee of either the utterance or the reported context. As a consequence, it is assumed that *Kofi* and *e* must denote distinct individuals.

(22) Kofi[5] said he$_5$ wanted to leave.

(23) **Antipresupposition of 3 / LOG sentences (with epistemic step):**
   a. (22) $\rightsquigarrow CG \neg[\forall i \in SAY_{Kofi,w(c)}[s(c) \wedge a(c) \wedge s(i) \wedge a(i) \sqsubseteq (g(5))]$.
   b. $\rightsquigarrow$ *g(5)* is neither the actual nor reported speaker or addressee.

The present theory allows to capture further data. As noted by Hyman and Comrie (1981) for Gokana, logophoric pronouns cannot take 1st person pronouns as antecedents. In other words, for a given speech report, when the reported and current speaker are one and the same individual, a logophor cannot be used:

(24) a. mm kɔ mm dɔ
   1SG said 1SG fell
   'I$_i$ said I$_i$ fell'

   b. #mm kɔ mm dɔ-ɛ
   1SG said 1SG fell-LOG
   'I$_i$ said I$_i$ fell'
   [Gokana, Hyman and Comrie 1981: (11)]

Similar data are reported for Wan (Niger-Congo, Ivory Coast; Nikitina 2012), Ewe (Pearson, 2015b) and Danyi Ewe (Niger-Congo, Togo; O'Neill 2015), as well as Ibibio (Niger-Congo, Southern Nigeria; Newkirk 2017). This pattern is correctly predicted by the antipresupposition account, given the asymmetrical hierarchy of features posited in (20): in cases where the antecedent is first person and refers to the current speaker, a first person must be used in the embedded sentence. Since the feature set of 1st person is semantically more marked than that of LOG, then it ensues that $[\![\text{1st}]\!] \subset [\![\text{LOG}]\!]$; any utterance of LOG will trigger the antipresupposition in (23), which contradicts the matrix use of the 1st person, where the actual speaker intends to refer to himself with that form. Another interesting typological fact that our theory can derive concerns the use of 2nd person in logophoric environments. In some languages, logophoric contexts exhibit a special case of 'person neutralization' between third and second person; as a consequence, logophoric pronouns can take second person antecedents as well as third, with singular and plural number features alike (cf. example (19)). As already discussed, first person antecedence is excluded. On the present account, varieties of person neutralization exemplified in (19) are correctly predicted: it is expected that a sentence where the author of

the embedded speech event is referred to using a 2nd person pronoun will be infelicitous, regardless of what his discourse status in the actual context is; a logophor should be used instead - which is just what we observe. In these, the 2nd person and the logophor are coreferential, the addressee of the utterance context also being the reported speaker. When these coincide, a 2nd person cannot be used on pains of triggering a disjointness inference, as in (19a). Last, the present system makes one further prediction: due to their relative underspecification compared to LPs, 2nd person pronouns should be able to refer to reported addressees, a prediction that seems borne out, cf. (25):

(25) è gé zò ɓé **là** **ɓà** pólì
3SG said come then 2SG LOG.SG wash
'She$_i$ said come and wash me$_i$.' [Wan, Nikitina 2012: (18)]

The data above is quite interesting when compared to IS-systems discussed in the previous section, since the second person in (25) is 'shifty' in a similar sense. What this suggests is that logophoric languages have somehow grammaticalized a version of the monster operator 👻 that shifts the embedded speaker coordinates, allowing reference to embedded speech context authors to be lexicalized by a dedicated logophoric form, thereby confining the 1st person to genuine indexical uses (an analysis along these lines is in fact suggested for Wan by Nikitina 2020).

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