

An alternative model of indexical shift: Variation and selection without context-overwriting*

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Abstract

Indexical shift is the phenomenon where an indexical is interpreted, not against the utterance context, but against the index associated with an attitude. Three types of evidence challenge both context-overwriting and quantifier-binding approaches to indexical shift: (I) Systematic exceptions to Shift Together in Tamil, varieties of Zazaki and Turkish, and potentially also Late Egyptian; (II) novel evidence from imperatives in Korean and supporting secondary data from imperatives in Slovenian, showing that the utterance context continues to be instantiated even in putatively shifted environments; and (III) results from personal fieldwork in Tamil dialects and secondary data from 26 languages (from 19 distinct language families) showing that there is a one-way, implicational selectional variation in the intensional environments where indexical shift obtains. The following desiderata emerge: 1. Shift Together holds whenever possible, but systematic exceptions may obtain when it cannot; 2. the utterance-context is never overwritten; 3. indexical shift is an embedded root phenomenon that privileges speech predicates. To capture these, I develop an alternative model of indexical shift, whereby all intensionality is executed by a monster, which comes in different contextual shapes. This new type of monster is a contextual quantifier that is nevertheless severed from the attitude verb. I present evidence to show that it is encoded on structurally distinct types of C head along the clausal spine, each under the scope of a different class of attitude verb.

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1 Overview

Indexical shift (Kaplan, 1989; Schlenker, 2003; von Stechow, 2002; Anand, 2006, et seq.) — denotes the phenomenon where an indexical pronoun is evaluated, not against the utterance context, but against the coordinates of a speech event associated with a speech predicate in the clause. The sentence in Uyghur (Turkic) below illustrates a case of obligatory shift for the 1st-person indexical ‘I’ (from Shklovsky and Sudo, 2014, 383, Ex. 4b):

- (1) Ahmet [men ket-tim] di-di.
Ahmet [1SG leave-PST.1SG say-PST.3
✓ “Ahmet_i said that I_i left.” (Literal)
“Ahmet_i said that he_i left.” (Intended)
✗ “Ahmet_i said that I_{speaker} left.”

The sentence in (1) can only have the reading that Ahmet said that he (Ahmet) left; it cannot mean, as it indeed must in English, that Ahmet said that the speaker of the utterance left. Such a shift is standardly assumed to be possible because the reference of ‘I’ has been computed, in (1), not against the speech-context of the matrix utterance, but against that of the embedded one. In English, however, such flexibility is not available.

Although indexical shift still remains a fairly understudied phenomenon in the literature, two broad types of approaches to it may be discerned. I call these “monster-centric” (MC) (Anand and Nevins, 2004; Anand, 2006; Shklovsky and Sudo, 2014) and “pronoun-centric” (PC) (Schlenker, 1999, 2003, et seq.). These differ with respect to two main parameters: (i) the locus of variation for indexical shift; (ii) the nature of the shifter or “monster” (λ). Under MC, indexical shift obtains due to overwriting by contextual operators (the λ) introduced by attitude verbs, which replace the utterance-context (default) with the intensional index associated with the attitude verb (i.e. $\llbracket \lambda \alpha \rrbracket^{c,i,g} = \llbracket \alpha \rrbracket^{i,i,g}$). All indexicals are assumed to be capable of shifting, but attitude verbs vary in their ability to introduce a λ . In PC, the attitude verb is a quantifier (not an operator) that binds context-variables associated with indexical pronouns in its scope. In other words, it is itself a λ . Thus, *all* attitude verbs are λ s: there is no room for (selectional) variation here. The locus of variation lies in the shiftability of individual indexicals, which are associated with context variables. The conditions on the binding of these variables are lexically specified on the indexicals themselves, yielding optional shift (Amharic ‘I’) vs. obligatory shift (Slave ‘I’), vs. obligatory non-shift (English ‘I’).

The goal of this paper is to present empirical evidence from different sources to argue that neither type of approach is adequate in and of itself. I will discuss the following three types of empirical challenges to these major theories of indexical shift: I. Exceptions to the “Shift Together constraint” (Anand and Nevins, 2004, the constraint that all shiftable indexicals in a local intensional domain must shift together) in Tamil, with supporting secondary evidence from varieties of Zazaki, Turkish, and Kurdish (Akkuş, 2018), and potentially also Late Egyptian; II. persistence of the utterance-context even in putatively shifted environments, illustrated with novel data from Korean imperatives and supporting data from imperatives in Slovenian (Stegovec and Kaufmann, 2015); III. the one-way implicational nature of variation wrt. indexical shift (privileging speech

predicates). The following desiderata emerge. First, Shift Together obtains whenever possible, but it is, ultimately, not exceptionless. Second, the utterance context is never overwritten, reflecting its special ontological status. Third, and finally, indexical shift is part of a larger constellation of embedded root phenomena that privilege speech predicates.

We will see that neither the MC operator-based context-overwriting approach due to Anand and Nevins (2004); Anand (2006); Sudo (2012); Shklovsky and Sudo (2014) nor the PC quantifier binding one (Schlenker, 1999, 2003, and subsequent) can straightforwardly generate this full conglomeration of results. MC cannot accommodate exceptions to Shift Together or data, like those involving Korean or Slovenian imperatives, suggesting that the utterance-context is not overwritten in shifted; PC overgenerates *exceptions* to Shift Together. Finally, neither account can accurately yield the root phenomenon property of indexical shift.

I develop a new hybrid model of indexical shift that combines core insights from both these approaches but crucially differs from both, taken individually. Like with the operator-based MC, the context-shifter (or “monster”) is a grammatical entity that is selected in the scope of (certain) attitude verbs. However, unlike in MC and like with PC, this monster is not an operator but an enriched intensional quantifier. I present evidence from nominalizations and complementizer deletion patterns to argue that the monster is structurally encoded on a C head. Adapting insights from Kratzer (2009); Moulton (2007, 2009); Elliott (2017), I then propose that monstrous quantification is “outsourced” from the attitude verb to a dedicated complementizer in the scope of this verb, with the intensional component of the attitude verb itself being rather negligible. I further propose that this $\hat{\lambda}$ comes in a variety of shapes, based on which specific contextual coordinates it can quantify over. This information is hardwired into the denotation of each $\hat{\lambda}$ in its compatibility specifications with the content of the attitude. I show that this variation can be exploited to derive fundamental asymmetries in shifting attested across different contextual classes of indexicals (1st vs. 2nd vs. locational) across languages and in specific propositional domains. Under the system developed, a $\hat{\lambda}_{World}$ which quantifies over the *World* arguments of respective contexts alone, also counts as a $\hat{\lambda}$. This in turn means that all intensional quantification is fundamentally monstrous in nature. What varies is simply how rich such contextual quantification is, reflected in the choice of $\hat{\lambda}$.

Typological variation for this new type of monster is a function of whether a monster is selected by a given verb as well as in the shiftability of individual indexicals. Indexicals are lexically specified to be SHIFTABLE or UNSHIFTABLE. The shape of indexicals across different contextual classes also mimics the contextual asymmetries modelled in the compatibility restrictions across $\hat{\lambda}$ s. A 1st-person indexical involves a 1st-person pronominal head that combines directly with a context variable. A 2nd-person indexical instantiates a structure that contains the structure for the 1st-person indexical. As such, a 2nd-person indexical never combines directly with a context variable but can access it only via the 1st-person pronoun. This has the desired empirical result that a 2nd-person indexical in a language counts as SHIFTABLE only if a 1st-person indexical does. A similar structural asymmetry pertains to a locational indexical like ‘here’: this contains the structure of a 2nd-person indexical, thus ensuring that it is SHIFTABLE only if a

2nd-person indexical is SHIFTABLE.

Rampant overgeneration is curtailed by independent *syntactic* restrictions placed on the classes of attitude predicate that may or may not select a monster, in a given language. I show that, in addition to providing a natural explanation for the different empirical challenges discussed here, the proposed system also makes the right empirical predictions with respect to languages that show both Shift Together and putative exceptions to it (e.g. Mishar Tatar), naturally accounts for an independent Minimality restriction noted for indexical shift, namely “No Intervening Binder” (Anand and Nevins, 2004), is supported by morphological and syntactic evidence showing that the ω is encoded in a species of C head, and also crucially predicts cases of indexical shift in intensional environments that lack an attitude verb.

2 Indexical shift: a (very!) brief primer

The reference of a personal pronoun like *I* in English seems to be solely a function of the context in which it is uttered: i.e. it denotes the unique *Author* or *Speaker* of a given utterance and may thus vary, purely as a function of who is actually speaking. Other expressions, like *you*, *here* and *now* are similar in that they, too, pick up their reference solely from the parameters — *Addressee*, *Location* and *Time*, respectively — of a given utterance-context. Furthermore, these expressions seem to stubbornly persist in referring to the utterance-context, even when they are embedded under an intensional predicate, like *say* or *think*: i.e. they can putatively escape intensional quantification. Thus, in (2) below, the expressions *my* and *today* must still denote the *Author* and *Time* parameters, respectively, of the utterance-context, even though *unicorn* is clearly interpreted *de dicto* and *she* is coreferent with *Maria*:

(2) Maria_i dreamed that she_i saw my pet unicorn earlier today.

Such directly-referring, yet context-sensitive expressions, called *indexicals*, thus seem to form a natural class, in opposition with other types of pro-form (Kaplan, 1989). Given patterns like that in (2), Kaplan (1989, 510-11) additionally concluded that: “no operator can control the character¹ of indexicals within their scope, because they will simply leap out of its scope to the front of the operator ... Operators like ‘In some contexts it is true that’ which attempt to meddle with characters, I call *monsters*. I claim that none can exist in English (without sneaking in a quotation device).” While Kaplan’s ban against such monsters seems valid enough for English, other languages have since prove harder to accommodate, as argued convincingly in Schlenker (1999). Consider the Indo-Iranian Zazaki sentence below (Anand and Nevins, 2004):

(3) $\text{H}\varepsilon\text{seni}_j$ ($\text{mi}_k\text{-ra}$) va ke $\varepsilon\text{Z}_{j/k}$ d\text{ew}letia.
 Hesen.OBL I.OBL-TO said that I rich.be-PRES
 “Hesen_i said that I_{Auth(c*)} am rich.” (Unshifted reading)
 “Hesen_i said that he_{i,*j} is rich.” (Shifted reading)

¹The *character* of an expression is a function from contexts of use to the content (or intensional meaning) of that expression. The content then further operates on the intensional meaning of an expression to yield its extension. All expressions can, in theory, thus be “doubly indexed” with two types of operator, once with the character and once again with the content.

In (3), the Zazaki 1st-person indexical *tî* can refer to the *Speaker* of the utterance context, just as in English. But it also has another interpretation, where ‘I’ denotes the *Speaker* of the eventuality associated with the matrix ‘say’ verb, namely Hesên. Note that, in both readings, Zazaki ‘I’ remains context-sensitive. Yet, unlike ‘I’ in English, its reference is not fixed to the utterance-context and also seems to be capable of being intensionally manipulated, in apparent violation of Kaplan’s claim above. Zazaki ‘I’ is, in other words, a(n) (optionally) *shifting indexical*.

However, the person dimension is not the only one that is capable of being shifted. Speas (1999) notes for Navajo that temporal adverbials like *tomorrow* may be evaluated with respect to the context of the speech report, rather than that of the utterance; similarly, Giorgi (2010) proposes that sequence-of-tense effects in Romanian, Russian and Japanese involve nothing other than temporal indexical shift. The world parameter may be shifted as well: Schlenker (2003) argues that such indexical shift characterizes the so-called *Konjunktiv I* phenomenon in German, and Quer (2005) reports similar modal indexical shift for Catalan Sign Language. A different sort of variation has to do with whether contextual-shifting along a given parameter is optional or obligatory, and which contextual domains may be allowed to shift in a given language. Recent work in Deal (2017) argues, furthermore, that these factors are not in free variation with one another but involve a strict implicational relationship.

3 Monster-centric vs. pronoun-centric views to shift

Although work on indexical shift is still fairly sparse, three major analytical approaches to this phenomenon may be discerned (see also Korotkova, 2016, for an excellent summary of the state of the art). One is a predominantly pragmatic view, espoused in works like Maier (2014, 2015): indexical shift is analyzed as a type of extra-grammatical process involving partial or “mixed” quotation; under dynamic approaches to indexical shift such as Bittner (2014), indexicals are treated as “inherent topics”, on a par with anaphors – they are discourse referents that are sensitive not only to the context but also to changes in context; indexical shift obtains when an attitude-holder dynamically qualifies as a salient discourse referent, thus can be referred to by a shiftable indexical in its scope. For the purposes of this paper, I will ignore pragmatic approaches to indexical shift for the simple reason that it is not clear to me how and whether they are compatible with a morphosyntactic analysis of this phenomenon, such as is warranted by the Tamil facts I discuss in this paper. In addition, the claim that indexicals are equivalent to anaphors is also empirically problematic, given various crosslinguistically systematic differences in their distribution and semantic behavior (Baker, 2008; Sundaresan, 2012).

The approaches that relegate the derivation of indexical shift to the grammar proper — in particular, to the semantics of attitude predication and indexicality — fall into two broad categories, given fundamental differences in their assumptions and implementation of indexical shift. I label these views “monster-centric” (MC) and “pronoun-centric” (PC). These differ from one another with respect to the following criteria: (i) The locus of variation for indexical shift; (ii) The nature of the shifter or monster that effects shift in its scope.

3.1 The monster-centric view (MC)

Under MC, pioneered in Anand and Nevins (2004); Anand (2006, a.o.) and adopted, with some modifications, more recently in Shklovsky and Sudo (2014) and Deal (2017), the denotation of an indexical like ‘I’ in Zazaki remains constant across both shifted and unshifted readings. $\llbracket \text{I} \rrbracket^{c,g}$, in (3) = $\lambda c. \text{Author}(c)$; in other words, it is a function that denotes the *Author* of some context. The difference in meaning comes about purely as a result of which context the *Author* function takes as its argument. When *Author* is evaluated against c^* , the utterance context (which, in the absence of an intensional operator, is taken to be the default), we get an “English-style” unshifted 1st-person indexical. When this same *Author* function is evaluated against a different context than the utterance-context, we get a shifted indexical.

What this means then, is that all indexicals, including ones in languages like English, are in theory *capable* of shifting: what is parametrized is whether the environment for such shifting, specifically in the form of a different context introduced by an intensional predicate, is available to them or not. Certain attitude verbs introduce an intensional $\hat{\lambda}$ operator which takes the default utterance-context parameter of its sister and *overwrites* or *resets* it with a new contextual value, namely that of the index parameter associated with the attitude predicate. What makes such an operation possible in the first place is the premise that the utterance-context and intensional index both denote a tuple consisting of $\langle \text{Author}, \text{Addressee}, \text{Time}, \text{World}, \text{Location} \rangle$. The utterance-context, then, is not ontologically special — contrary to Kaplan’s hypothesis. Rather, the intensional index and utterance-context are assumed to be formally equivalent (i.e. of the same semantic type), such that one that can replace the other in the course of the derivation. Such an operator, of course, is nothing other than Kaplan’s *monster*, claimed by Kaplan not to exist in natural language — an operator that, in fact, freely manipulates contexts in its scope, overwriting one with the other, as in (4):

$$(4) \quad \llbracket \hat{\lambda} \alpha \rrbracket^{c,i,g} = \llbracket \alpha \rrbracket^{i,i,g}, \text{ for } \alpha = \text{the attitude-report.}$$

Against this background, the interpretive ambiguity of the Zazaki sentence in (3), which in turn has to do with the ambiguity of ‘I’, simply reduces to whether such a $\hat{\lambda}$ is present in the scope of ‘say’ or not, as illustrated below:

- (5) Shifted reading for (3) (Template: $\llbracket \dots \text{say} [\hat{\lambda} \alpha] \rrbracket^{c,i,g}$):
- a. Shifted reading: “Hesen_i thinks that Hesen_{i,*j} is rich.”
 - b. LF: $\llbracket \text{Hesen said} [\hat{\lambda} \text{I am rich}] \rrbracket^{c,i,g}$
 - c. $\llbracket 3 \rrbracket^{c,i,g} = \llbracket \text{say} \rrbracket^{c,i,g} (\lambda i'. \llbracket \hat{\lambda} [\text{I am rich}] \rrbracket^{c,i',g}) (\llbracket \text{Hesen} \rrbracket^{c,i,g})$
 $= 1$ iff, $\forall i'$ compatible with what Hesen said in i $\llbracket \text{CP AUTHOR}(i') \text{ is rich} \rrbracket^{i',i',g}$
 $= \llbracket \text{Hesen said} [\text{CP I}_{\text{hesen}} \text{ am rich}] \rrbracket^{i',i',g}$
- (6) Unshifted reading for (3) (Template: $\llbracket \dots \text{say} [\alpha] \rrbracket^{c,i,g}$):
- a. Unshifted reading: “Hesen_i thinks that $\text{I}_{\text{Auth}(c^*)}$ am rich.”
 - b. LF: $\llbracket \text{Hesen said} [\text{I am rich}] \rrbracket^{c,i,g}$
 - c. $\llbracket 3 \rrbracket^{c,i,g} = \llbracket \text{say} \rrbracket^{c,i,g} (\lambda i'. \llbracket [\text{I am rich}] \rrbracket^{c,i',g}) (\llbracket \text{Hesen} \rrbracket^{c,i,g})$
 $= 1$ iff, $\forall i'$ compatible with what Hesen said in i $\llbracket \text{CP AUTHOR}(c) \text{ is rich} \rrbracket^{c,i',g}$
 $= \llbracket \text{Hesen said that} [\text{CP I}_{\text{Auth}(c)} \text{ am rich}] \rrbracket^{c,i',g}$

Under such a system, then, parametric variation for indexical shift arises simply as a function of whether a λ is linguistically available or not. In a language like English, indexicals like ‘I’ and ‘you’ never shift, so we conclude that a monster is never introduced under an attitude verb. Even though English indexicals can, in theory, shift — there is nothing in their linguistic environment to actually shift them, causing them to refer, by default, to the utterance-context. Conversely, in the Athapaskan language Slave (Rice, 1986, 1989), a 1st-person indexical has been observed to obligatorily shift under certain predicates, as has Turkic Uyghur (Shklovsky and Sudo, 2014): predicates in these languages thus obligatorily introduce the context-overwriting monster in their scope. The monster may also parametrically vary with respect to which set of contextual parameters it may overwrite. The λ_{Auth} overwrites only the *Author* coordinate and will thus will only shift 1st-person indexicals in its scope, a $\lambda_{Location}$ will shift only spatial indexicals (like ‘here’) in its scope yielding shifted spatial interpretations, while the λ_V can shift all contextual coordinates in its scope, yielding indexical shift across all parameters. As mentioned above, Deal (2017) shows that there seem to be strict implicational restrictions placed on this type of variation: to capture this, Deal proposes that λ s are in a tight selectional relationship with one another. Certain impossible permutations of λ s are thus successfully ruled out as a function of structural incompatibility.

3.2 Pronoun-centric view (PC)

Under the pronoun-centric view, espoused predominantly by Philippe Schlenker (Schlenker, 1999, 2003, et seq.), the difference between shifted and unshifted readings lies in the denotations of individual indexicals themselves. Furthermore, the λ manipulates contexts in its scope in a different way than under MC. Under PC, indexical shift obtains, not due to contextual-resetting, but due to *quantifier binding* of free contextual variables in the scope of the monstrous quantifier. This difference has a significant further consequence: since the utterance-context is never actually overwritten, it freely co-occurs alongside the intensional one.² As we will see, such “dual contexts” do seem to be empirically attested in natural language, providing further support for such a quantificational view.³

Furthermore, PC is non-selectional: the λ is not a distinct grammatical element selected under an attitude verb; rather, it *is* the attitude verb. This, too, we will see has non-trivial implications for the typology of indexical shift. The clause selected by an intensional predicate is more fine-grained than what is traditionally assumed under standard model-theoretic accounts: it is of type $\langle k, t \rangle$, a function from contexts (type k), itself a tuple consisting of $\langle Author, Addressee, Time, World, Location \rangle$ — to truth values (type t). The root clause is also of type $\langle k, t \rangle$, with the crucial presupposition that the context introduced by the top-most binder at the root-level is the utterance-context.

²A different influential theory of indexical shift, which I don’t discuss here, is that of von Stechow (2002), which also proposes that indexical shift obtains due to quantifier binding. However, unlike in Schlenker’s account, variation for indexical shift lies in the structural conditions under which quantifier binding may obtain, not on the lexical prespecification of individual indexicals.

³Strictly speaking, at this stage, such data merely argues *against* a context-overwriting approach. However, I will end up arguing that a quantificational approach does indeed do the job in getting the rest of the facts right.

Given these distinctions, it is clear that MC and PC derive parametric variation for shifting in sharply different ways. Under the former, as we saw, variation for indexical shift arises as a function of the presence vs. absence of a $\hat{\omega}$ in the scope of an attitude verb. Under the latter, on the other hand, a $\hat{\omega}$ is not distinct from the attitude verb: as such, a sentence with an attitude verb also invariably contains a $\hat{\omega}$. Parametric variation for indexical shift thus arises as a function of the properties of the *bindee*, namely the indexical itself, specifically as a result of whether the contextual variable associated with an individual indexical is bindable or not. Schlenker proposes that indexicals are free variables that are associated with context variables that introduce ϕ -feature information as morphosemantic presuppositions (Heim and Kratzer, 1998). A *rigid* indexical like “I” in English, never shifts because it is lexically pre-specified to be evaluated against the utterance-context (c^*) alone.

$$(7) \quad \llbracket I_{English} \rrbracket^{c,g} = \left[\left[\bigwedge_{\mathbf{I}_5 \ \mathbf{i}_k} \right] \right]^{c,g} = g(5) \text{ iff } g(5) = Author(c)$$

An *optionally shifting* “I” like in Amharic or Zazaki is underspecified as to the context it is evaluated against.

$$(8) \quad \llbracket I_{Amharic} \rrbracket^{c,g} = \left[\left[\bigwedge_{\mathbf{I}_5 \ \mathbf{i}_k} \right] \right]^{c,g} = Author(g(i_k)), \text{ iff there is a unique speaker of } g(i_k)$$

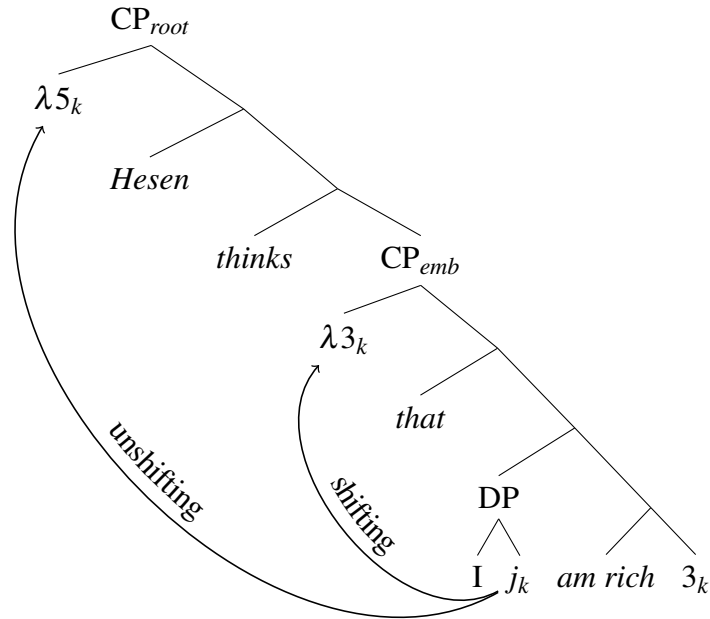
An *obligatorily shifting* “I”, like that in Slave or Uyghur is lexically specified to be evaluated against a non-utterance-context.

$$(9) \quad \llbracket I_{Slave} \rrbracket^{c,g} = \left[\left[\bigwedge_{\mathbf{I}_5 \ \mathbf{i}_k} \right] \right]^{c,g} = Author(g(i_k)) \text{ iff there is a unique speaker of } g(i_k) \text{ and } g(i_k) \neq c$$

Below is a derivation of the optionally shifting Zazaki sentence in (3) under the pronoun-centric view:

$$(10) \quad [\text{Hesen}_j \text{ thinks } [_{CP} \text{ that } I_{\{j, Auth(c^*)\}} \text{ am rich}]].$$

(11)



As (11) shows, indexical shift obtains when the context-variable associated with Zazaki ‘I’ is bound by the closest intensional quantifier (the $\lambda 3_k$); however, the utterance-context remains available even under such a reading. When Zazaki ‘I’ is bound by the root-level quantifier instead, we get the default unshifted reading, instead.

4 Challenge I: Shift Together violations

Having presented the two major approaches to indexical shift, I now turn to the first of three empirical challenges to these approaches. This has to do with the restriction termed, in the literature, the “Shift Together Constraint”, originally observed in Anand and Nevins (2004) and used as a primary argument in favor of MC. Below, I first introduce this restriction as well as the data that originally motivated it. I then turn to what I believe is a genuine exception to Shift Together, involving so-called *monstrous agreement* sentences in the Dravidian language, Tamil (Sundaresan, 2011, 2012). As I argue below, such data is potentially fatal for MC which predicts Shift Together to always obtain. At the same time, it is also problematic for PC. While PC *can* accommodate exceptions to Shift Together, it does so at a fairly stiff cost, namely that it does not predict Shift Together itself, which is, in fact, a robust crosslinguistic constraint.

What we really need is an *intermediate* theory that can account for exceptions to Shift Together while simultaneously explaining their status as *exceptions*: i.e. while also being able to account for why Shift Together is such a robust generalization in other languages.

4.1 Introducing Shift Together

Anand (2006, Ex. 297, 100, updated from the original observation in Anand and Nevins, 2004) defines the Shift Together Constraint as follows: “All shiftable indexicals within an attitude-context domain must pick up reference from the same context.” The constraint is motivated by patterns like those in Zazaki (12) below (reformatted from Anand and Nevins, 2004, 4, Ex. 13):

- (12) Vizeri Rojda Bill-ra va ke ez to-ra miradiša
 Yesterday Rojda Bill-to said that I you-to angry.be-PRES
 LIT. “Yesterday Rojda said to Bill that I am angry at you.”
 READING 1: ✓ “Yesterday Rojda_i said to Bill_j that he_i is angry at him_j.”
 READING 2: ✓ “Yesterday Rojda_i said to Bill_j that I_{Auth(c*)} am angry at you_{Addr(c*)}.”
 READING 3: ✗ “Yesterday Rojda_i said to Bill_j that I_{Auth(c*)} am angry at him_j.”
 READING 4: ✗ “Yesterday Rojda_i said to Bill_j that he_i is angry at you_{Addr(c*)}.”

(12) contains two shiftable indexicals ‘I’ and ‘you’ in the scope of a speech predicate. Given that Zazaki is a language with optional indexical shift, we predict in theory four possible outputs, corresponding to Readings 1–4 above, varying according to whether each individual indexical shifts or not. However, Anand and Nevins show that only two of these four logical possibilities is actually attested: either both indexicals must shift (Reading 1), or both indexicals must remain unshifted (Reading 2). The two remaining readings (Readings 3–4), corresponding to structures where only one indexical shifts, are illicit. Such patterns, repeated across many languages, suggest, then, that indexicals must either shift together or not at all — yielding the Shift Together Constraint.

The Shift Together Constraint remains one of the strongest arguments for an operator-based approach to indexical shift, like MC. Under this view, the fact that one indexical shifts diagnoses the presence of a $\hat{\lambda}$ above this indexical. But recall that this $\hat{\lambda}$ is a context-overwriting operator: as such, it will replace the utterance-context in its scope with that of the intensional index associated with the attitude verb that introduces it. If there is *another* shiftable indexical in the scope of this $\hat{\lambda}$ — such an indexical then *has no choice but to shift*, yielding Reading 1 in (12). “Mixed” readings like Reading 3 and Reading 4 in (12) will simply never arise under such a view.⁴ Shift Together thus falls out for free under MC.

The situation under a quantifier-binding approach like PC is rather different. Here, a quantificational $\hat{\lambda}$ is always present wherever an intensional environment is available, but an indexical may nevertheless “choose for itself” whether to be bound by this $\hat{\lambda}$ or not. To account for the Zazaki patterns above, we simply need to assume that indexicals in Zazaki come in two lexical varieties: shiftable and unshiftable. PC thus falsely predicts all four readings in (12) to be licit. To account for the unavailability of Readings 3 and 4, and for Shift Together in general, PC thus needs to say something extra, such as constraining the possibilities for the shifting of indexicals bound by a monster within a local domain through independent principles (as Anand and Nevins, 2004, suggest).

In sum, the Shift Together Constraint, taken by itself, serves as a strong empirical argument for a globalist monster-centric view over a more localist one, like PC.

⁴Under MC, Reading 1 in (12), of course, diagnoses a structure where there is simply no $\hat{\lambda}$ in the structure to begin with.

4.2 Shift Together violation in Tamil

Here, I present a set of data from the Dravidian language Tamil which seem to violate the Shift Together Constraint. Sundaesan (2012) reports that Tamil instantiates indexical shift for 1st-person, a claim that is corroborated for the closely related language Telugu in Messick (2016). Such indexical shift obtains in clausal complements of speech predicates involving what Sundaesan terms “monstrous agreement”.

4.2.1 Introducing monstrous agreement

In (13) below, the predicate of a 3rd-person speech report surfaces with 1st-person agreement under an anaphor:

- (13) Raman_i [_{CP} taan_{i,*j} Sudha-væ virũmb-ir-een-nnũ] so-nn-aan.
 Raman ANAPH.NOM.SG Sudha-ACC love-PRS-1SG-COMP say-PST-3MSG
 “Raman_i said [_{CP} that he_{i,*j} is in love with Sudha].”
 Lit: “Raman_i said [_{CP} that self_{i,*j} am in love with Sudha].”

Sundaesan (2011, 2012) refers to this 1st-person agreement on the embedded verb as *monstrous agreement*. (13) contains a matrix speech predicate *sonnaan* (said.3MSG) which selects a clausal complement. The subject of this complement is the anaphor *taan* which is obligatorily coreferent with *Raman* and is interpreted obligatorily *de se*. Crucially furthermore, *taan* in Tamil, like many anaphors crosslinguistically, can only take 3rd-person antecedents (not 1st or 2nd-person antecedents). What is thus quite unexpected, at least on the face of it, is the 1SG agreement marking on the embedded verb *ẽejppeen*.

Sundaesan (2012) shows that the embedded clause in (13) constitutes an indirect, not a direct, speech report. Treating it like a direct speech report (a quoted string, in other words) would entail that the subject anaphor is interpreted logophorically, as it would be in a root clause — which it is clearly not, here. Furthermore, the embedded clause is transparent to operations across it — such as NPI licensing by a matrix Neg operator (as in (14)) and long *wh*-object movement, as in (15):

- (14) Raman_i [_{CP} taan_{i,*j} orũ tappu-m
 Raman[NOM] [ANAPH-SG.NOM one mistake=NPI
 se-nẽ-een-nnũ] ottukka-læ.
 make-PST-1SG-COMP admit-NEG
 “Raman_i didn’t admit [_{CP} that he_{i,*j} made any mistake.]”
- (15) Raman_i jaaræ_x [_{CP} taan_{i,*j} t_x adi-čč-een-nnũ]
 Raman[NOM] whom [ANAPH-SG.NOM t hit-PST-1SG-THAT]
 so-nn-aan?
 say-PST-3MSG
 “Who(m)_x did Raman_i say [_{CP} that he_{i,*j} hit t_x]?”

Sundaesan also shows that the apparent “mismatch” singles out the person feature. The number feature of the embedded verb must faithfully match the features of the matrix subject (and the anaphor that corefers with it), showing that monstrous agreement instantiates a genuine form of agreement:

- (16) Pasaŋ-gal_i [CP taan-gal_{i,*j} ɕej-pp-oom-ünnü] so-nn-aan-gal.
 boy[NOM.PL] ANAPH[NOM.PL_{i,*j}] win-FUT-1PL-COMP say-PST-3MPL
 “The boys_i said [CP that they_{i,*j} would win].”

Sundaesan proposes that monstrous agreement is triggered by a 1st-person *pro* in the periphery of the embedded clause. Further, this *pro* is obligatorily shifted and thus denotes the *Author* of the intensional index associated with the speech predicate — in other words, Raman. Further support for this claim comes from the fact that this phenomenon obtains only under a subset of attitude predicates. Monstrous agreement has also been observed for Turkish (Gültekin Şener and Şener, 2011) and potentially also Mishar Tatar (Podobryaev, 2014) (pace Deal (2018)).

4.2.2 Monstrous agreement violates Shift Together

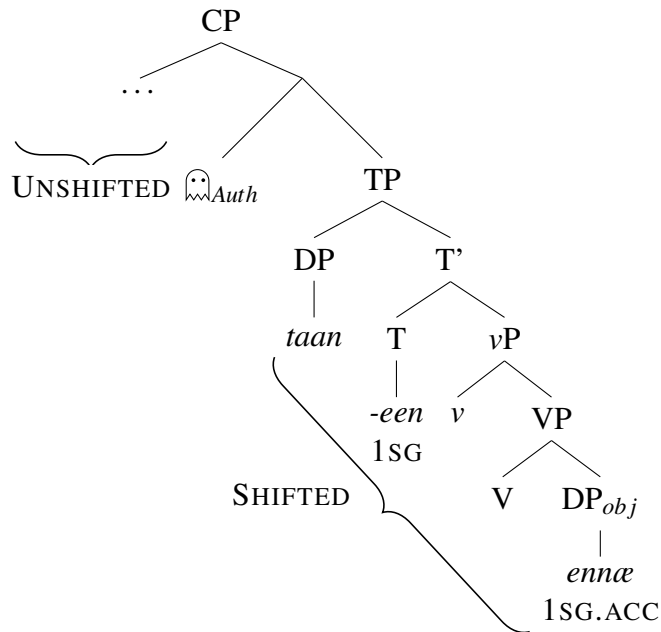
Consider the monstrous agreement sentence in (17) below:

- (17) Raman_i [CP taan_{i,*j} kaŋŋaaɖi-læ enn-æ paar-tt-ee-nn-ü]
 Raman.NOM ANAPH.NOM mirror-LOC me-ACC see-PST-1SG-COMP
 ottüŋq-aan.
 admit.PST-3MSG
 LIT: “Raman admitted [CP that self had seen me in the mirror].”
 READING 1: ✓ “Raman_i admitted that he_{i,*j} had seen me_{c*} in the mirror.”
 READING 2: ✗ “Raman_i admitted that he_{i,*j} had seen me_i in the mirror.” i.e.
 “Raman_i finally admitted that he_{i,*j} had seen himself_i in the mirror.”

Under the analysis in Sundaesan (2012), the sentence in (17) instantiates a superficial counter-example to the Shift Together Constraint. The 1SG monstrous agreement on the embedded verb diagnoses the presence of a 1st-person *pro* in the embedded CP which is, moreover, obligatorily shifted. This co-occurs with the 1st-personal direct object *ennæ*, which remains, however, crucially *unshifted*. We thus have a shifted and an unshifted 1st-person indexical in the same intensional domain, in direct contradiction of the Shift Together Constraint.

The possibility of such a reading is obviously problematic for a monster-centric account. Under MC, monstrous agreement would diagnose the presence of a $\hat{\omega}_{Auth}$ selected by the attitude verb. All 1st-person indexicals in the scope of the $\hat{\omega}_{Auth}$ would be predicted to *necessarily shift*. The embedded clause, denoting the speech report in (17), depicts the state-of-affairs illustrated in (18) below, which is predicted to be impossible under MC:

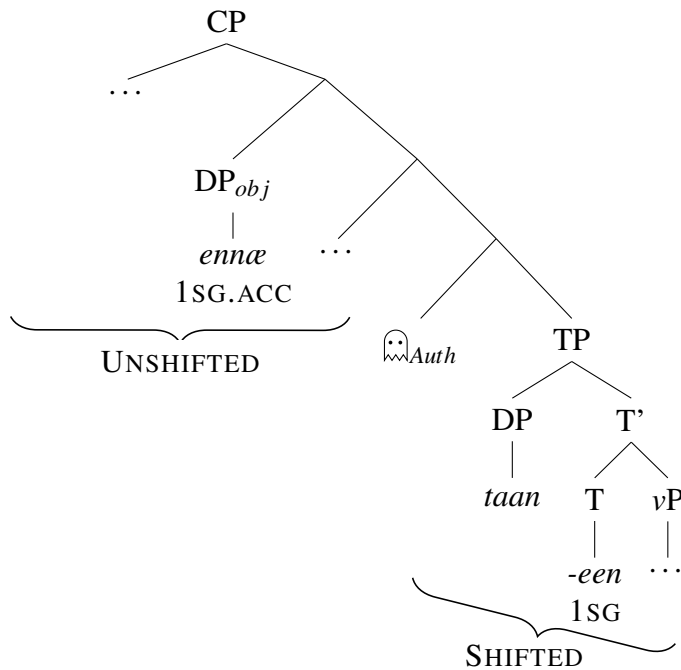
(18)



4.3 Unviable option: $\text{DirectObject}_{1st.acc} \gg \text{Auth}$

One way to salvage this apparent paradox within MC would be to propose that the Auth intervenes between the unshifted 1st-person direct object and the shifted 1st-person *pro* — yielding the structure in (19). Since only the *pro* falls under the scope of Auth , only it is shifted:

(19)



But (19) is unviable for two reasons: (i) The direct object in (17) must be base-merged below Auth and also does not A-move about Auth ; (ii) The direct object also

does not obligatorily A-bar *move* to a position above $\hat{\omega}_{Auth}$. In other words, there is necessarily always a scenario where the 1st-person direct object *ennæ* occurs below $\hat{\omega}_{Auth}$ post-syntax and pre-reference assignment at LF, in a monstrous agreement sentence, and should thus be shifted.

4.3.1 DirectObject_{1st.acc} is base-merged below $\hat{\omega}_{Auth}$

Let us assume that verbal agreement in Tamil spells out T or Asp (Amritavalli and Jayaseelan, 2005), as also independently confirmed by the ordering of verbal suffixes (Sundaresan and McFadden, 2017), and is formalized via downward Agree with a nominative argument. This means that monstrous agreement in a sentence like (17) must be triggered by nominative *taan* or *pro*.1SG. We then have two possible relative hierarchies of *pro*.1SG and the direct object.

In the first, the shifted *pro*.1SG *pro*.1SG_c-is base-merged below the unshifted 1st-personal direct object; *pro*.1SG must be in the scope of the $\hat{\omega}_{Auth}$ since it is shifted. This entails that $\hat{\omega}_{Auth}$ will also scope over the direct object. Thus, Shift Together is predicted in this scenario. In the second scenario, the direct object is base-merged below *pro*.1SG. Such a scenario would yield the structure in (20), which is, in fact, superficially indistinguishable from one involving a true exception to Shift Together (since the $\hat{\omega}_{Auth}$ is silent):

(20) [_{CP} ... [_{TP} T_{1sg} [_{VP} *taan* ... *me*.ACC_c* ... $\hat{\omega}_{Auth_i}$... *pro*.1SG_i]

However, (20) also predicts that agreement on T/Asp should be triggered, not by *pro*.1SG, but by the direct object, since this is minimally closer. In (21) and (22) below, the direct object is not 1st-person, thus this prediction can be put to the test. If verbal agreement were triggered by the direct object, we would expect 3FSG and 3PL agreement on the embedded verb, respectively. Instead, we again get only 1SG agreement in both cases:

(21) Sri [_{CP} *taan*_{i,*j} *ava*[-æ_j *uttū* *paar-ttūṅq-irū-kkir-een/*aa*[-nnū]
 Sri ANAPH.NOM she-ACC intensely see-ASP-be-PRS-1SG/*3FSG-COMP
 so-nn-aan.
 say-PST-1SG

LIT: “Sri_i said [_{CP} that self_{i,*j} am_i observing her_j intensely.]”

READING: “Sri_i said [_{CP} that he_{i,*j} was observing her_j intensely.]”

(22) Sri [_{CP} *taan*_{i,*j} *avan.ga*[-æ_j *uttū*
 Sri ANAPH.NOM they.PL-ACC intensely
*paar-ttūṅq-irū-kkir-een/*aanga*[-nnū] so-nn-aan.
 see-ASP-be-PRS-1SG/*3PL-COMP say-PST-1SG

LIT: “Sri_i said [_{CP} that self_{i,*j} am_i seeing them_j intensely.]”

READING: “Sri_i said [_{CP} that he_{i,*j} was seeing them_j intensely.]”

I take these conclusions to show that verbal agreement is not triggered by the direct object but by *pro*.1SG, in line with Sundaresan (2012). This in turn means that *pro*.1SG c-commands the direct object — a scenario that predicts Shift Together, as we have seen.

Further evidence that the direct object is base-merged below the subject in [Spec, vP] and, furthermore, doesn’t A-move to a position above it, comes from subject-object

binding asymmetries in Tamil. Essentially, subjects can bind (direct-)objects, but objects cannot bind subjects, as illustrated below:

- (23) Sri_i tann-æ_{i,*j} kaṇṇaadi-læ aṭagūpaar.ttū-ṇḍ-aan.
 Sri.NOM ANAPH-ACC mirror-LOC checkout.ASP-PST-3MSG
 “Sri_i checked himself_{i,*j} out in the mirror.”
- (24) *Taan_{i,*j} Sri-æ_i kaṇṇaadi-læ aṭagūpaar.ttū-ṇḍ-aan.
 Sri.NOM ANAPH-ACC mirror-LOC checkout.ASP-PST-3MSG
 LIT: “Self_{i,*j} checked Sri_i out in the mirror.”
 INTENDED: “Sri_i checked himself_{i,*j} out in the mirror.”

In (23), *taan* is locally bound by its antecedent *Sri* and the sentence is grammatical. The sentence in (24) is, however, sharply ungrammatical: we have a violation of both Binding Conditions A and C. If, however, the direct object *Sri* were either based-merged above the subject or had A-moved above it in the course of the derivation, we would expect both to be amnestied and for the sentence to be(come) grammatical.

4.3.2 DirectObject_{1st.acc} doesn’t A-bar move above $\overset{\text{Auth}}{\text{Auth}}$

A different, and potentially more concerning, option that we need to rule out here, is one where the 1st-person direct object in a sentence like (17) A-bar moves up to a position above the $\overset{\text{Auth}}{\text{Auth}}$. Such movement would happen in the post-syntactic part of the derivation, at LF — thus would obtain too late to affect ϕ -agreement or binding relations due to A-movement. It would also be covert, thus wouldn’t be detectable by superficial word order. Assuming, as is indeed standard, that such A-bar movement happens before the $\overset{\text{Auth}}{\text{Auth}}$ and the respective indexicals are interpreted by the assignment function — we would get an LF structure like that in (19), giving us an immediate explanation for the apparent Shift Together violation in (17).

Here, I provide evidence from scope facts to argue that, while there is in fact an LF structure corresponding to that in (19), there is *also* an LF structure corresponding to the offending one in (18). In other words, there is *always* an LF structure where the 1st-personal direct object in (17) remains below the $\overset{\text{Auth}}{\text{Auth}}$, leading us to predict that this direct object should be capable of being shifted, at least some of the time.

Consider first (25) below:

- (25) Sri_i [_{CP} taan_{i,*j} enn-oo:ḍæ muu:ṇṅ akkaa-væ=jum orū daram
 Sri.NOM ANAPH.NOM me-GEN three sister-ACC=CL one time
 paar.tt-iru-kkir-een-nnū] so-nn-aan.
 see.ASP-COP-PRS-1SG-COMP say-PST-3MSG
 “Sri_i said [_{CP} that he_{i,*j} has seen (all) my_{c*} three sisters once.” (✓three ≫ once; ✓once ≫ three)

(25) is scopally ambiguous: either there is one specific occasion in which Sri has seen all my three sisters (*once* ≫ *three*); or, for my three sisters, it is the case that Sri has seen them on one occasion (not necessarily the same one) (*three* ≫ *once*).

The relevant scope for our purposes is *once* ≫ *three*, which is reinforced in (26) below, with the addition of an emphatic adverb ‘only’:

- (26) Sri_i [CP taan_{i,*j} enn-oo:ɖæ muu:ŋũ akkaa-væ=jum oreē orũ
 Sri.NOM ANAPH.NOM me-GEN three sister-ACC=CL one.EMPH one
 daram daan seendũ paar.tt-iru-kkir-een-nnũ] so-nn-aan.
 time only together see.ASP-COP-PRS-1SG-COMP say-PST-3MSG
 “Sri_i said [CP that he_{i,*j} has seen all my_{c*} three sisters together only once.” (X
 three ≫ once; ✓ once ≫ three)

The availability of this reading (in both (25) and (26)) shows that there is a structure where the direct object *enn-oo:ɖæ muu:ŋũ akkaa-væ=jum* (‘all my three sisters’) stays in its base-merge position at LF. We have already established that this base-merge position is below $\hat{\omega}_{Auth}$: as such, there must be an LF structure corresponding to (18) where the 1st-person direct object is in the scope of $\hat{\omega}_{Auth}$ and must be shifted.

4.4 Against a logophoric treatment

In recent work Deal (2017, 2018), proposes that superficial exceptions to Shift Together don’t involve bonafide indexicals at all but a different kind of lexical item, namely “indexiphors”. Deal proposes that “An indexiphor is like a logophor and unlike an indexical in that it must be bound by a(n) [logophoric] operator in the left periphery of an embedded clause... At the same time, it is like an indexical in the agreement that it controls.” (Deal, 2018, 2). Semantically, the indexiphor is just a standard anaphor — i.e. a pro-form with a variable (reference) assignment, as in (27); a first personal indexical, in contrast, is free: its reference depends on the context of evaluation alone, not on its assignment, as in (28):

$$(27) \llbracket log_n \rrbracket^{c,g} = g(n)$$

$$(28) \llbracket 1sg \rrbracket^{c,g} = Author(c)$$

The two elements are very difficult to distinguish given their featural identity and that they are both interpreted *de se* and both trigger 1st-person agreement. But Anand (2006) and Deal propose that we can tease them apart with respect to two diagnostics: Shift Together and the De Re Blocking effect.

Indexicals, being context-sensitive, must obey Shift Together, under a monster-centric theory of indexical shift, which both Anand and Deal assume. Indexiphors, in contrast, being merely logophoric, are exempt from this restriction. The De Re Blocking effect, in contrast, singles out indexiphors. The De Re Blocking Effect essentially executes a type of Relativized Minimality effect on bound *de se* pro-forms. Concretely, it states that a *c*-commanding *de re* pronoun which is similar enough to a bound *de se* pronoun — either by virtue of bearing the same ϕ -features as it or by picking out a different counterpart of the same individual⁵ — may not intervene between this *de se* pronoun and its binder.

Assuming that this reasoning is on the right track, a legitimate concern that we must now address, therefore, is whether the superficial Shift Together violations in Tamil

⁵The disjunctive nature of these requirements is not pretty, as Deal (2018) admits — yet the De Re Blocking Effect does seem real enough (see Pearson and Dery, 2013, for an experimental study reporting on the validity), though how it should be explained, or even the extent to which it may serve as a reliable diagnostic for logophoricity, may be less so.

actually involve a “shifted” indexiphor and unshifted indexical in a local domain or two bonafide indexicals? The target sentence in (17) only constitutes a Shift Together exception in the latter scenario; in the former, Shift Together is not expected to be obeyed to begin with, since only the contextually sensitive pro-form, i.e. the indexical, will be sensitive to the structural presence of a $\hat{\omega}$.

Initial evidence suggests that the De Re Blocking Effect does not hold for monstrous agreement sentences in Tamil.⁶ Consider a variant of the sentence in (25) below:

- (29) Sri_i [CP taan_{i,*j} enn-oo:ɖæ muu:ŋũ akkaa-voovɖæ ennæ orũ
 Sri.NOM ANAPH.NOM me-GEN three sister-WITH me-ACC one
 daram paar.tt-iru-kkir-een-nnũ] so-nn-aan.
 time see.ASP-COP-PRS-1SG-COMP say-PST-3MSG
 “Sri_i said that he_{i,*j} has seen me_{c*} with my_{c*} three sisters once.” (✓three ≫
 once; ✓once ≫ three)

Just like (25), (29) is scopally ambiguous. The crucial difference between the two sentences lies in the choice of direct object: in (29) above, the direct object involves an unshifted 1st-person indexical with a PP adjunct containing a numeral (‘my three sisters’). Assuming that the temporal adverb ‘once’ is merged higher than the subject, the reading where THREE ≫ ONCE diagnoses an LF structure where the direct object scopes over the subject *taan*. We can force this distributive scopal reading by reduplicating the numeral *orũ* (‘one), as in (30):

- (30) Sri_i [CP taan_{i,*j} enn-oo:ɖæ muu:ŋũ akkaa-voovɖæ ennæ orũ orũ
 Sri.NOM ANAPH.NOM me-GEN three sister-WITH me-ACC one one
 daram paar.tt-iru-kkir-een-nnũ] so-nn-aan. (✓three ≫ once; ✗once
 time see.ASP-COP-PRS-1SG-COMP say-PST-3MSG
 ≫ three)

LIT: “Sri_i said that self_{i,*j} has seen me_{c*} with my_{c*} three sisters one one time.”
 INTENDED: “Sri_i said that he_{i,*j} has seen my_{c*} with each of my_{c*} three sisters
 once (possibly a different occasion each time).”

(30) shows, again, that the direct object must be above the anaphoric subject *taan* at LF. But note now that the direct object is an unshifted 1st-person indexical. Being unshifted, it is interpreted *de re*; being 1st-person, it constitutes an intervener for *de se* binding of an indexiphor. Finally, note that (30) involves monstrous agreement on the main verb, thus must contain either a shifted 1st-person indexical or an indexiphor. But of course, under an indexiphoric parse, we might expect the direct object to cause ungrammaticality due to a De Re Blocking Effect. The fact that we do not get such ungrammaticality, thus suggests that monstrous agreement is indeed due to a shifted 1st-person indexical, and not due to an indexiphor.

The data in (29)-(30) are promising, but unfortunately cannot be taken to be conclusive. I have been following the analysis of monstrous agreement in Tamil in Sundaresan

⁶Note, incidentally, that this is no small task. As I have argued, *pro*.1sg is itself in the subject position or higher. We essentially need a certain kind of *de re* pronoun to structurally intervene between the *de se* 1st-person *pro* and its binder in the clausal periphery, so the *de re* pronoun must be even higher than this.

(2012) wherein the shifted element is not the element *taan*, which is, in fact, a perspectival anaphor (or logophor), but the binder of *taan*, which Sundaresan argues to be a 1st-person *pro* in the specifier of a Perspectival Phrase in the clausal periphery. The evidence in (29)-(30) shows that the direct object may licitly occur above *taan*, not whether it occurs above or below its *pro* binder. The latter is potentially impossible to test, given that *pro* itself is silent and there doesn't seem to be a straightforward way to isolate its scopal behavior from that of *taan*. This means, then, that we simply may not be able to use the De Re Blocking Effect as a litmus test for Tamil monstrous agreement sentences.

However, an indexiphoric treatment of such sentences is potentially problematic in other ways. A potentially serious issue has to do with the relative distributions of logophors and indexicals. In the cases discussed in Deal (2018), the distribution of shifted indexicals across different attitude verbs matches that of indexiphors: i.e. indexical shift is possible in the same intensional environments that indexiphoric binding is, and vice-versa. For Deal (cf. Fn. 15), this must follow from the notion that the logophoric operators that bind indexiphors are subject to the same selectional restrictions as the contextual operators (or λ s) that induce indexical shift. And yet, this cannot be quite right. Logophors do, indeed, seem to be sensitive to the same implicational hierarchy of predicates as shifted indexicals (Culy, 1994; Speas, 2004; Sundaresan, 2012): i.e. a given logophor or shifted indexical is most likely to occur under a speech predicate, and least likely to occur under an epistemic predicate. Nevertheless, the distribution of logophors seems crosslinguistically systematically less restricted than that of indexical shift. Sundaresan (2012) argues in detail that long-distance anaphora and logophora in Tamil occurs under a wide range of environments including propositional complements, temporal and spatial PPs and CPs and in root clauses in free-indirect-discourse scenarios. But monstrous agreement involving *taan* occurs only in a very small subset of these cases: namely, only in the complement of speech and, to a lesser extent, thought predicates. The other cases of non-local anaphora involving *taan* crucially involve a clausemate verb where monstrous agreement is disallowed. Baker (2008, Chapter 4) makes an essentially analogous observation.

For Deal (2018), as mentioned, an indexiphor is essentially identical to a bound variable anaphor. The only distinguishing characteristic between such an element and a non-indexiphoric anaphor is the presence of a 1st-person feature on the former. This feature is, however, crucially not relevant for the semantic interpretation nor, as far as I can see, does it place any special syntactic restrictions on feature-checking and only makes its presence felt in the morphology. As such, under an account where monstrous agreement in Tamil were due to such an indexiphor, the special restrictions on its distribution would be wholly surprising. In other words, we should actually expect shifty effects with indexiphors to occur in a much wider range of environments than bonafide indexical shift. In contrast, a view that treats monstrous agreement as reflecting indexical shift has a way to deal with these differences — specifically, in terms of selectional conditions that independently curtail when a λ may or may not occur.

A second issue has to do with locality. Deal (2018) proposes that indexiphors are locally bound by a logophoric operator. But it's far from clear that locality is a valid

diagnostic for logophoricity. Other languages with Shift Together violations such as varieties of Zazaki, Turkish and Kurdish, don't seem to obey it (Akkuş, 2018). Further, as Deal herself admits, *independent* evidence for sensitivity to locality among logophors is strikingly scarce. If anything, one of the hallmarks of many logophors crosslinguistically, is that they resist being locally bound (and are structurally recalcitrant in many other ways) (Koster and Reuland, 1991, among many others). There is mounting evidence in the literature (going back at least to Reinhart and Reuland, 1993, and more recently in Sundaresan, 2012; Nishigauchi, 2014; Charnavel, 2016) that logophors and more vanilla locally bound anaphors (in the sense of Chomsky, 1981) differ in many ways, both with respect to their syntactic distributions, interpretive possibilities and morphological realizations. Again, it is unclear why the presence of a 1st-person feature on this putative indexiphor should make it be sensitive to locality in this manner. This in turn makes it harder to justify the presence of indexiphors (locally bound logophors) on *independent* grounds.⁷

A final problem has to do with the idea of indexiphors as logophors triggering 1st-person (or 2nd-person) agreement. It has been noted since Rizzi (1990), and subsequent work in Woolford (1999); Baker (2008); Tucker (2011); Sundaresan (2016, a.o.) that anaphors are incapable of triggering “normal” (i.e. ϕ -covarying) agreement, plausibly because they themselves are ϕ -defective in some way — a crosslinguistically robust generalization termed the Anaphor Agreement Effect (AAE). Rather, such agreement either fails or is anomalous in one of many ways: i.e. is either a frozen default form, or a special form triggered in the scope of anaphors alone. It is thus unclear what the formal mechanism is that makes such agreement possible, in the case of indexiphors alone — nor is this further elucidated in the paper.

For these reasons, I reject an indexiphoric treatment of the Tamil monstrous agreement facts. It is of course possible that such an approach is warranted for other languages, but it is not straightforwardly applicable to Tamil. Sentences like (17) thus constitute a genuine exception to Shift Together and challenge operator-centric theories of indexical shift, like those under MC.

4.5 Shift Together violations in other languages

Preliminary evidence suggests that other languages may also involve Shift Together exceptions like those in (17). Akkuş (2018) discusses violations of Shift Together in Mutki Zazaki, Muş Kurdish, and a variety of Turkish. Below is the pattern for Mutki Zazaki (Akkuş, 2018, 18, Ex. 67):

- (31) Kemal Leyla-re va [e to ber-a kudie]?
 Kemal Leyla-to say.PST.3SG [I.DIR 2SG.OBL take-1SG where
 ‘Where did Kemal_i say to Leyla_j that . . . :
 i. I would take you?’
 ii. he_i would take her_j?’

⁷Tamil monstrous agreement structures, interestingly enough, obey the locality condition (Sundaresan, 2012). But this locality condition on Tamil monstrous agreement can be lifted under certain circumstances that are unexpected under Deal’s predictions — such as in doubly embedded clauses containing multiple instances of the anaphor *taan* — which I am investigating currently.

iii. (?)*he_i* would take you?

iv. *I would take her_j?⁸

Shift Together violations are potentially also attested in Telugu (Messick, 2016), Mishar Tatar (Podobryaev, 2014, *pace* Deal, 2017, 2018), and Late Egyptian (ca. 15th-7th cent. BC) (Kammerzell and Peust, 2002). The Mishar Tatar example in (32), from potentially also shows a violation of Shift Together (*pace* Deal, 2017, 2018):

- (32) Alsu [[[*pro* sestra-m] mine kür-de] diep-ı] at'-tɣ.
 Alsu sister-1SG I.ACC see-PST COMP say-PST
 LITERAL: “Alsui said that myi sister saw me_{c*}.”
 READING: “Alsui said that heri sister saw me_{c*}.”

Kammerzell and Peust (2002, 308) state for Late Egyptian that “within a single reported speech, pronouns of (formally) identical grammatical person have different referents — even in the case of the first and second person.” Consider (33), an excerpt from a juridical text, taken from Kammerzell and Peust (2002, 308, Ex. 25):

- (33)
 jm jr-y Nht.mw.t.f c'nh n- nb r-dd bn
 AUX.IMP make-SUBJ Nakhtmutef oath for- lord COMP NEG

 jw.j.r- nt^c m- ty-j- sr(t)
 FUT: 1S- divorce:INF from- DEM.F-1s- daughter

LITERAL: “Nakhtmutef_i should take an oath by the Lord (i.e Pharaoh) that I_i will not divorce my_{c*} daughter.”

READING: “Nakhtmutef_i should take an oath by the Lord (i.e Pharaoh) that he_i will not divorce my_{c*} daughter.”

SCENARIO: “A certain Nakhtmutef has behaved improperly towards the daughter of Talmonth. Now, Talmonth demands in court that Nakhtmutef swear not to repeat his action” Kammerzell and Peust (2002, 308).

Assuming these examples also involve bonafide (i.e. underlying as opposed to just superficial) exceptions to Shift Together — then they constitute a real challenge for MC. PC can deal with these exceptions unproblematically but it does so at a cost: namely that it cannot predict Shift Together at all, which is a robust constraint in many languages.

⁸The unavailability of this reading looks suspiciously similar to the De Re Blocking Effect, discussed above. This, in turn, might be taken to argue that the Mutki Zazaki (31) doesn't involve a Shift Together violation after all, but a “shifted” 1st-person logophor combined with an unshifted indexical. But Akkuş shows, among others, that sentences don't obey the locality condition that Deal (2018) considers diagnostic of logophoricity (Akkuş, 2018, 26, Ex. 98, for Mutki Zazaki). So I will continue to assume that these are cases of genuine Shift Together violation.

5 Challenge II: Dual contexts

In this section, I present novel evidence from embedded imperatives in Korean⁹ and supporting secondary evidence from Slovenian (drawing from the work of Stegovec and Kaufmann, 2015) to argue that the utterance-context persists and participates in grammatical dependencies, even in putatively shifted environments. Such data directly argue against an operator-based context-overwriting account, where the utterance-context is replaced with the index associated with the intensional verb, as in MC.

5.1 Korean *tal* vs. *cwu* in imperatives

As reported in recent work in Lee and Amato (2018), Korean has two forms of the verb ‘give’ — *cwu* and *tal*.¹⁰ While, *cwu* is the Elsewhere form, Lee and Amato report that *tal* is used when *all* the following conditions are satisfied: (i) the clause is imperative; (ii) the GOAL argument is coindexed with the speaker; (iii) the GOAL is construed as an eventual recipient of the THEME.

Here are some simple examples that illustrate the *cwu/tal* alternation:

- (34) INDICATIVE CLAUSE: *cwu*:
Chingwu-ka na-ekey satang-ul cwu/*tal-ess-ta.
friend-NOM I-DAT candy-ACC give-PST-DECL
‘The friend gave me_{c*} a candy.’
- (35) IMPERATIVE CLAUSE (NON-SPEAKER RECIPIENT): *cwu*:
Ne casin-eykey senmwul-ul cwu/*tal-la.
you ANAPH-DAT gift-ACC give-IMP.
‘Give yourself_{c*} a gift.’
- (36) IMPERATIVE CLAUSE (NON-RECIPIENT SPEAKER GOAL): *cwu*:
(Ne) na-ekey satang-ul cwu/*tal-ci-ma-la.
you-NOM I-DAT candy-ACC give-CI-NEG-IMP
‘Do not give me_{c*} a candy.’
- (37) IMPERATIVE CLAUSE (SPEAKER RECIPIENT): *tal*:¹¹
(Ne) na-ekey satang-ul tal-la.
you-NOM I-DAT candy-ACC give-IMP
‘Give me_{c*} a candy.’

⁹All the Korean data, not otherwise attributed to a source, comes from data collected in conjunction with Hyujung Lee (Leipzig). In addition to Lee’s own native speaker judgments, the results summarize an Acceptability Judgement Task with stimuli (on a 1-7 grammaticality scale), conducted by Lee among 24 native Korean speakers. 32 fillers of varying acceptability were added and the stimuli were counterbalanced and distributed.

¹⁰Lee and Amato also report a third form *tuli*, which is used with honorific datives, which I ignore for the purposes of the discussion here.


¹¹Lee and Amato (2018) report that *cwu* can also be used in this environment for many speakers, in apparent free variation with *tal*. However, in the study subsequently conducted by Lee on *tal*, she reports that, out of 24 native speakers, only 8 could get *cwu*; among these, none allowed *cwu* without also allowing *tal*.

The sentence in (34) is in the indicative mood, explaining why *tal* is automatically disallowed in this environment. (35) and (36) are imperative clauses, but *tal* is nevertheless disallowed in both for different reasons. In (35), the goal is the intended recipient of the theme (the gift), but is not the speaker; in (36), the goal is the speaker, but the use of clausal negation explicitly rules out any reading where this goal could be construed as a recipient of the theme (the candy). Thus, (37) is the only sentence that satisfies all the requirements for the legitimate use of *tal*: the clause is in the imperative mood, the goal is coindexed with the (utterance-context) speaker, and it is also construed as the eventual recipient of the theme, the candy.

What is interesting for our current purposes is that Korean also allows imperatives in embedded clauses. In such cases, the *cwu/tal* distribution follows much the same pattern as in root clauses. Nevertheless, the notion of speaker is crucially relativized in such cases: specifically, *tal* targets, not the utterance-context speaker, but the speaker argument of an immediately higher speech predicate. This is illustrated in (38) below:

- (38) a. Swuci-ka Yuswu-eykey [Cimin-ika Cengmi¹-eykey [casin¹-eykey
Swuci-NOM Yuswu-DAT Cimin-NOM Cengmi-DAT self-DAT
senmwul-ul cwu/*tal-la-ko] hay-ss-ta-ko] mal-hay-ss-ta.
gift-ACC give-IMP-C v-PST-DECL-C say-PST-DECL
Lit: ‘Swuci told Yuswu [that Cimin_i told Cengmi_j [to give self_j a gift.]]’
Intended: ‘Swuci told Yuswu [that Cimin_i told Cengmi_j “Give yourself a
gift.]]”’
- b. Swuci-ka Yuswu-eykey [Cimin¹-ika Cengmi-eykey [casin¹-eykey
Swuci-NOM Yuswu-DAT Cimin-NOM Cengmi-DAT self-DAT
senmwul-ul (cwu-*tal*)-la-ko] hay-ss-ta-ko] mal-hay-ss-ta.
gift-ACC give-IMP-C v-PST-DECL-C say-PST-DECL
‘Swuci told Yuswu [that Cimin_i told Cengmi_j [to give self_i a gift.]]’
Intended: ‘Swuci told Yuswu [that Cimin_i told Cengmi_j “Give me a gift.]]”’

In (38a), the anaphoric goal argument *casin* in the innermost clause is coindexed with the *Cengmi* in the immediately higher clause, denoting the *Addressee* of the telling event. The use of *tal* is disallowed and *cwu* is used instead. In (38b), in contrast, the anaphoric goal *casin* is coindexed with *Cimin*, denoting the *Speaker* of the medial telling event. Under these circumstances, the native speakers we tested overwhelmingly reported a preference for *tal* over *cwu*. None, in fact, allowed *cwu* for this sentence without *also* allowing *tal*.

We can make sense of the embedded *tal* facts in (38a)-(38b) above as follows. What *tal* tracks is a 1st-person Goal (who is also the eventual recipient). In embedded clauses like in (38b), the Goal denotes, not the utterance-context speaker, but the speaker of the speech event in the immediately higher clause. In other words, the 1st-person Goal in (38b) is a *shifted* 1st-person indexical, referring to the reported speaker. This in turn means that embedded *tal*-imperatives must be indexically shifted and contain a .

Additional evidence for this position comes from Pak et al. (2008)’s work on jussives in Korean. Pak et al. (2008) study three distinct clause types in root and embedded position: promissives, imperatives and exhortatives, in Korean, and argue that

these form a macro-clause type of “jussives”.¹² Jussive clause types systematically vary, not only with respect to their sentence-final particles (promissive *-ma*, imperative *-la*, exhortative *-ca*) but also with respect to the kind of (null) subject they may host (promissive (subject = Speaker); imperative (subject = Addressee); exhortative (subject = Speaker + Addressee)). All jussive clause-types may occur in root as well as embedded position. Pak et al. argue that, in embedded jussives, it is not the utterance-context participant but the reported participant (reported Speaker/Addressee) that is encoded as the subject. Against this background, Pak et al. propose that the jussive particles really instantiate a form of (person) agreement. The jussive particle heads a Jussive Phrase which carries person features, which enters an agreement relation with its clausemate subject. Embedded jussive clauses are indexically shifted, with the embedded jussive subject being a(n) (obligatorily) shifted indexical (e.g. a shifted 2nd-person indexical in *la*-imperatives). This is entirely consistent with our findings for *tal* in imperative clauses above and shows us that such clauses contain, not only the $\overset{\sim}{\sim}\text{Addr}$ present in all *la*-imperatives, but also a $\overset{\sim}{\sim}\text{Auth}$ that yields 1st-person indexical shift.

Final supporting evidence that embedded *la*-imperatives are shifted comes from the fact that *tal* cannot be used in imperatives that are selected by non-speech predicates (e.g. ‘believe’ or ‘want’ variants of (38b)). Such a typological restriction entirely parallels independent findings in Park (2014) that indexical shift for 1st and 2nd-person in Korean is only possible under verbs of speech.

Under an operator-based view of indexical shift as in MC, we might thus posit the following. An embedded *la*-imperative in Korean contains a $\overset{\sim}{\sim}$ operator introduced by the speech verb which selects it. Recall that, under MC, all indexicals are assumed to be capable of shifting. Assuming that this $\overset{\sim}{\sim}$ is a universal context-overwriting operator, it would thus shift all indexicals in its scope. Alternatively, we might, more conservatively, posit that *la*-imperatives only contain a $\overset{\sim}{\sim}\text{Addr}$ operator which shifts 2nd-person indexicals in its scope; in sentences where *la* is built on verbal *tal*, there is an additional $\overset{\sim}{\sim}\text{Auth}$ monster responsible for shifting 1st-person indexicals under it. In either view, we have a scenario where 1st and 2nd-person indexicals are necessarily shifted in *la*-imperatives containing *tal*.

Against this background, let us now consider (39) below:

- (39) Discourse Scenario: *My sister Cengmi, who is very fond of me, has a birthday coming up but doesn't know what to do to celebrate. Cimin, a mutual friend of ours, suggests to Cengmi that she have me visit her for her birthday, as a gift to herself on that day.*

Cimin_i-ika Cengmi_j-eykey [casin_i-eykey na_{c*}-lul (tal<cwu)-la-ko]
 Cimin-NOM Cengmi-DAT self-DAT I-ACC give-IMP-C
 mal-hay-ss-ta.
 say-PST-DECL

‘Cimin_i told Cengmi_j [to give me _{c*} (to) herself_i.]’

In (39), we have a 1st-person direct object in the embedded imperative: this denotes, not the reported Speaker Cimin, but the utterance-context Speaker. At the same time, the

¹²“In sum, we can view jussive clauses as those with the canonical function of adding a requirement to some individual [Speaker or Addressee, or both] in the conversational context” (Pak et al., 2008, 164).

clausemate anaphoric Goal *casin* is coindexed with the reported speaker Cimin, which is also understood to be the intended recipient of the theme: this in turn allows the use of the verbal allomorph *tal*. Incidentally, for 8 of the 24 speakers tested, *cwu* was *also* possible in this scenario (to greater or lesser degrees), as indicated: but crucially, *none* of them disallowed the use of *tal* in this sentence.

Assuming, as we have done, that the presence of *tal* diagnoses the representation of a shifted 1st-person indexical which in turn diagnoses the presence of a $\hat{\omega}_{Auth}$ in the imperative clause, the sentence in (39) constitutes another instances of a Shift Together violation (contra Park, 2014, who reports that Korean obeys Shift Together). I.e. we have a shifted 1st-person indexical and an unshifted 1st-person indexical in the same intensional domain. The Korean data thus suggests that the utterance-context is not overwritten under indexical shift after all: it continues to be available as an evaluation-point for indexical reference. This in turn argues against the idea that a $\hat{\omega}$ is a context-overwriting operator (as under MC), and more in favor of a quantifier binding approach to indexical shift, as in PC.

5.2 Slovenian embedded imperatives

Supporting evidence for the availability of dual contexts comes from embedded imperatives in Slovenian (see Stegovec and Kaufmann, 2015, for more). The 2nd-person indexical in embedded imperatives in Slovenian must be anchored to the utterance-context, as in (40) from Stegovec and Kaufmann (2015, 624, Ex. 7):

- (40) \check{Z} are₁ to Jure₂: Marko₃ jerekel Petru₄, damu_{3,4,k} pomagaj₂.
 Marko.NOM is said Peter.DAT that him.DAT help.IMP.2P.SG
 LITERAL: “Marko said to Peter that you should help him.”
 READING 1: ✓ “Marko₃ said to Peter₄ that you_{Addr(c*)} should help him_{3,4,k}.”
 READING 2: ✗ “Marko₃ said to Peter₄ that you₄ should help him_{3,4,k}.”

This is in direct contrast to embedded imperatives in Korean, as we have just seen. Under a simple monster-centric account of indexical shift, the embedded imperative in Slovenian, in contrast to that in Korean, would not contain a $\hat{\omega}$, accounting for the unavailability of a shifted reading on the 2nd-person indexical there. But while the *Addressee* feature in the Slovenian embedded imperative in (40) seems rigidly anchored to the utterance-context, other grammatical elements seem to be sensitive to the shifted one, suggesting the presence of a $\hat{\omega}$, after all.

Root imperatives “publicly commit their speaker to wanting the addressee to make the prejacent true” (Stegovec and Kaufmann, 2015, 625). This seems to be the case even when the speaker is ostensibly disinterested in, or neutral towards, the assertoric content of the imperative, as in (41) — as indicated by the anomaly of extending (41) as in (42):

- (41) Go right on Broad Street, then turn left on Locust.
 (42) # Go right on Broad Street, then turn left on Locust, *but I don’t want you to do that*.

Stegovec and Kaufmann refer to the “but I don’t want you to” follow-up as inducing a type of *distancing*, which is disallowed relative to the speaker for imperatives. What is

relevant for our current purposes is that such distancing, and the resulting anomaly that ensues in imperatives, can be used to discern the presence of a speaker.

Returning now to Slovenian, Stegovec and Kaufmann show that distancing in embedded imperatives tracks, not the utterance-context speaker, but the reported one. Such a contrast is diagnosed by minimal Pseudo-Slovenian pairs like the one below (adapted from Stegovec and Kaufmann, 2015, 626, Exx. 11-12):

- (43) # Paul_i said to me_{Auth(c*)} that (you_{Addr(c*)}) LISTEN.IMP.2P.SG to me_{Auth(c*)}, but (he_i added that) he_i didn't want that.
- (44) Paul_i said to me_{Auth(c*)} that (you_{Addr(c*)}) LISTEN.IMP.2P.SG to me_{Auth(c*)} but I_{Auth(c*)} don't want that.

In (44), the negated follow-up doesn't negate the Speaker of the matrix speech verb, which is Paul, but that of the utterance context ("I"). Crucially, this sentence is well-formed. This contrasts with the (nearly) minimally contrasting sentence in (43), where the negated preadjacent pronominally refers back to the reported speaker, namely Paul, which *is* ill-formed. Stegovec and Kaufmann take these types of pattern to mean that the indexical in embedded imperatives in Slovenian must be able to be evaluated against a shifted-context, picking out the reported speaker. At the same time, it is clear that, even in such a shifted environment, the utterance-context is not fully overwritten. After all, as we have seen in (40), the 2nd-person indexical in such embedded imperatives must be anchored to the utterance-context, not the reported one.

Based on such data, Stegovec and Kaufmann conclude that "In Slovenian, the conditions ensuring a non-assertive interpretation of the imperative largely have to be anchored to c_1 [the reported context], while the person feature behaves like a strict indexical and needs to be interpreted w.r.t. the actual context c " and continue to state that "Slovenian does therefore not display *Shift Together* of all indexicals. . ." (Stegovec and Kaufmann, 2015, 631). The authors propose a modification of Sudo (2012)'s version of MC, arguing that indexical shift obtains, not under context-overwriting, but via intensional quantificational binding, and that the "Imperative operator is a shiftable indexical that depends both on its context argument and on the context parameter of evaluation." [632].

The analysis of indexical shift that I develop, based partly on the challenges for Shift Together from Tamil, Korean and Slovenian will end up sharing many of these core insights. But it will crucially also take selectional asymmetries involved in indexical shift into consideration — modelling this in terms of structural asymmetries in clausal complementation. I turn to this data next.

6 Challenge III: Implicational selectional variation

The previous two sets of challenges have primarily undermined a context-overwriting approach to indexical shift, as under MC. The final set of challenges I discuss here will be seen to be problematic for both MC and PC, but predominantly for a non-selectional treatment of indexical shift, as in PC. The data discussed here collects evidence from three sources, and contributes to the growing body of indexical shift literature (Sundaresan, 2012; Koev, 2013, and more recently Deal, 2017) which have shown that is con-

siderable selectional variation in which predicates induce indexical shift in their scope. Furthermore, such investigations show that speech predicates are privileged relative to all other types of attitude predicate for indexical shift.

6.1 Central Iyer Dialect: Selectional variation in indexical shift

Consider the minimal graded contrasts between (45), (46) and (47) below in my dialect of Tamil: the Central Iyer dialect:

- (45) SELECTION BY ‘SAY’:
 Seetha_i [_{CP} taan_{i,*j} poot[ti-læ ɕej-čč-aa|een-nnũ]
 Seetha ANAPH.NOM.SG contest-LOC win-PRS-3FSG/1SG-COMP
 so-nn-aa|.
 say-PST-3FSG
 “Seetha_i said [_{CP} that she_{i,*j} had won the contest].”
- (46) SELECTION BY ‘THINK’:
 Seetha_i [_{CP} taan_{i,*j} poot[ti-læ ɕej-čč-aa|?een-nnũ]
 Seetha_i ANAPH[SG.NOM]_i contest-LOC win.FUT.3FSG/?1SG-that]
 nenæ-čč-aa|.
 think-PST-FSG
 “Seetha_i thought [_{CP} that she_{i,*j} would win.]”
- (47) SELECTION BY ‘DISCOVER’:
 Sri_i [_{CP} taan_{i,*j} poot[ti-læ ɕej-čč-aan/*een-nnũ]
 Sri_i ANAPH[SG.NOM]_i contest-LOC win.FUT.3MSG/*1SG-that]
 kaṇḍūpidi-čč-aan.
 discover-PST-3MSG
 “Sri_i discovered [_{CP} that he_{i,*j} had won the contest].”

The agreement on the clausemate verb of *taan* seems to show a *gradation* in acceptability: it is fully grammatical under ‘say’, less so under ‘think’ and least so (to the point of being ungrammatical) under ‘discover’.¹³

6.2 Dialectal microvariation in indexical shift

In personal fieldwork conducted in Tamil Nadu and Karnataka, India, I surveyed a total of 12 native speakers of the following four dialects of Tamil:¹⁴ Hebbar Iyengar (spoken in parts of Karnataka): 4 speakers; Kongu Tamil (spoken in western Tamil Nadu): 3 speakers; Palakkad Tamil (spoken in parts of Kerala): 3 speakers; Madras Bashai (spoken in Chennai): 2 speakers. The results of these elicitations confirmed the patterns reported in Section 6.1 above.

¹³The alternative to monstrous agreement is that the embedded verb faithfully reflects the ϕ -features of the antecedent of *taan* (also reflected on the matrix verb in these sentences) (this also happens with long-distance *taan*-anaphora in non-intensional environments) (Sundaresan, 2016).

¹⁴Methodology involved combination of spontaneous speech, targeted elicitation via non-verbal cues using storyboards, as well as translation, sentence completion, and judgment tasks. All interactions were recorded for sound.

Against the storyboard scenario in (48), the informants were presented the target sentence in (49) with monstrous agreement on the embedded verb and (50) with 3rd-person embedded agreement:

- (48) *Seetha is participating in a music competition. She has just heard that she has won first place. She then goes home and brags to her mother that she has won. Her mother then reports this to me.*
- (49) Seetha_i [taan_i ɕej-čč-ee-n-nũ] so-nn-aa].
 Seetha ANAPH.NOM win-PST-1SG-COMP say-PST-3FSG
 “Seetha_i said that she_i won.” (Intended)
- (50) Seetha_i [taan_i ɕej-čč-aa[-ũnnũ] so-nn-aa].
 Seetha ANAPH.NOM win-PST-3FSG-COMP say-PST-3FSG
 “Seetha_i said that she_i won.” (Intended)

While the informants varied in the degree to which they accepted (50), with many preferring a gerundival complement to ‘say’, the monstrous agreement variant in (49) was generally preferred by all. In addition to the speech scenario in (48), the story-boards also described belief and direct-perception scenarios. The belief scenario with its corresponding target sentences is given below:

- (51) *Seetha is participating in a music competition. She thinks she has done extremely well, especially compared to the other contestants who weren’t all that good, in her opinion. She thinks she’s is going to win. Her mother reports this to me as (52) or (53).*
- (52) Seetha_i [taan_i ɕej-čč-ee-n-nũ] nene-tt-aa].
 Seetha ANAPH.NOM win-PST-1SG-COMP think-PST-3FSG
 “Seetha_i thought that she_i won.” (Intended)
- (53) Seetha_i [taan_i ɕej-čč-aa[-ũnnũ] so-nn-aa].
 Seetha ANAPH.NOM win-PST-3FSG-COMP think-PST-3FSG
 “Seetha_i thought that she_i won.” (Intended)

The informants who generally dispreferred finite complements with matching ϕ -features continued to disprefer the variant in (53), choosing a gerundival alternant instead, so this was treated as an orthogonal variable. But there was markedly less unanimous consensus regarding the acceptability of (52), with a similar pattern emerging with the complements of direct perceptions verbs like ‘hear’ or ‘see’. This emerged as a clear pattern cross-cutting through the others: while there was variation in *how* easily monstrous agreement could be obtained under ‘say’, ‘think’ or ‘hear’/‘see’ from one dialect to another, the *relative* preference for ‘say’ over the other attitude verbs in a given dialect for effecting monstrous agreement in its scope was clear, for *all* informants.

Crucially, *no* informant in my sample was able to allow monstrous agreement with greater ease under ‘think’ or ‘hear’ than under ‘say’: speech predicates are thus clearly privileged for indexical shift, across other dialects of Tamil as well.

6.3 Crosslinguistic variation in indexical shift

The final set of data broadens the investigative lens still further and presents the results of crosslinguistic variation for indexical shift. This secondary data, culled from the

existing literature on this phenomenon, reports the results for 26 languages, spanning 19 distinct language families. These results, listed in Table 54 also confirm, without exception, the patterns seen above.

(54) Mini-typology of indexical shift across 26 languages (19 families):

Language	Family	Verb(s)	Class description
Tamil	Dravidian	SAY	optionally shifts 1st-person verb agreement
Telugu	Dravidian	SAY	optionally shifts 1st-person verb agreement
Dargwa	Northeast Caucasian	SAY	optionally shifts 1st-person verb agreement
Donna So (?)	Niger Congo	SAY	obligatorily shifts 1st-person verb agreement
Amharic	Semitic	SAY	optionally shifts 1st/2nd person indexicals
Aghem	Bantu	SAY	optionally shifts 1st/2nd person indexicals
Late Egyptian	Afro-Asiatic	SAY	optionally shifts 1st/2nd person indexicals
Kurmanji	Iranian	SAY	shifts 1st/2nd person indexicals
Navajo	Athabaskan	SAY	optionally shifts 1st/2nd person indexicals
Zazaki	Iranian	SAY	optionally shifts all indexicals
Matsés	Panoan	SAY, TELL	obligatorily shifts all indexicals
Laz	Kartvelian	SAY, THINK	obligatorily shifts 1st/2nd person indexicals
Nez Perce	Sahaptian	SAY, THINK, KNOW	optionally shifts 1st/2nd person and locative indexicals
Slave	Athabaskan	SAY ASK, TELL THINK, WANT	obligatorily shifts 1st person indexicals optionally shifts 1st/2nd person indexicals optionally shifts 1st person indexicals
Ancient Greek	Greek	SAY (e.g. say, order)	person and temporal indexical shift
Korean	Koreanic	SAY SAY, other attitude verbs	optionally shifts 1st/2nd person indexicals optionally shifts locative/temporal indexicals
Nuer	Nilotic	SAY, other attitude verbs	optionally shifts 1st-person verb agreement
Balkar	Turkic	SAY, other attitude verbs	optional indexical shift
Mishar Tatar	Turkic	SAY, other attitude verbs	optional indexical shift
Uyghur	Turkic	SAY, other attitude verbs	optional indexical shift
Buryat	Mongolic	SAY, other attitude verbs	optional indexical shift
Tsez	Northeast Caucasian	SAY, other attitude verbs	optional indexical shift
Japanese	Japonic	SAY, other attitude verbs	optional indexical shift
Catalan Sign Language	Sign Language	Attitude role-shift: SAY, other attitude verbs (can be covert)	optional indexical shift
American Sign Language	Sign Language	Attitude role-shift: SAY, other attitude verbs (can be covert)	optional indexical shift
French Sign Language	Sign Language	Attitude role-shift: SAY, other attitude verbs (can be covert)	optional indexical shift

Taking the selection of languages in Table 54¹⁵ to be representative, and given also

¹⁵Information about the languages in Table 54 comes from the following secondary sources: Tamil (Sundaesan, 2012, and personal fieldwork), Telugu (Messick, 2016), Dargwa (Ganenkov, 2016), Donna So (Culy, 1994; Curnow, 2002), Amharic (Schlenker, 1999, 2003, et seq.), Aghem (Hyman, 1979), Late Egyptian (Kammerzell and Peust, 2002), Kurmanji (Koev, 2013), Zazaki (Anand and Nevins, 2004; Anand, 2006), Navajo (Speas, 1999), Matsés (Munro et al., 2012), Slave (Rice, 1989), Ancient Greek (Bary and Maier, 2003), Laz (Demirok and Öztürk, 2015), Nez Perce (Deal, 2014, with further input from Amy Rose Deal), Korean (Park, 2014), Nuer (Messick and Monich, 2016), Balkar (Koval, 2014),

the discussion of Tamil, the following descriptive generalization thus emerges (see also Koev, 2013; Deal, 2017):¹⁶

- (55) For a given grammar (language or dialect), if indexical shift is effected in the scope of a non-speech attitude predicate, it must also be effected in the scope of a speech predicate.

(55) immediately calls to mind another class of linguistic phenomena that privilege speech predicates — so-called “root phenomena” which have also been reported for embedded clauses (Hooper and Thompson, 1973). Such phenomena have been reported for anaphoric (Culy, 1994) and evidential (Speas, 2004) licensing, root transformation possibilities (Hooper and Thompson, 1973; Wiklund et al., 2009) and the relative ordering of adverbs and affixes (Cinque, 1999).

These similarities lead us to the following conclusion:

- (56) Indexical shift is an embedded root phenomenon.

7 An alternative model of indexical shift

The constellation of data presented in the previous sections now lead us to the following desiderata:

- I. Shift Together obtains when it can, but systematic exceptions may still obtain:** This is a problem for operator-based MC accounts which always predicts Shift Together to obtain, but is also a problem for localist PC approaches which predict Shift Together never to obtain.
- II. The utterance context is never overwritten:** This directly undermines a context-overwriting approach to indexical shift, as in MC.
- III. Indexical shift is an embedded root phenomenon:** This is predominantly a problem for PC, where the $\hat{\mu}$, rather than being a separate entity that is selected by an attitude verb, *is* in fact the attitude verb itself. While MC can account for the basic fact of selectional variation, something extra still needs to be said to account for the one-way implicational nature of such variation, under such an approach.

To capture these properties, I will now develop a hybrid model of indexical shift that combines insights from both operator-based MC and quantifier-binding based PC approaches to indexical shift. Just like in PC, and unlike in MC, the new $\hat{\mu}$ in this system is not a context-overwriting operator but a contextual quantifier that binds contextual variables associated with individual indexicals in its scope, yielding indexical shift. Since the utterance-context is never overwritten, exceptions to Shift Together are

Mishar Tatar (Podobryaev, 2014), Uyghur (Shklovsky and Sudo, 2014), Buryat (Wurmbrand, 2016, 2017, with further input from Susi Wurmbrand), Tsez (Polinsky, 2015), Japanese (Sudo, 2012), Catalan Sign Language (Quer, 2005), and Schlenker (To Appear), for French Sign Language.

¹⁶Schlenker, in recent work, argues that sign languages also allow a type of Action Role Shift, “which has no established counterpart in spoken language [and] . . . is used to describe actions that don’t involve any speech- or thought-acts” (Schlenker, To Appear, 1). Such shift is clearly different from the kinds of shift discussed here as it doesn’t obtain in intensional environments. The generalization in (55) thus clearly doesn’t apply to such types of shift, and I will have nothing to say about these cases here.

automatically captured. At the same time, I propose that such binding is regulated by the Relativized Minimality condition in (57) (see also Percus, 2000):

- (57) **Context-Minimality Generalization:** The silent context pronoun that is associated with an indexical must be coindexed with the λ that minimally c-commands it.

(57) has the interesting effect that it simulates many of the effects of MC wrt. indexical shift: e.g. Shift Together and No Intervening Binder — while simultaneously being more flexible in allowing systematic exceptions to these rules. Finally, just like in MC, the current system is fundamentally selectional: the quantificational $\hat{\lambda}$ is not the attitude verb itself, but a distinct grammatical entity selected in the scope of the attitude verb. This will allow us to model selectional variation, including the privileged status of speech predicates with respect to indexical shift, noted in (55) and (56) above.

7.1 A new type of $\hat{\lambda}$

One of the fundamental insights in Schlenker (1999, 2003) was that intensional quantification by attitude verbs could be enriched such that it obtained, not just over worlds, but over contexts. As Schlenker (1999, 2) puts it: “In traditional model-theoretic accounts, attitude verbs are essentially construed as quantifiers over possible worlds. Thus John believes that it is raining’ is true just in case it is raining in every world compatible with John’s belief. I will argue for a minimal modification of this analysis. What shifted indexicals of the Amharic variety show, I’ll suggest, is that attitude verbs are *quantifiers over contexts of thought- or of speech.*” But the kind of $\hat{\lambda}$ we need for our purposes needs to be a distinct grammatical entity from the attitude verb, so that we may capture the baseline fact that indexical shift does not universally occur under all attitude verbs. What we need, in other words, is a way to *sever* such enriched intensional quantification from the intensional predicate.

Interestingly, a separate branch of research on the syntax and semantics of clausal complementation, Kratzer (2006, 2012); Moulton (2007, 2009) and more recently Elliott (2017) independently argues for precisely this state-of-affairs. Such work suggests that the propositional content of an attitude is selected, not by the attitude predicate, but by a dedicated complementizer associated with this predicate. Thus, in (60), *that* selects a proposition (set of worlds) and a contentful individual (like ‘assertion’ or ‘fact’), which predicates over abstract individuals bearing the content of what is said. (59) states that the embedded proposition is true in all worlds that are compatible with the content of what is said in the current world. In other words, (58) is true just in case I was drunk in all worlds that are compatible with this notion, in the current world, and that Susan expressed the notion in the current world.

- (58) Susan expressed the notion that I was drunk.
 (59) $\llbracket that \rrbracket^{c:g} = \lambda p_{\langle s,t \rangle} \lambda x [\forall w'. compatible_w(x)(w') \rightarrow p(w')]$

Kratzer (2006)’s idea is that a content nominal is *always* present in the structure, even when it is not overtly pronounced, as in (60):

- (60) Susan expressed that I was drunk.

As such, a propositional complementizer like ‘that’ always intensionally quantifies over the proposition it selects and then further restricts such quantification via a compatibility relation with the content nominal.¹⁷

Under this way of looking at things, the intensional component is “outsourced” to the complementizer, and the attitude verb itself now has a rather diminished meaning. A verb like ‘say’ selects a content nominal as its internal argument, and an eventuality argument as its external argument and has the lexical entry in (61):

$$(61) \quad \llbracket \text{say} \rrbracket^{c,g} = \lambda x \lambda s. \text{say}(x)(s)$$

(61) asserts that ‘say’ denotes an eventuality of saying some content in the current world, where this content is borne by an abstract individual.

The fundamental insight I bring to this picture is to propose a unification of Schlenker’s insight that intensional quantification may be over contexts with that of Kratzer (2006, 2009); Moulton (2009); Elliott (2017) that intensional quantification is executed, not by the verb, but by the complementizer associated with the verb. Let us assume the primitive semantic domains with the corresponding semantic types given below:

(62) Basic semantic domains:

- a. $D_e = D$ (the set of individuals)
- b. $D_c = C$ (the set of contents)
- c. $D_t = \{0, 1\}$ (the set of truth-values)
- d. $D_w = W$ (the set of possible worlds)
- e. $D_i = T$ (the set of possible times)
- f. $D_v = E$ (the set of eventualities)

(63) e, c, t, w, i, v are semantic types; and if σ and τ are semantic types, then $\langle \sigma, \tau \rangle$ is also a semantic type. For any semantic types σ and τ , $D_{\langle \sigma, \tau \rangle}$ is the set of all functions from D_σ to D_τ .

Given (62), we can now define the domain of a context as in (64) below:

$$(64) \quad D_k = D_{\langle e, e, w, i \rangle} \subset D_e \times D_e \times D_w \times D_i$$

As per (64), the set of possible contexts is a proper subset of the cartesian product of the set of individuals, the set of individuals, the set of worlds, and the set of times. Given this, I now preliminarily define a context as in (65) below:

(65) Possible context – pre-final version:

$\forall c_k \in \langle x_e, y_e, w_s, t_i, l \rangle > c$ is a possible context iff x is the unique *Author* of c , y is the *Addressee* of c , w is the *World* of c , t is the *Time* of c and l is the *Location* of c .

The definition in (65) explicitly rules out “improper” contexts — i.e. intensional tuples with the same coordinates that nevertheless do not satisfy the presuppositional restriction in (65). We will have reason to update this definition presently, so that other types of contexts are also admissible, but this should suffice to start.

¹⁷When there is no overt content nominal, as in (60), Kratzer proposes that the attitude verb composes with the CP via *Restrict* (a type of predicate modification operation that restricts the internal argument via set intersection, see Chung and Ladusaw, 2004) and then existentially binds off the content nominal.

Against this background, we might propose that a non-monstrous complementizer (like ‘that’) has the denotation in (45) below. For now, it is essentially indistinguishable from the lexical entry in (59) — but we will have reason to tweak it presently:

(66) Denotation of a non-monstrous C – Version 1:

$$\llbracket \text{that} \rrbracket = \lambda p_{\langle s,t \rangle} \lambda x [\forall w' \in \text{World}_{xw} \rightarrow p(w')], \text{ where } \text{World}_{xw} =_{\text{def}}:$$

{ c' : it is compatible with x , the content of the attitude in w , for w to be w' }

As with (59), the complementizer in (66) universally quantifies over the proposition and ensures compatibility with the content nominal via *generalized World* alternatives, defined as above. In contrast, a monstrous complementizer quantifies over contexts, defined as in (65) above, might have the preliminary denotation in (67):

(67) Denotation of a monstrous C – Version 1:

$$\llbracket \text{that} \rrbracket^{c,g} = \lambda p_{\langle k,t \rangle} \lambda x. \forall c' \in \text{Context}_x \rightarrow p(c'), \text{ where } \text{Context}_{xw_c} =_{\text{def}}:$$

{ c' : it is compatible with x , the content of the attitude in w_c , for w_c to be $\text{World}(c')$ }

(67), in contrast to (66), executes compatibility with the content nominal via *generalized Context* alternatives. It takes a content nominal and contextual proposition as arguments and states that, for every intensional context that is compatible with the content individual *in the world of the evaluation context*, such that the *World* of the intensional context can be construed as the *World* of the actual context, that proposition is true in that context. So, a sentence like “John said that Bill is hungry” is true just in case Bill is hungry in all contextual worlds that are compatible with John’s assertion in the current contextual world (world of the utterance-context, by default) such that this contextual world is understood as the current contextual world.

7.1.1 Ensuring thematic compatibility

But this is still not quite enough. Compatibility restrictions on the $\llbracket \text{that} \rrbracket$ must also be relativized to the thematic properties of the attitudinal eventuality. This will regulate correct mapping relations between the denotations of the shifty arguments in the proposition and those of the eventuality, ensuring, for instance, that a shifted 1st-person indexical in the scope of a speech verb denotes the SAYER, rather than the ADDRESSEE (or other salient participant), of the speech event.

Let us assume that an intensional eventuality s can be further articulated as a tuple consisting of a *World*, *Time*, and *Location* of evaluation and individuals that stand in different thematic relations with the eventuality. The *Author* is roughly the *Agent* or *Experiencer* of the eventuality; the *Addressee* roughly the *Goal* of the eventuality, if there is one:¹⁸

¹⁸Note that, under this way of thinking, an intensional eventuality, defined in (68b), and a context, defined in (65), are virtually indistinguishable: both are tuples consisting of $\langle \text{Author}, \text{Addressee}, \text{Time}, \text{World}, \text{Location} \rangle$. This is not an accident. It makes intuitive sense to think of an utterance-context as a speech event that embeds the root proposition — this is, in fact, an old idea that goes back to the Performative Hypothesis in Ross (1970). For now, I will maintain, at least notationally, a distinction between “context” and “eventuality” for reasons of perspicuity — but it is important not to lose sight of their deep parallels.

(68) Definition of an attitude:

- a. $D_v = D_{\langle e, e, s, i \rangle} \subset D_e (\times D_e) \times D_s \times D_i$
- b. For all $s_v = \langle x_e, y_e, w_s, t_i, l \rangle$ s is a possible attitude iff x is the unique *Author* of s , y is the *Addressee* of s (if there is one), w is the *World* of s , t is the *Time* of s , and l is the *Location* of s .

We can now delineate strict mapping relations between the coordinates of this intensional eventuality and those of the set of intensional contexts quantified over. It seems reasonable to propose that these, too, are hardwired into the compatibility relations established by the intensional complementizer between the contextual proposition and the content individual. Such a monstrous complementizer would then have the denotation in (69) (Deal, 2017, 31, argues for something quite similar, but derives indexical shift via a version of MC, i.e. via context-overwriting by a monstrous operator):¹⁹

(69) Denotation of a monstrous C – Version 2:

$$\llbracket \hat{\lambda} \rrbracket^{c,i} = \lambda p_{\langle k, t \rangle} \lambda x. \forall c' \in \text{Context}_{x_s} \rightarrow p(c'), \text{ where } \text{Context}_{x_s} =_{\text{def}}:$$

{ c' : it is compatible with x , the content of the attitude that *Author*(s) holds in *World*(s), for:
Author(s) to be *Author*(c') in *World*(c'), and;
Addressee(s), if there is one, to be *Addressee*(c') in *World*(c') (and for *Addressee*(c') to be undefined if *Addressee*(s) is absent) and;
Location(s) to be *Location*(c'), and;
Time(s) to be *Time*(c')}

(69) states, as before, that the embedded holds in all contexts that are compatible with their *generalized contextual alternatives* (*Context*). But this now means that such quantification is restricted to all contexts that are compatible with the content of the attitude that the *Author* of the attitude holds in the *World* of the attitude — such that the *Author*, *Addressee*, *Time*, and *Location* of the context correspond to the respective counterparts of the *Author*, *Addressee* (if there is one), *Time*, and *Location* of the attitude. If the attitudinal eventuality lacks an *Addressee*, as non-communicative eventualities do, then the *Addressee* alternatives are simply undefined, due to a presupposition failure; the other mapping relations go through regardless.

To keep matters consistent, I will now also relativize the compatibility restriction of the non-monstrous complementizer to the embedding eventuality — albeit only to the *World* argument of this eventuality — yielding (70):

(70) Denotation of a non-monstrous C – Version 2:

$$\llbracket \text{that} \rrbracket = \lambda p_{\langle s, t \rangle} \lambda x [\forall w' \in \text{World}_{x_s} \rightarrow p(w')], \text{ where } \text{World}_{x_s} =_{\text{def}}:$$

{ w' : it is compatible with x , the content of the attitude that *Author*(s) holds in *World*(s) for *World*(s) to be w' }

(70) defines a set of *generalized World* alternatives. The proposition thus holds in all worlds that are compatible with the content of the attitude that the *Author* of the attitude holds in the *World* of the attitude, such that this world can be construed as the actual world.

¹⁹I am assuming for now that the intensional eventuality s is a free variable that then gets existentially closed higher up in the structure, above the point where the verb is introduced.

Now consider again the sentence in (58), repeated in (71). If (71) were expressed in Amharic, it would be ambiguous between the readings in (71a) and (71b):

- (71) Susan expressed the notion that I was drunk.
- a. SHIFTED: Susan_i expressed the notion [that I_i was drunk].
 - b. UNSHIFTED: Susan_i expressed the notion [that I_{c*} was drunk].

(71a) involves the $\hat{\text{I}}$ in (69) above the embedded proposition. It thus states that there is an event of expressing a notion, whose *Author* is Susan, that in every context that is compatible with this notion (such that the *Author*, *Addressee*, *Time*, *Location*, and *World* of this context are the respective counterparts of Susan, Susan’s *Addressee*, Susan’s *Time*, *Location*, and *World*), the *Author of this context* was drunk in the *World* of this context. The 1st-person indexical thus denotes the author of one of the contexts quantified over and is then associated with Susan through the compatibility restriction — yielding the desired shifted interpretation. In contrast, we have instead the non-monstrous ‘that’ in (70). (71b) thus states that Susan expressed a notion and that in every *world* that is compatible with this notion (such that this world corresponds to the counterpart of Susan’s actual world), the *Author of the evaluation context* (default: utterance-context) was drunk.

7.1.2 Factoring in contextual asymmetries: a family of $\hat{\text{I}}$ s

We are most of the way there, but still need to finesse our understanding of the monstrous complementizer, before we can arrive at a final denotation for it. A closer look at attitudes reveals a fundamental asymmetry between attitude-holders (equivalent to what I have been calling *Authors*) and individuals to whom that attitude is communicated (equivalent to *Addressees*). Simply put, an attitude ceases to be an attitude without an attitude-holder, but there is no universal requirement that this attitude be communicated. This entails that attitudes cannot have an *Addressee* without also having an *Author*. It seems entirely reasonable to propose that compatibility restrictions on a $\hat{\text{I}}$ would be sensitive to this dependence. One might imagine then that the *Addressee* is not an independent argument at all (either of the eventuality or of one of the intensional contexts quantified over), but is defined purely in relation to *Author*.

Recent work from Deal (2017) confirms that the possibilities for indexical shift do indeed seem to be sensitive to this asymmetry. Deal shows that indexical shift is curtailed by the hierarchy in (72) below (adapted from Deal, 2017, 24):

- (72) Hierarchy of shifty indexicals: 1st > 2nd > HERE

	Shifty 1st	Shifty 2nd	Shifty HERE
Matses	✓	✓	✓
Uyghur	✓	✓	—
Tamil	✓	—	—
English	—	—	—

In addition to underling the aforementioned asymmetry between *Author* and *Addressee*, (72) also adds *Location* into the mix — showing that (the shifting of) *Location* is, in turn, dependent on the shifting of an *Addressee*. Deal further presents evidence from

Zazaki, Nez Perce, Uyghur, and Slave — four languages with optional indexical shift across different classes of indexical — to argue that the implicational hierarchy in (72) is also mirrored at the clause-internal level. For instance, Nez Perce allows locational as well as person indexicals to optionally shift. In an intensional domain containing both locational and person indexicals, either both may shift, none may shift, or person indexicals alone may shift. The fourth logical possibility, where the locational indexical shifts, while the person indexical remains unshifted, seems to be unattested. Within the class of person indexicals, a construction with an shifted 2nd-person indexical and an unshifted 1st-person indexical is similarly unattested in these languages.

To capture this set of facts, I now propose that $\hat{\omega}$ s can come in (at least four) different shapes. A $\hat{\omega}_{World}$ trivially quantifies over *World* alone, $\hat{\omega}_{Auth}$ quantifies over *Author* and *World* coordinates alone — thus, is a “centered world” in the sense of Lewis (1979); Chierchia (1989); a $\hat{\omega}_{Addr}$ over *Addressee* and *Author* and *World*. Finally, a $\hat{\omega}_{Loc}$ quantifies over *Location*, *Addressee*, *Author*, and *World*, and conforms to the $\hat{\omega}$ in (69). Note that we will eventually also have to add a *Time* component to the compatibility restrictions, based on where in the contextual hierarchy this coordinate actually fits. We thus arrive at our final denotations for possible $\hat{\omega}$ s in (73):

- (73) Final denotations of possible $\hat{\omega}$ s:
- a. $\llbracket \hat{\omega}_{World} \rrbracket^{c,i} = \lambda p_{\langle k,t \rangle} \lambda x. \forall c' \in World_{x_s} \rightarrow p(c')$, where $World_{x_s} =_{def} \{c' : \text{it is compatible with } x, \text{ the content of the attitude that } Author(s) \text{ holds in } World(s) \text{ for } World(s) \text{ to be } World(c')\}$
 - b. $\llbracket \hat{\omega}_{Auth} \rrbracket^{c,i} = \lambda p_{\langle k,t \rangle} \lambda x. \forall c' \in Author_{x_s} \rightarrow p(c')$, where $Author_{x_s} =_{def} \{c' : \text{it is compatible with } x, \text{ the content of the attitude that } Author(s) \text{ holds in } World(s), \text{ for } World(s) \text{ to be } World(c') \text{ and } Author(s) \text{ to be } Author(c') \text{ in } World(c')\}$
 - c. $\llbracket \hat{\omega}_{Addr} \rrbracket^{c,i} = \lambda p_{\langle k,t \rangle} \lambda x. \forall c' \in Addressee_{x_s} \rightarrow p(c')$, where $Addressee_{x_s} =_{def} \{c' : \text{it is compatible with } x, \text{ the content of the attitude that } Author(s) \text{ holds in } World(s), \text{ for } World(s) \text{ to be } World(c'), \text{ for } Author(s) \text{ to be } Author(c') \text{ in } World(c'), \text{ and for } Addressee(s), \text{ if there is one, to be } Addressee(c') \text{ in } World(c') \text{ (and for } Addressee(c') \text{ to be undefined if } Addressee(s) \text{ is absent)}\}$
 - d. $\llbracket \hat{\omega}_{Loc} \rrbracket^{c,i} = \lambda p_{\langle k,t \rangle} \lambda x. \forall c' \in Location_{x_s} \rightarrow p(c')$, where $Location_{x_s} =_{def} \{c' : \text{it is compatible with } x, \text{ the content of the attitude that } Author(s) \text{ holds in } World(s) \text{ for } World(s) \text{ to be } World(c'), \text{ for } Author(s) \text{ to be } Author(c') \text{ in } World(c'), \text{ for } Addressee(s), \text{ if there is one, to be } Addressee(c') \text{ in } World(c') \text{ (and for } Addressee(c') \text{ to be undefined if } Addressee(s) \text{ is absent), and for } Location(s) \text{ to be } Location(c')\}$

I assume that the choice of $\hat{\omega}$ varies both with the language and with the type of construction. This in turn has direct consequences for what counts as a possible context. We must update our definition of possible contexts from the definition in (65) to that in (74) below:

- (74) Possible context – Final version:
- $\forall c_k \in \{\langle w_s \rangle, \langle w_s, x_e \rangle, \langle w_s, x_e, y_e \rangle, \langle w_s, x_e, y_e, l \rangle\}$, c is a possible context iff w_s is the unique *World* of c , x_e is the unique *Author* of c , y_e is the *Addressee* of c and l is the unique location of c .

The modification made in (74) allows contexts to be improper, in a way that the original definition in (65) did not. At the same time, it is not the case that any possible subset ordering of an intensional tuple constitutes a possible context. (75a)-(75d) represent all the possible contexts, while (76a)-(76d) represent some impossible contexts:

- (75) All possible contexts:
- a. $c_{world} = \{World\}$
 - b. $c_{author} = \{World, Author\}$
 - c. $c_{addressee} = \{World, Author, Addressee\}$
 - d. $c_{location} = \{World, Author, Addressee, Location\}$
- (76) Some impossible contexts:
- a. $c_1 = \{Addressee\}$
 - b. $c_2 = \{Location, World\}$
 - c. $c_3 = \{Author, Location\}$
 - d. $c_4 = \{World, Addressee\}$

I propose further that the utterance-context is a maximally enriched context, thus is always a proper context — corresponding to $c_{location}$ in (75d).

This new way of looking at things has significant consequences for possibilities of indexical shift. A $\hat{\omega}\omega_{Addr}$, which introduces contexts corresponding to $c_{addressee}$, will thus quantify not only over *Addressee*, but also over *Author* and *World*. This automatically captures the implication, described in Table 72, that indexical shift for 2nd person entails the possibility of shift for 1st. In a structure where only a shiftable 2nd-person indexical is merged in the scope of $\hat{\omega}\omega_{Addr}$, only this will shift. But when a (shiftable) 1st-person indexical is also in the same local domain, both must necessarily shift. We will never get a scenario where 2nd-person alone is shifted to the exclusion of a shiftable 1st-person indexical in the same domain. On the other hand, the reverse scenario *is* possible. A shiftable 1st-person indexical alone will shift in the presence of a shiftable 2nd, when both indexicals are merged in the scope of a $\hat{\omega}\omega_{Auth}$. A parallel asymmetry applies to the *Location* coordinate as well. A shiftable locational indexical like ‘here’ will shift only if it is merged in the scope of a $\hat{\omega}\omega_{Loc}$; but given the denotation of $\hat{\omega}\omega_{Loc}$, this automatically ensures that such shifting entails possibilities for shifting (shiftable) 1st and 2nd indexicals as well.

A further advantage of this updated system is that we don’t actually need to distinguish between monstrous and non-monstrous intensionality anymore. All intensional quantification in this updated model obtains over contexts alone, with the precise nature of such quantification being conditioned by the choice of $\hat{\omega}\omega$. A sentence where neither participant nor temporal indexicals is shifted is thus simply one where intensional quantification applies due to a $\hat{\omega}\omega_{World}$. Such a monster will introduce only *World* alternatives, binding only contexts corresponding to c_{world} , thus will “shift” only the *World* coordinate of the attitude. The only difference between an operator that quantifies over worlds directly, such as the non-monstrous complementizer in (70) and $\hat{\omega}\omega_{World}$, is that, with the latter, quantification obtains over worlds that are relativized to individual contexts. But reconceptualizing standard intensional quantification over worlds as contextual quantification of this sort has a non-trivial advantage. It ensures that predicates in an intensional domain no longer have to “choose” between predicating over contexts or

predicating over worlds depending on whether they occur in the scope of a λ or not. Since all intensional quantification is only over contexts, all predicates are uniformly predicates over contexts. A “non-shifting” attitude report also involves a λ , albeit of the trivial λ_{World} type.

7.2 Replicating contextual asymmetry for indexicals

The hybrid nature of the λ above has direct consequences for how variation for indexical shift is captured. We saw that, under MC, such variation is solely a function of whether a λ is present or absent in the structure; indexical pronouns are *always* assumed to be shiftable. In contrast, PC assumes that a λ is always present; but individual indexicals can either obligatorily, optionally, or never shift. In the current system, variation along both dimensions is possible. Not only may complementizers vary with respect to which contextual coordinates they quantify over — as described above, indexicals may also vary with respect to their shiftability.

This immediately presents a potential issue, however, for the account of the hierarchy of shiftability of different classes of indexicals, both across languages and for a specific construction, described in (72), above. Concretely, in a system where indexicals may themselves be specified to be unshiftable, we could have a language with a shiftable 2nd-person and an unshiftable 1st-person indexical in an intensional domain. The choice of λ embedding the attitude report should not influence this, assuming (as under PC), that unshiftable indexicals are simply not bindable by such elements. A λ_{Addr} in such a language would shift both *Author* and *Addressee* coordinates but this would only shift the interpretation of the 2nd-person indexical, leaving the 1st-person indexical untouched. Similar concerns apply to locational indexicals.

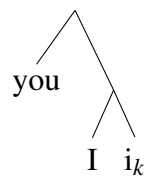
Our theory of indexicals themselves thus needs to be stringent enough to rule out such a possibility. I thus propose that indexicals are structurally complex and that the structure of an indexical varies according to its contextual class, as illustrated below:

(77) Structure of indexicals:

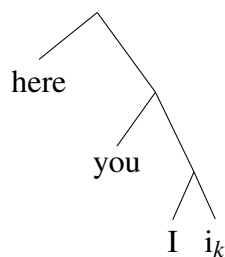
a. 1st-person indexical:



b. 2nd-person indexical:



c. Locational indexical:



(77) replicates the contextual asymmetry between *Location*, *Addressee*, and *Author*, noted above, in terms of a structural asymmetry between them. A 1st-person indexical, like ‘I’, is a structural primitive and directly combines with a contextual variable. A 2nd-person indexical, like ‘you’, derives from the structure of the 1st. A locational indexical like ‘here’ is the most structurally complex, involving a functional sequence that includes the structure of the 2nd-person which, in turn, includes the structure of the 1st.

Against this background, we have UNSHIFTABLE as well as SHIFTABLE indexicals, yielding the typology in (78):

(78) Final typology of indexicals:

a. UNSHIFTABLE INDEXICALS:

These are lexically specified **never** to shift with respect to the utterance-context.

i. $\llbracket I_{unshiftable} \rrbracket^{c,g} = \llbracket I_5 \rrbracket^{c,g} = g(5)$ iff $g(5) = Author(c)$

ii. $\llbracket you_{unshiftable} \rrbracket^{c,g} = \left[\begin{array}{c} \mathbf{5} \\ \swarrow \quad \searrow \\ \mathbf{you} \quad \mathbf{I} \quad \mathbf{i}_k \end{array} \right]^{c,g}$
 $= g(5)$ iff $g(5) = Addressee(c)$

iii. $\llbracket here_{unshiftable} \rrbracket^{c,g} = \left[\begin{array}{c} \mathbf{5} \\ \swarrow \quad \searrow \\ \mathbf{here} \quad \mathbf{you} \quad \mathbf{I} \quad \mathbf{i}_k \end{array} \right]^{c,g}$
 $= g(5)$ iff $g(5) = Location(c)$

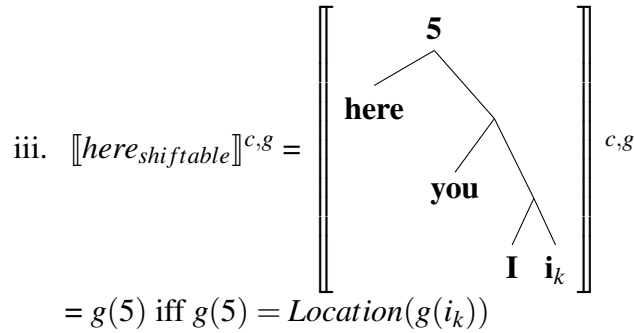
b. SHIFTABLE INDEXICALS:

These are lexically underspecified with respect to their context of evaluation.

i. $\llbracket I_{shiftable} \rrbracket^{c,g} = \left[\begin{array}{c} \mathbf{5} \\ \swarrow \quad \searrow \\ \mathbf{I} \quad \mathbf{i}_k \end{array} \right]^{c,g}$
 $= Author(g(i_k))$, iff there is a unique speaker of $g(i_k)$

ii. $\llbracket you_{shiftable} \rrbracket^{c,g} = \left[\begin{array}{c} \mathbf{5} \\ \swarrow \quad \searrow \\ \mathbf{you} \quad \mathbf{I} \quad \mathbf{i}_k \end{array} \right]^{c,g}$

= $g(5)$ iff $g(5) = \text{Addressee}(g(i_k))$, iff there is a unique addressee of $g(i_k)$



The starting point is the idea, replicating intuitions in PC, that the difference between a SHIFTABLE and UNSHIFTABLE indexical lies in whether its denotation is sensitive to the associated context variable, or not, respectively. The assignment of a SHIFTABLE 1st-person indexical is computed relative to its context variable, thus varies according to whether this variable is bound or not. The assignment of an UNSHIFTABLE 1st-person indexical, in contrast, is computed relative to the utterance-context. The context variable associated with this indexical is thus superfluous. The innovation here is to propose that different classes of indexicals vary with respect to their structural complexity — which cross-cuts the SHIFTABLE vs. UNSHIFTABLE distinction. This in turn captures how directly they can combine with the context variable. A 1st-person indexical (both SHIFTABLE and UNSHIFTABLE) is built on a pronominal head I that combines directly with the context variable. A 2nd-person indexical, in contrast, is built on a pronominal you head that combines with the structure of the 1st-person indexical. This means that its access to the contextual variable is mediated through the 1st-person indexical. The locational indexical is even more restricted in its access — as it has to go through the 2nd-person indexical, which goes through the 1st.

This distinction directly captures the asymmetry in possibilities for indexical shift across different classes. The pronominal head I in the 1st-person structure can choose whether to have its interpretation be due its context-variable sister (yielding a shiftable reading) or not (thus having its reference be evaluated relative to the utterance-context). In the former case, it makes sense to imagine that the context variable feature percolates up to the root node and can affect the interpretation of the entire structure. The choice of the 1st-person head thus directly constrains possibilities for what the pronominal head you can, in turn, choose — in a 2nd-person indexical structure. This head has the same two choices as the first: it can either refer directly to the utterance-context or be interpreted relative to the context determined by its complement. If the 1st-person head has chosen to be SHIFTABLE, then this option is available to 2nd-person head as well, since the feature has percolated up. But this you head may still choose to be interpreted relative to the utterance-context in this case, yielding a language that has a SHIFTABLE 1st-person pronoun and an UNSHIFTABLE 2nd-person pronoun. However, if the 1st-person head has itself chosen to be interpreted relative to the utterance-context (thus be UNSHIFTABLE), the 2nd-person head will also always end up being UNSHIFTABLE. This could again be because this head has itself chosen to be evaluated relative to the utterance-context. However, it would also be the only result if it chooses to be eval-

uated relative to its complement since, in this case, the context variable is simply not available at the complement node. Since, in other words, the only way the 2nd-person indexical can access the context variable is via the 1st-person indexical, in the manner described — we will never have a language with a SHIFTABLE 2nd-person indexical and an UNSHIFTABLE 1st-person indexical. Similar reasoning applies to the locational indexical as well. As such, we will never have a SHIFTABLE locational indexical with an UNSHIFTABLE 2nd-person indexical. Together with the family of $\hat{\omega}$ s postulated in the previous section, this captures the implicational hierarchy noted in (72).

It should be mentioned, however, that nothing in the current system prevents a language from having a SHIFTABLE and UNSHIFTABLE indexical of the *same class*. Thus, it should, in theory, be possible to have a language, or a particular intensional domain, that has a SHIFTABLE 1st-person indexical and an UNSHIFTABLE 1st-person indexical. We will see that such a scenario is exemplified precisely in languages that involve Shift Together Exceptions of the kind discussed through much of this paper. This is thus a welcome result. Note, too, that in such a language, it should then also be possible to have SHIFTABLE 1st and 2nd-person indexicals, as well as an UNSHIFTABLE 1st-person indexical. Mishar Tatar seems to be precisely such a language (Podobryaev, 2014, *pace Deal, 2018*). This in turn suggests that the implicational hierarchy for the shiftability of 1ST < 2ND < HERE illustrated in (72) does hold for languages, but only holds for specific constructions in languages that do not involve indexical “doublets”, i.e. two indexicals of the same class where one is SHIFTABLE and the other is not.

7.3 Deriving indexical shift

The new type of $\hat{\omega}$ developed in this model represents a genuine hybrid. Like in the operator-centric system, this $\hat{\omega}$ is severed from the attitude verb; but like in the localist PC approach, it is a contextual quantifier, not an operator. Now we have a way to model selectional variation for indexical shift within a Schlenkerian system without relinquishing the idea that the utterance-context is not overwritten.

Complementizers come in various semantic shapes, as shown in (79), while indexicals come in the shapes given in (80):

(79) Final typology of complementizers:

- a. $[[\hat{\omega}_{World}]^{c,i}] = \lambda p_{\langle k,t \rangle} \lambda x [\forall c' \in World_{x_s} \rightarrow p(c')]$
- b. $[[\hat{\omega}_{Auth}]^{c,i}] = \lambda p_{\langle k,t \rangle} \lambda x [\forall c' \in Author_{x_s} \rightarrow p(c')]$
- c. $[[\hat{\omega}_{Addr}]^{c,i}] = \lambda p_{\langle k,t \rangle} \lambda x [\forall c' \in Addressee_{x_s} \rightarrow p(c')]$
- d. $[[\hat{\omega}_{Loc}]^{c,i}] = \lambda p_{\langle k,t \rangle} \lambda x [\forall c' \in Location_{x_s} \rightarrow p(c')]$

(80) Final typology of indexicals:

- a. SHIFTABLE indexicals
- b. UNSHIFTABLE indexicals

Cross-classifying the two parameters of variation yields the typology of indexical shift in (81). The term “ $\hat{\omega}_x$ ” generalizes over $\hat{\omega}$ s of contextual class x (i.e. $\hat{\omega}_{Auth}$, $\hat{\omega}_{Addr}$, and $\hat{\omega}_{Loc}$); correspondingly, “indexical $_x$ ” generalizes over indexicals of contextual class x (i.e. 1st and 2nd person, and location). The locality rule mentioned in the third column is the Context Minimality Generalization, which forces a SHIFTABLE indexical to be bound by the closest contextual quantifier:

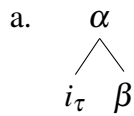
(81) Typology of indexical shift:

$\overset{\text{C}}{\text{C}}_x$	UNSHIFTABLE indexical _{<i>x</i>}	SHIFTABLE indexical _{<i>x</i>} + locality
Never	No Shift	No Shift
Optional	No Shift	Optional Shift
Always	No Shift	Obligatory Shift

(81) shows that there are multiple routes to unshifting. Unshifting could result either because there is no $\overset{\text{C}}{\text{C}}$ merged in the structure, or because the indexicals in the scope of a $\overset{\text{C}}{\text{C}}$ are all lexically specified to be UNSHIFTABLE with the lexical entries given in (78a), or both. In contrast, there is only one route each to optional shifting and obligatory shifting. The former obtains when a SHIFTABLE indexical is merged in a clause that is optionally headed by a $\overset{\text{C}}{\text{C}}$. The latter obtains when a SHIFTABLE indexical is merged in a clause that is always headed by a $\overset{\text{C}}{\text{C}}$; the Relativized Minimality restriction in (57) then ensures that this indexical will always be bound by this $\overset{\text{C}}{\text{C}}$, since it is the closest binder.

The monstrous complementizer, which has the lexical entry given in (69), takes a propositional complement that is a set of contexts (of type $\langle k, t \rangle$), rather than a set of worlds, as discussed. A silent predicate abstractor at the root of the embedded proposition triggers the rule of generalized predicate abstraction given below (Heim and Kratzer, 1998, see also Sudo, 2012, 199, Ex. 594):

(82) Generalized Predicate Abstraction:



b. If α has i_τ and β as its daughters where $i \in \mathbb{N}$ and τ is some semantic type, $\llbracket \alpha \rrbracket^{c,g} = \lambda x_\tau. \llbracket \beta \rrbracket^{c,g[i_\tau \rightarrow x]}$

Indexical shift under the monstrous C in (69) is the result of quantificational binding of context-variables associated with indexicals in the scope of the monster, just as conceived in the Schlenkerian sense. But such binding is nevertheless minimal, as discussed, as it is constrained by (57), repeated below:

(83) **Context-Minimality Generalization:** The silent context pronoun that is associated with an indexical must be coindexed with the λ that minimally c-commands it.

(57) ensures that a SHIFTABLE indexical will be bound by the *closest* c-commanding $\overset{\text{C}}{\text{C}}$. Thus, when two or more SHIFTABLE indexicals are merged in the same intensional domain, they will all necessarily shift, yielding Shift Together under those circumstances, a welcome result.

Let us now look more closely at how indexical shift is derived — focussing again on a language like Zazaki, which optionally shifts all indexicals under verbs of saying. Consider again the sentence in (84); assuming that (84) is in Pseudo-Zazaki, it would be ambiguous between the readings in (84a) and (84b):

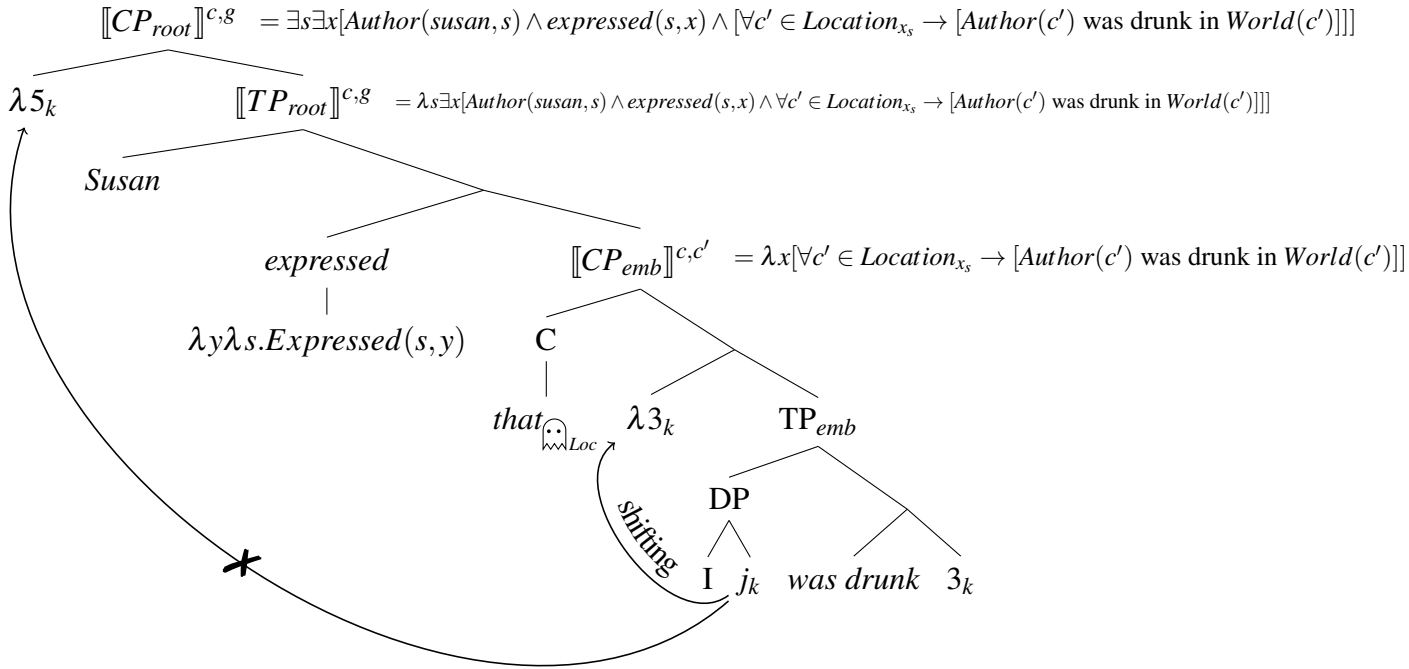
(84) Susan expressed [that I was drunk].

a. SHIFTED READING: Susan_{*i*} expressed that I_{*i*} was drunk.

b. UNSHIFTED READING: Susan_i expressed that I_{c*} was drunk.

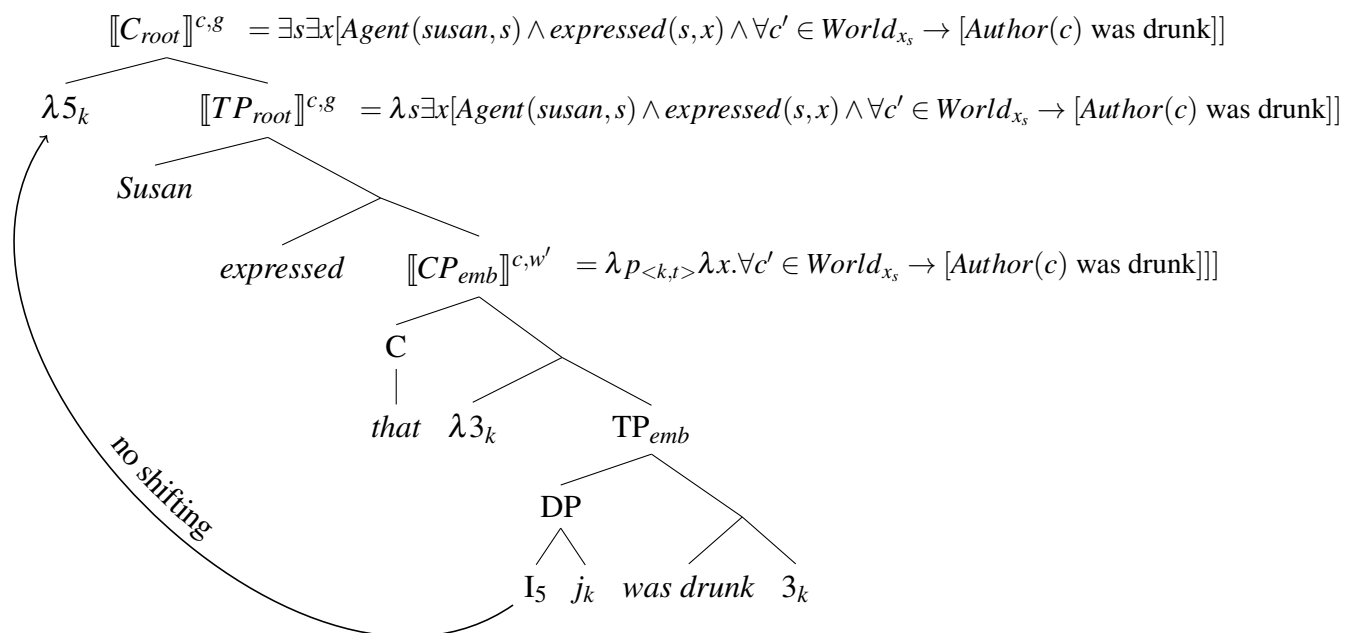
Under the current system, the choice between these readings would simply be a function of what sort of $\hat{\omega}$ the complementizer denotes. The shifted reading in (84a) would involve a $\hat{\omega}_{Loc}$ complementizer, which shifts all contextual coordinates:

(85) Susan_i expressed [_{CP} that $\hat{\omega}_{Loc}$ I_i was drunk]



The monstrous complementizer in (85) creates an abstractor over contexts containing coordinates for *World*, *Author*, *Addressee*, and *Location*. The 1st-person indexical in the scope of $\hat{\omega}_{Loc}$ is SHIFTABLE, thus its interpretation depends on which quantifier its contextual variable is bound by. All else being equal, this variable could be bound by the contextual quantifier associated with the root proposition (yielding an unshifted reading) or by the embedded $\hat{\omega}_{Loc}$ (yielding a shifted reading). However, the Context Minimality Generalization explicitly rules out the former scenario due to Relativized Minimality: only binding by the embedded $\hat{\omega}_{Loc}$ is allowed, since this is closer. The root proposition states that there is an event of saying where the content of what is said is described by a predicate of abstract individuals, that the *Author* of this saying event is Susan, and that for each context that is compatible with what Susan says (such that the *Author*, *Addressee*, *Time*, *World* of this context correspond to the respective counterparts of Susan, Susan’s *Addressee*, Susan’s *Time*, and Susan’s *World*), the *author of this context* is drunk in the world corresponding to that context. This is precisely the reading we want.

The unshifted reading in (84b) differs minimally from that in (84a) in that the C head that introduces the proposition is a trivial $\hat{\omega}_{World}$, which shifts only *World* arguments in its scope. The derivation proceeds as in (86) below:



As (87) shows, the reference of the 1st-person indexical does not rely on the contextual variable associated with it in any way, but varies according to its assignment alone. Given that person and locative indexicals don't generally seem to shift in English, I have assumed that the complementizer 'that' in (87) is a simple $\hat{\omega}_{World}$ over worlds. But it is important to keep in mind that it would make no difference even if it were a $\hat{\omega}_{Loc}$, $\hat{\omega}_{Addr}$, or $\hat{\omega}_{Auth}$, since the 1st-person indexical itself is automatically set to be evaluated against the utterance-context. Such UNSHIFTABLE indexicals thus constitute islands in their own right: they are completely impervious to the contextual make-up of their surroundings.

7.4 Deriving exceptions to Shift Together

As noted, the current model allows different routes to unshift. While this might initially seem like a redundancy, we can empirically distinguish between these different routes. In a language where unshift is derived via the absence of a $\hat{\omega}$ in the structure, it is irrelevant whether the indexicals in that language are themselves SHIFTABLE or not: indexical shift will simply never obtain. Conversely, in a language where unshift is derived through the island-hood of a particular indexical itself — the presence or absence of a $\hat{\omega}$ in the structure should make no difference whatsoever. Nevertheless, if there is another indexical in this language which *is* SHIFTABLE, then we should expect that, in the scope of an appropriate $\hat{\omega}$, this indexical alone will shift; the UNSHIFTABLE indexical will necessarily remain unshifted. This is precisely the kind of environment where we expect an exception to Shift Together.

Let us see how this works. Consider again the monstrous agreement example from Tamil, repeated from (17):

- (88) Raman_i [CP taan_{i,*j} kaṇṇaadi-læ enn-æ paar-tt-een-nñ]

Raman.NOM ANAPH.NOM mirror-LOC me-ACC see-PST-1SG-COMP

ottuṇṇi-aan.

admit.PST-3MSG

LIT: “Raman admitted [CP that self saw me in the mirror].”

READING 1: ✓ “Raman_i admitted that he_{i,*j} had seen me_{c*} in the mirror”

READING 2: ✗ “Raman_i admitted that he_{i,*j} had seen me_i in the mirror.” i.e.

“Raman_i finally admitted that he_{i,*j} had seen himself_i in the mirror.”

Under the current system, the sentence in (88) has the structure in (89). Tamil seems to involve shifting only of 1st-person indexicals, so I assume here that such shifting is implemented by a $\overset{\circ}{\circ}$ _{Auth}:

- (89) Raman_i admitted_{3msg} [*SpeechActP* that_{\overset{\circ}{\circ}}_{Auth} $\overset{\text{Shifted}}{\text{pro}}_{1st,i} \dots [TP \text{ taan}_i \dots T_{1st} \text{ me}_{c^*} \text{ in the mirror}]]$

 ϕ -Agree

The *pro*.1SG indexical that triggers monstrous agreement is a SHIFTABLE indexical with the lexical entry in (8), repeated below:

- (90) $\llbracket I_{shiftable} \rrbracket^{c,g} = \left[\left[\begin{array}{c} \wedge \\ \mathbf{I}_5 \quad \mathbf{i}_k \end{array} \right] \right]^{c,g} = \text{Author}(g(i_k))$, iff there is a unique speaker of $g(i_k)$

Given the Context Minimality Generalization in (57), which imposes a Relativized Minimality condition on quantifier binding, this shifted *pro* is obligatorily bound by ‘that’ in the embedded CP_{\overset{\circ}{\circ}}_{Auth}, thus is obligatorily shifted in (88). However, the direct object ‘me’ is an UNSHIFTABLE indexical with the lexical entry in (7), repeated below:

- (91) $\llbracket I_{unshiftable} \rrbracket^{c,g} = \left[\left[\begin{array}{c} \wedge \\ \mathbf{I}_5 \quad \mathbf{i}_k \end{array} \right] \right]^{c,g} = g(5)$ iff $g(5) = \text{Author}(c)$

Thus, despite the presence of the embedded C_{\overset{\circ}{\circ}}, this indexical is evaluated against the utterance-context and remains unshifted. The result is a genuine exception to Shift Together.

7.4.1 Deriving Shift Together

An important advantage of this system is that, while it is versatile enough to allow exceptions to Shift Together, it also has restrictions in place to yield Shift Together as the only possible option in certain circumstances. Briefly, Shift Together is forced when two or more SHIFTABLE indexicals are merged in the same intensional domain in the scope of an appropriate $\overset{\circ}{\circ}$. This is a direct outcome of the Relativized Minimality restriction imposed by (57)/(83).

To see how this works, consider again the instance of Shift Together, in Zazaki (12):

- (92) Vizeri Rojda Bill-ra va ke ez to-ra miradiša

Yesterday Rojda Bill-to said that I you-to angry.be-PRES

LIT. “Yesterday Rojda said to Bill that I am angry at you.”

READING 1: ✓ “Yesterday Rojda_i said to Bill_j that he_i is angry at him_j.”

READING 2: ✓ “Yesterday Rojda_i said to Bill_j that I_{Auth(c*)} am angry at you_{Addr(c*)}.”

READING 3: ✗ “Yesterday Rojda_i said to Bill_j that I_{Auth(c*)} am angry at him_j.”

READING 4: ✗ “Yesterday Rojda_i said to Bill_j that he_i is angry at you_{Addr(c*)}.”

Under the current model, Reading 1 in (92) would correspond to the structure in (93):

(93) “Yesterday Rojda_i said to Bill_j [_{CP} that_{Loc} I_i am angry at you_j].”

Zazaki is a language that optionally shifts all indexicals. In the current system, this means that such shifting is implemented by $\overset{\circ}{\omega}_{Loc}$. In (93), both the 1st and 2nd person indexicals are shifted. This thus diagnoses the presence of a $C_{\overset{\circ}{\omega}_{Loc}}$ in the local domain. The 1st and 2nd person indexicals must themselves both be SHIFTABLE indexicals with the lexical entries in (78b-i) and (78b-ii), respectively, repeated below:

$$(94) \quad \llbracket I_{shiftable} \rrbracket^{c,g} = \left\| \begin{array}{c} \mathbf{5} \\ \wedge \\ \mathbf{I} \quad \mathbf{i}_k \end{array} \right\|^{c,g}$$

= *Author*($g(i_k)$), iff there is a unique speaker of $g(i_k)$

$$(95) \quad \llbracket you_{shiftable} \rrbracket^{c,g} = \left\| \begin{array}{c} \mathbf{5} \\ \wedge \\ \mathbf{you} \\ \wedge \\ \mathbf{I} \quad \mathbf{i}_k \end{array} \right\|^{c,g}$$

= $g(5)$ iff $g(5) = \textit{Addressee}(g(i_k))$, iff there is a unique addressee of $g(i_k)$

The Context Minimality Generalization forces both indexicals to be bound by closest quantifier: this is the $\overset{\circ}{\omega}_{Loc}$ in the embedded CP, rather than the $\overset{\circ}{\omega}_{Loc}$ associated with the root proposition. Shift Together is the only possible result.

Reading 2 corresponds to the structure in (96):

(96) “Yesterday Rojda_i said to Bill_j [_{SpeechActP} that_{World} I_{c*} am angry at you_{c*}].”

The only difference is that the speech predicate selects a $\overset{\circ}{\omega}_{World}$ over trivial contexts, thus quantifying over worlds alone. The Context Minimality Generalization still forces the 1st- and 2nd-person indexicals to be bound by this $\overset{\circ}{\omega}_{World}$. But given that quantification is only over worlds, and not over *Author* or *Addressee*, these coordinates are simply not shifted. The result is the unshifted reading in (96) which also obeys Shift Together.

We can now work out how the unfeasible reading in Reading 3 is ruled out. In the LF structure corresponding to Reading 3, the 2nd-person indexical alone is shifted while the 1st-person indexical is not. But both indexicals are crucially still SHIFTABLE. Such a reading will simply never be derived since both the $\overset{\circ}{\omega}_{Addr}$ and $\overset{\circ}{\omega}_{Loc}$, which might be responsible for shifting the *Addressee* coordinate necessarily also shift *Author*.

The case of Reading 4 — where the 2nd-person indexical remains unshifted while the 1st-person indexical alone is shifted — is more interesting. Such a reading *is*, in

fact, potentially possible in the current system, assuming that both indexicals lie in the scope of a $\hat{\omega}_{Auth}$. The fact that such a reading is, in fact, ruled out suggests that $\hat{\omega}_{Auth}$ is independently ruled out in Zazaki. We may reason that this happens whenever a language allows both 1st and 2nd-person indexicals to shift. Since it is possible to shift both with a single $\hat{\omega}$ (namely a $\hat{\omega}_{Addr}$ or a $\hat{\omega}_{Loc}$, if *Location* is also shifted) there is no need for the language to have an additional $\hat{\omega}$, like $\hat{\omega}_{Auth}$, which merely replicates a subset of the properties of the other one.

A different option might be to pursue the “lexical bundling” option suggested for such cases in Deal (2017). Per Deal, Deal, Nez Perce also follows a similar pattern, albeit under thought predicates. Non-communicative verbs such as ‘think’ are independently not expected to shift 2nd-person, since they don’t involve an *Addressee*. Deal thus reports that Slave optionally shifts 1st-person under such verbs, but not 2nd. Nez Perce goes a step further. 1st-person in Nez Perce may be shifted under ‘think’ in the absence of a clausemate 2nd-person indexical; but a 2nd-person indexical in the scope of ‘think’ not only itself doesn’t shift, it also blocks shifting of a 1st-person indexical in the same intensional domain. This precisely parallels the Zazaki pattern under ‘say’ for Reading 4: the 2nd-person indexical is not shifted, but this blocks the shifting of the clausemate 1st-person indexical as well. Deal proposes that the Nez Perce pattern may be captured by proposing that the $\hat{\omega}$ s for shifting *Author* and *Addressee* are lexically bundled into a single $\hat{\omega}$ which is responsible for shifting person. We could consider a similar strategy for Zazaki. The $\hat{\omega}_{Loc}$ in Zazaki would then be defined as in (97) below:

- (97) Denotation of a Zazaki $\hat{\omega}$:
- $$\llbracket \hat{\omega}_{Loc-NP} \rrbracket^{c,i} = \lambda p_{\langle k,t \rangle} \lambda x. \forall c' \in Location_{x_s} \rightarrow p(c')], \text{ where } Location_{x_s} =_{def} \{c' : \text{it is compatible with } x, \text{ the content of the attitude that } Author_{Participant(s)} \text{ holds in } World(s) \text{ for } World(s) \text{ to be } World(c'), \text{ for } Participant(s), \text{ where } Participant = \langle Author, Addressee \rangle, \text{ to be } Participant(c') \text{ in } World(c'), \text{ and for } Addressee_{Participant(c')} \text{ to be undefined if } Addressee_{Participant(s)} \text{ is absent), and for } Location(s) \text{ to be } Location(c')\}$$

In other words, the compatibility relations for a $\hat{\omega}_{Loc}$ in Zazaki, like that in Nez Perce, don’t execute separate mapping relations for *Author* and *Addressee*; rather, a single compatibility relation is established for *Participant*, which serves to handle both simultaneously. When there is no 2nd-person indexical in the scope of the $\hat{\omega}$, the lack of a mapping relation for *Addressee* causes no issue. But when a 2nd-person indexical is present, the value for the *Addressee* of the eventuality *must* be retrieved, which in turn causes problems for shifting not just 2nd-person, but also 1st. As such, neither is shifted in such a scenario.

Assuming that the equivalent of Reading 4 is ruled out in a wide variety of languages, this then suggests either that the choice of $\hat{\omega}$ is made at the level of a language (than at the level of a specific proposition) or that lexical bundling might be a more widespread phenomenon than previously reported.

8 The final piece: modelling selectional variation

Although the compatibility restrictions curtail the types of predicates that induce indexical shift in their scope to those that involve coordinates for *Author*, *Addressee*, *Time* and *World*, as described above — they do not go far enough. In particular, they do not yield the implicational restrictions for indexical shift within the class of intensional predicates captured under (55), and repeated below:

- (98) For a given grammar (language or dialect), if indexical shift is effected in the scope of a non-speech attitude predicate, it must also be effected in the scope of a speech predicate.

An elegant way to combine the insight that the \hat{C} is merged in the periphery of a contextual proposition, specifically on a C head — with that in (98) above, would be to propose the following:

- (99) A speech predicate introduces some C head in its clausal complement that the clausal complements of other attitude predicates lack.

8.1 Descriptive entailment = structural entailment

Here too, there is *independent* reason to believe that something along the lines of (99) might be on the right track. There is a rich tradition of literature (within the so-called cartographic enterprise, pioneered by Rizzi, 1997; Cinque, 1999, among others) that proposes essentially the same thing. For instance, Cinque (1999) argues that there is a designated position in a clause for the relevant adverbs and functional heads which corresponds to the syntactico-semantic types of the predicates that they modify, as in (100) (see also Speas, 2004; Cristofaro, 2005):

- (100) SPEECH ACT » EVALUATIVE » EVIDENTIAL » EPISTEMOLOGICAL » ...

Under a strong version of this idea, this yields a relationship of structural entailment for selection, as illustrated below:

- (101) [CP_{root} ... say [$SpeechActP$ [$EvalP$ [$EvidP$ [$EpistP$... [TP ...]]]]]]]
 (102) [CP_{root} ... think [$EvalP$ [$EvidP$ [$EpistP$... [TP ...]]]]]]
 (103) [CP_{root} ... overhear [$EvidP$ [$EpistP$... [TP ...]]]]]]
 (104) [CP_{root} ... see [$EpistP$... [TP ...]]]]

We could easily extend this insight to capture the implicational hierarchy in (55). Here, I propose (in line with earlier work in Sundaresan, 2012, and more recent work in Deal, 2017) that the $C_{\hat{C}}$ that introduces indexical shift is introduced at different structural heights along the hierarchy in (100) periphery. This allows us to reformat the implicational hierarchy of (98) as the structural hierarchy in (105) below:

- (105) **Modelling selectional variation for indexical shift:**²⁰

²⁰The intellectual debt to Speas (2004) should be acknowledged here, who models selectional variation for logophoricity and evidentiality across propositional predicate-classes in essentially a parallel fashion, as a function of the varying structural position of the point-of-view (POV) feature across the different heads in the left periphery.

- (i) In languages where indexical shift is effected only in the scope of a speech predicate (e.g. Tamil, Telugu, Dargwa, Donna So, Amharic, Aghem, Zazaki, Navajo, and Matsés):

[*SpeechActP* *SpeechAct*_☹ [*EvalP* [*EvidP* [*EpistP* ... [*TP* ...]]]]]

- (ii) In languages or dialects where indexical shift may be effected in the scope of a thought predicate (Laz, Slave, locative indexicals in Nez Perce): [*SpeechActP* [*EvalP* *Eval*_☹ [*EvidP* [*EpistP* ... [*TP* ...]]]]]

- (iii) Languages/dialects where indexical shift may be effected in the scope of an evidential predicate: [*SpeechActP* [*EvalP* [*EvidP* *Evid*_☹ [*EpistP* ... [*TP* ...]]]]]

- (iv) Finally, in all the languages where indexical shift obtains under all attitude verbs (e.g. Nuer, Balkar, Mishar Tatar, Uyghur, Buryat, Tsez, Japanese, CSL, ASL, FLS and locative & temporal indexicals in Korean):

[*SpeechActP* [*EvalP* [*EvidP* [*EvalP* [*EvidP* [*EpistP* *Epist*_☹ ... [*TP* ...]]]]]]]

The difference between a *SpeechAct*_☹ and an *Eval*_☹ will lie in the properties of the proposition each quantifies over, which in turn is a direct function of where in the clausal spine each complementizer is merged. As a result, compatible contexts for *Eval*_☹ will involve contexts of thought, *SpeechAct*_☹ will quantify over contexts of speech, and analogously, for *Evid*_☹ and *Epist*_☹. A ☹ that is merged in the *SpeechAct* head will only be available in the scope of speech verbs since it is independently assumed under (100) that a proposition headed by *SpeechAct* can only occur in the scope of such verbs. A ☹ that is merged on an *Eval*(uative) head will occur in the scope of an evaluative predicate like ‘think’ or ‘believe’ but such a complementizer is also part of the functional sequence of a clause that occurs under a speech verb, thus automatically derives why indexical shift in such a language is also possible under ‘say’. Assuming strict monotonicity, this reasoning can be extended to all the other heads in (100). A ☹ that is merged on an *Epist*(emic) head will thus represent a language where indexical shift is possible, not just under epistemic predicates, but also under evidential, evaluative, and speech predicates, just as desired. Recent findings in Deal (2017) for a three-way implicational hierarchy of Speech ≫ Thought ≫ Knowledge for indexical shift, suggests that this too is on the right track.

8.2 Allocutive agreement and indexical shift

Independent support for the system sketched in (105), and in particular for the projection of a *SpeechActP* in languages where indexical shift occurs only under speech verbs, comes from allocutive agreement in Tamil. In recent work, McFadden (To Appear) argues that the clause-final suffix *-ŋgæ* in Tamil marks allocutive agreement. Following Miyagawa (2017, and others) he proposes that such agreement targets the syntactic representation of the *Addressee* in the *SpeechAct* phrase. Interestingly, allocutive agreement is also found in embedded clauses, where we find an intriguing interaction with indexical shift (McFadden, To Appear, 15, Exx. 17; 17, Exx. 19, lightly adapted):

- (106) *Maya_i* [avæ_i poot[ti-læ ɕejkka-ppoo-r-aa[-ŋgæ-nnũ]
 Maya_{NOM} she._{NOM} contest-LOC win-go-PRS-3FSG-ALLOC-COMP
 Seetha-ki[tæ so-nn-aa.
 Seetha-LOC say-PST-3FSG.SUBJ
 ‘*Maya_i* told *Seetha_j* that she_i would win the contest.’ (plural/polite form to *Addressee_{c*}*)
- (107) *Maya_i* [taan_{i,*j} poot[ti-læ ɕejkka-ppoo-r-ee-n-ŋgæ-nnũ]
 Maya_{NOM} ANAPH._{NOM} contest-LOC win-go-PRS-1SG-ALLOC-COMP
 Seetha-ki[tæ so-nn-aa.
 Seetha-LOC say-PST-3FSG.SUBJ
 Lit: ‘*Maya_i* told *Seetha_j* that self_{i,*j} would win the contest.’ (plural/polite form to *Addressee_j*)

In (106), which has no embedded monstrous agreement, the embedded allocutive agreement must reflect properties of the *Addressee* of the utterance-context. But in (107), which has embedded monstrous agreement, the embedded allocutive agreement must reflect properties of the reported *Addressee* (= Seetha). We can explain this contrast in one of two ways, both of which are entirely consistent with the assumptions of the current system. We could propose that (107), but not (106), projects a SpeechActP in the embedded clause. Alternatively, we might propose that while both project an embedded SpeechActP, only that in (107) may host the coordinates of the embedded Speaker and *Addressee*; the SpeechActP in (106) simply hosts the coordinates of the matrix Speaker and *Addressee*. Crucially for us, indexical shift in Tamil obtains only under speech verbs — thus, as per (105), the $\hat{\text{C}}$ should be merged on a SpeechAct head, not lower. This gives us a ready explanation for the contrast in the nature of the SpeechActP between (106) and (107).

8.3 Testable structural predictions

The model also makes some testable structural predictions. For instance, any indexicals that are merged higher than $\hat{\text{C}}$ on the hierarchy should remain unshifted, since they will not be in the scope of the $\hat{\text{C}}$. The maximum left-peripheral space above $\hat{\text{C}}$ is available in the clausal complement of a speech predicate in a language where the $\hat{\text{C}}$ is merged on the lowest C head (Epist). Such a combination obtains in languages like Uyghur, Turkish or Buryat where indexical shift is allowed under all classes of attitude predicate. This is, therefore, where we expect to find the greatest possibility for the absence of shift, despite the presence of a $\hat{\text{C}}$ — thus, this is where we should most likely get what *looks like* a Shift Together exception.

While not conclusive by any means, it is definitely suggestive that the Uyghur examples discussed in Shklovsky and Sudo (2014); Gültekin Şener and Şener (2011) all involve precisely this kind of environment. Conversely, in languages like Zazaki or Amharic, indexical shift obtains only under a speech predicate, the $\hat{\text{C}}$ is introduced in SpeechAct and the peripheral space above it is rather limited — so we expect fewer (or perhaps no) instances of “unshift” in the clausal

9 Empirical predictions

The system of indexical shift that I have motivated here rests on some crucial assumptions. To capture the result that Shift Together obtains when it can, but can still be licitly violated when it cannot, I have proposed that variation for shift may lie both in whether a $\hat{\mu}$ is present in the structure or not, and in whether individual indexicals are specified to be SHIFTABLE or UNSHIFTABLE. In addition, I have proposed a Relativized Minimality restriction on shifting, the Context Minimality Generalization, which forces a SHIFTABLE indexical to shift, if it lies in the scope of an appropriate $\hat{\mu}$. If this is correct, the model should be able to correctly predict when Shift Together obtains as well as when it doesn't, in a language that manifests both effects. In Section 9.1 below, I show that this is borne out for Mishar Tatar.

The Context Minimality Generalization itself should make its presence felt, not only in singly embedded clauses where an embedded $\hat{\mu}$ counts as an intervener for binding by the root $\hat{\mu}$ associated with the utterance-context — but also in multiply embedded clauses where there is more than one embedded $\hat{\mu}$. In this case, the generalization should force a SHIFTABLE indexical to be bound by the closest appropriate $\hat{\mu}$. I show in Section 9.2 that this prediction, too, is met: in fact, it captures a previously noted restriction on shifting termed No Intervening Binder.

Another central assumption of this proposal is the notion that $\hat{\mu}$ s are encoded, not on the verb, but on different species of complementizer located at distinct structural heights along the clausal spine. If this is true, we predict that structures that lack a complementizer head should never allow shifting. We further predict that indexical shift should potentially be morphologically realized on the C head. In Section 9.3, I show that both predictions are borne out, based on evidence from Uyghur, Mishar Tatar, Buryat, Balkar, and Slave.

Finally, I have argued here, in contrast to other proposals that also propose that the $\hat{\mu}$ is realized on C (e.g. Shklovsky and Sudo, 2014; Deal, 2017), that the C head is monstrous because it is an intensional quantifier over (different types of) contexts. Furthermore, this C head is not selected by the attitude verb, but by an individual that bears the content of the attitude. This means that, strictly speaking, indexical shift should be possible even in the absence of an attitude verb — as long as a monstrous C head is present in the structure, which in turn has access to a content nominal associated with an attitude. In Section 9.4, I present evidence from Telugu, Assamese and Tigrinya — all of which allow indexical shift only under conditions of intensionality but not always under the concomitant presence of an attitude verb — in support of this claim.

9.1 Shift Together + exceptions in a single language: Mishar Tatar

Mishar Tatar is a Turkic language that displays both Shift Together and superficial exceptions to it (Podobryaev, 2014, but see Deal, 2018 for a recent treatment of these facts in terms of “indexiphors” and agreement reprogramming) — something that the current model predicts should be possible. (108) involves a superficial exception to Shift Together with a shifted *covert* 1st-person indexical and an unshifted *overt* one:

- (108) Alsu [[[*pro* sestra-m] mine kür-de] diep-ı] at'-tɯ.
Alsu sister-1SG I.ACC see-PST COMP say-PST

LITERAL: “ $Alsu_i$ said that my_i sister saw me_{c^*} .”
 READING: “ $Alsu_i$ said that her_i sister saw me_{c^*} .”

Interestingly, when *two covert 1st-person indexicals* are in a local domain, they must display Shift Together (Podobryaev, 2014, 105, Ex. 261):

- (109) Marat [[*pro* sestra-m] [*pro* brat-γm-nγ] sü-ä diep]
 Marat sister-1SG brother-1SG-ACC love-ST-IPFV COMP
 kurk-a.
 be.afraid-ST.IPFV
 READING : ✓ “Marat is afraid that my_i sister loves my_i brother.”
 READING : ✗ “Marat is afraid that my_{c^*} sister loves my_i brother.”
 READING : ✗ “Marat is afraid that my_i sister loves my_{c^*} brother.”

Under the current system, this behavior is precisely what we expect. The Shift Together exception in (108) is derived just as for (88): the 1st-person *pro* and overt 1st-person are a SHIFTABLE and UNSHIFTABLE indexical, respectively, under an obligatorily monstrous $SpeechAct_{\text{c}}$. But when two covert 1st-person *pros* are in the same local domain under a c , as in (109), they must both shift because they are SHIFTABLE and the locality condition forces them to be bound by the closest c .

Furthermore, when only one of the two covert indexicals is in the scope of the C_{c} , the exception to Shift Together crops up again, as in (110) (Podobryaev, 2014, 105, Ex. 262). Again, this is precisely what is predicted under the given system, since only the SHIFTABLE indexical in the scope of the C_{c} will be shifted.

- (110) Marat sestra m-nγ sü-ä-m diep at'-tγ
 Marat sister-1SG-ACC love-ST.IPFV-1SG COMP say-PST
 POSSIBLE LITERAL PARSE: “ $Marat_i$ said [$SpeechActP$ that c I_i love my_{c^*} sister.”
 READING: “ $Marat_i$ said [$SpeechActP$ that c he_i loves my_{c^*} sister.”

9.2 Predicting “No Intervening Binder”

Given the Context Minimality condition (57) on quantifier binding in the current model, all shiftable indexicals in the scope of a c must necessarily be shifted relative to that c . This essentially replicates the effect of Shift Together within a minimal intensional domain. In addition to this, we also expect this condition in (57) to yield the Relativized Minimality restriction in (111):

- (111) In a sentence where there is more than one c , a shiftable indexical must be bound by the closest c-commanding one.

Is such a restriction attested in the literature on indexical shift? Indeed it is, and widely so. The restriction even has a name: it is called No Intervening Binder (Anand and Nevins, 2004; Anand, 2006), defined as follows Deal (2017, 19, Ex. 33):

- (112) A shiftable indexical ind_1 of class ψ cannot pick up reference from a context c if there is an intervening context c' which another indexical ind_2 of class ψ picks up reference from.

The following examples show this constraint at play in Zazaki:

- (113) Illustration of No Intervening Binder in Zazaki (Anand and Nevins, 2004, Exx. 31-32, 10):
- a. Scenario: Ali tells Andrew: “Hesen said that you are Rojda’s brother!”
Andrew reports what Ali says to his neighbor.
 - b. Ali mi-ra va [_{CP₁} kε Hesen to-ra va [_{CP₂} εz braye Rojda-o]].
Ali me-to said that Hesen you-to said I brother Rojda-GEN
LIT: “Ali said to me that Hesen said to you that Rojda is my brother.”
READING 1: ✓ “Ali said to Andrew that Hesen said to Andrew that Hesen is Rojda’s brother.”
READING 2: ✓ “Ali said to Andrew that Hesen said to Andrew that Hesen is Ali’s brother.”
READING 3: ✗ “Ali said to Andrew that Hesen said to Andrew that Hesen is Andrew’s brother.”

When the 2nd-person indexical in CP₁ is shifted, as required by the discourse scenario, the 1st-person indexical lower in CP₂ must be shifted, too. Similar facts are reported in Korean (Park, 2014) Nez Perce (Deal, 2017) and varieties of Zazaki, Kurdish, and Turkish (Akkuş, 2018).

Under the current analysis, (112) simply reduces to the Context Minimality Generalization in (57).

9.3 The μ is syntactically encoded in C

If the μ is *always and only* encoded on a C head, as I have proposed here, we expect:

- (i) That indexical shift should never be possible outside of CPs, and
- (ii) That morphological reflexes of indexical shift should show up on C.

Both these predictions are met.

It has been noted that nominalizations, which typically lack C, do not allow indexical shift. The complement of a speech predicate in Uyghur (Turkic) may be finite (115) or nominalized (114), but indexical shift is only possible in the former (reformatted from Shklovsky and Sudo, 2014, 383, Exx. 4a-b):

- (114) **Uyghur nominalized complement:**
Ahmet [mening kit-ken-lik-im-ni] di-di.
Ahmet [1SG.GEN leave-REL-NMLZ-1SG-ACC say-PST.3
Lit: “Ahmet spoke [_{GerP} of my leaving].”
NON-SHIFTED READING ✓: “Ahmet_i said that I_{Auth(c*)} left.”
SHIFTED READING ✗: “Ahmet_i said that I_i left.”
- (115) **Uyghur finite complement:**
Ahmet [men ket-tim] di-di.
Ahmet [1SG leave-PST.1SG say-PST.3]
“Ahmet said [_{CP} that I left].”
NON-SHIFTED READING ✗: “Ahmet_i said that I_{Auth(c*)} left.”
SHIFTED READING ✓: “Ahmet_i said that I_i left.”

Interestingly, this pattern repeats itself in Turkish (Gültekin Şener and Şener, 2011, 273-274), Mishar Tatar (Podobryaev, 2014, 88-89) and Buryat (Wurmbrand, 2016, 2017). While it is tempting to conclude from this that “Indexical shift is restricted to finite complement clauses.” (Deal, 2017, 22, Ex. 38) – the Balkar (Turkic) data in (116)-(117) from Koval (2014) show us that this would be premature.

(116) Boris men mešina(-ni) al-al-li q-im-mi suna-di.
 Boris 1SG.NOM car-ACC buy-MOD-PFCT-1SG-ACC think-PST

LITERAL: “Boris thought that I could buy a car.”

SHIFTED ✓: “Boris_i thought that I_i could buy a car.”

UNSHIFTED ✗: “Boris_i thought that I_{Auth(c*)} could buy a car.”

(117) Boris men-ni mešina(-ni) al-al-li q-im-mi
 Boris 1SG-GEN/ACC car-ACC buy-MOD-PFCT-1SG-ACC think-PST
 suna-di.

LITERAL: “Boris thought that I could buy a car.”

SHIFTED ✗: “Boris_i thought that I_i could buy a car.”

UNSHIFTED ✓: “Boris_i thought that I_{Auth(c*)} could buy a car.”

Unlike the other languages discussed here, Balkar *does* allow indexical shifting in nominalized complements of attitude verbs. But there are two types of nominalizations in Balkar: those that take a nominative subject (116), and those that take an accusative one, (117). The accusative nominalization independently manifests the properties of a constituent that lacks a C projection: e.g. it cannot be coordinated with bonafide CPs, disallows scrambling out of the nominalization and focalization of part of the nominalization (the latter of which could be diagnostic of the presence of a Focus projection in the periphery in the sense of Rizzi, 1997). Conversely, the nominative nominalization in (116), exhibits the properties of a clause that projects a C head with respect to these diagnostics. Crucially, indexical shift is possible in the latter, but not the former.

Finally, describing indexical shift in the Athabaskan language, Rice (1989) reports that there is a regular correspondence between complementizer deletion and indexical shift in this language (see also Baker, 2008, Chapter 4, for discussion of this data). Specifically, the complements of verbs that do not induce indexical shift can host overt complementizers whereas those that do manifest indexical shift cannot. This leads to differences in grammaticality like the following (Rice, 1989, p. 1273, formatting mine):²¹

(118) NO INDEXICAL SHIFT → OVERT COMPLEMENTIZER
 John [_{CP} ?eráke?ée wihsj gú] kodjshq.
 John parka 1SG.made COMP 3.know.area

²¹We should not be concerned that the presence of indexical shift correlates with the absence of the complementizer, rather than the other way around. In fact, many embedded root clauses are known for lacking overt complementizers, e.g. embedded V2 in Germanic and English embedded clauses with complementizer-drop. What is relevant here is that the availability vs. lack thereof of indexical shift in the embedded clause directly conditions the spell-out of the *complementizer* of the embedded clause, suggesting that the monster responsible for indexical shift is merged in a part of the structure that is local to it, i.e. also in the C layer.

“John knows [_{CP} that I made a parka]”

- (119) INDEXICAL SHIFT → *OVERT COMPLEMENTIZER
 John [_{CP} ?eráke?ée wihsj (*gú)] sedeyǰdí.
 John parka 1SG.made (*COMP) 3.told.1SG
 “John told me [_{CP} he made a parka]”

As Baker (2008, p. 131, fn.11) itemize out, such data provide strong evidence that the contextual information responsible for inducing indexical shift is present in the syntax, and additionally suggest that it is represented in the complementizer layer of the clause.

9.4 Indexical shift without attitude verbs

Since the current system places the onus of indexical shift on (varieties of) C head, the role of the attitude *verb* with respect to indexical shift is significantly demoted. Thus, a corollary prediction of the analysis is that indexical shift should, in theory, be possible even in a structure that lacks an attitude verb, *as long as the monstrous C head has access to a content nominal that is associated with an attitude*.

This prediction seems to be confirmed, as well. Though what we have to go on is still a fairly small sample, the data suggests that indexical shift is indeed possible in intensional environments that nevertheless do not involve an actual intensional verb. I am aware of three languages, all typologically rather distinct from one another, that exhibit this pattern, based on what has been reported so far. Spadine (To Appear) reports that clausal embedding can occur in one of two ways in this language — with an attitude predicate as in (120) or with an *il*-marker as in (121) which itself has a full and a truncated variant, as shown in (121a)-(121b):

- (120) Clausal Embedding with attitude verb:
 Naomi [Aman siga kim-zi-sarhət] ti-ħasib.
 Naomi(F) Aman(M) meat COMP-REL-cook 3FS-think

‘Naomi thinks that Aman cooked meat.’

- (121) *il*- constructions:

- a. Full *il*-construction:

Naomi [Aman siga sariħə-u **il-a**] ti-ħasib.
 Naomi(F) Aman(M) meat cook-3MS il-3FS 3FS-think

‘Naomi thinks that Aman cooked meat.’

- b. Truncated *il*-construction:

Naomi [Aman siga sariħə-u **il-a**].
 Naomi(F) Aman(M) meat cook-3MS il-3FS

‘Naomi says/thinks that Aman cooked meat.’ (meaning: According to Naomi, Aman cooked meat).

An attitude can be reported with a standard attitude predicate, as in (120): in this case, the proposition is embedded under a complementizer *kimzi*. An alternative is what Spadine calls the *il*-construction, involving a marker *il*, which itself has two variants. In the full *il* construction in (121a), the *il* marker, which marks agreement with the

attitude-holder, co-occurs with an attitude verb. The truncated *il*-variant in (121b) looks minimally different in that it simply lacks an overt attitude verb.

Thus initially suggests, either that there is a concealed attitude verb, or that *il* itself is functioning as the attitude verb, in (121b), Spadine presents a range of evidence showing that *il* in the truncated variant does not behave like a regular verb in Tigrinya: it is morphologically invariant for tense-aspect-mood, cannot be negated, be temporally modified in any way, or be modified by adverbs. In contrast, all these options are permitted in the full *il* variant. As such, Spadine proposes that truncated *il*-structures like (121b) do not involve clausal embedding at all. Further support for a monoclausal structure in a sentence like (121b) comes from the fact that the main verb in such a sentence uses a vocalic template that is normally restricted to root clauses.

Crucially, even though (121b) doesn't seem to involve an attitude verb, the sentence still instantiates an attitude report. Spadine reports that such sentences have a perspectival interpretation — further supported by the fact that the presence of *il* is required for the binding of logophors in this language — telling us whose perspective the assertion is reported from. This perspective-holder is the element that *il* agrees with — *Naomi* in (121b). Spadine analyses *il* as the overt instantiation of the Persp head in Sundaresan (2012): but we might perhaps also think of this Persp head as being instantiated by a kind of evidential head in this instance.

The relevance of this set of data to our concerns is that *il*-constructions, both full and truncated, also allow optional indexical shift, as shown in (122) below (reformatted from Spadine, To Appear, Ex. 10, 3):

- (122) Hiwət [ane nəts'ħambib-e il-a] (ti-ʕammin).
 Hiwet.F 1S DET book read-1S il-3FS 3FS-believe
 Unshifted Reading: ✓ 'Hiwet_i believes that I_c* read the book.'
 Shifted Reading: ✓ 'Hiwet_i believes she_i read the book.'

Again, the main verb in the truncated variant *ambib* ('read') shows root morphology. Standard tests involving *wh*-extraction and cross clausal binding show that what we have here is indeed a bonafide case of indexical shift, not of quotation.

These Tigrinya facts are precisely what we expect to be possible in the current system. The sentence in (122) precisely satisfies the minimal input condition for indexical shift laid out at the beginning of this section: we have a root complementizer (presumably realized by *il* itself or a head below *il*, as Spadine proposes) which is monstrous. There is no attitude verb in the truncated *il*-variant, but the content of the attitude is nevertheless made clear, as is the identity of the attitude holder itself. This is all we need for indexical shift to obtain under the current system. Spadine reports that clauses embedded under the *kimzi* complementizer, as in (120), cannot undergo indexical shift. Under the current model, this too follows under the assumption that *kimzi* instantiates a trivial $\hat{\omega}_{World}$ quantifying over worlds alone.

Two other potential candidates for indexical shift in the absence of an attitude verb come from Telugu (Dravidian) and Assamese (Indo-Aryan).²² These languages, like

²²My data is from recent work in Balusu (2018) and Rajkhowa (2018), but both treat these phenomena as instances of logophoric binding. But such a conclusion is partly reached on the basis of the fact that Shift Together exceptions obtain in these languages — something that this paper has attempted to show is not actually a problem for an analysis of indexical shift.

Tamil, allow monstrous agreement under a subset of attitude predicates. Balusu (2018) reports that Telugu allows monstrous agreement under a slightly broader range of attitude predicates than Tamil does: it is fully grammatical under ‘say’ and ‘think’, but less so under ‘discover’ and ‘know’. The Assamese pattern differs slightly from that in Telugu: Rajkhowa (2018) reports for Assamese that monstrous agreement is fully licit under ‘say’ and ‘think’ but is completely ungrammatical under ‘discover’ and ‘know’. Where both Telugu and Assamese differ starkly from Tamil is in allowing such monstrous agreement also in the absence of an attitude verb. This occurs in rationale clauses like (123) below for Telugu (reformatted from Balusu, 2018, Ex. 33, 21) and (124) for Assamese (Rajkhowa, 2018, Ex. 11, 10):

- (123) Ravi_i tanu_i paḍḍaa-nu ani raaleedu.
 Ravi he fell-1SG that came-not
 ‘Ravi_{dese} didn’t come as he_{dese} fell.’
- (124) Xi mar-im buli go-isil-e.
 3MSG beat-FUT-1SG COMP go-PST-3
 ‘He went with the purposes of thrashing/beating.’

Again, this is not an issue for the current approach since such instances of indexical shift nevertheless involve an attitude report — as also emphasized by the obligatory *de se* reading of the bound anaphor *tanu*, something that is also independently reported for such structures in Assamese by Rajkhowa. Under the current analysis, the complementizers *ani* and *buli* (‘that’) in Telugu and Assamese, respectively, are the bearers of intensionality, not an attitude verb. We assume that, like in Tamil, such a complementizer also denotes a $\hat{\lambda}Auth$, thus can shift 1st-person indexicals in its scope. Assamese provides additional morphological evidence for localizing this information on the complementizer. Rajkhowa reports that this language has another complementizer *ze*. But indexical shift is only possible under a *buli* complementizer, as in (124).

10 Conclusion

I have proposed here a new model of indexical shift that captures the following desiderata, which in turn I have independently motivated:

- (i) Shift Together obtains when it can, but exceptions to it may obtain when it cannot.
- (ii) The utterance-context is never overwritten.
- (iii) Indexical shift is an embedded root phenomenon.

The current approach derives these properties in a way that combines insights from both MC and PC. It is selectional like the former, but implements indexical shift via quantifier binding, like the latter. The $\hat{\lambda}Auth$ is a dedicated complementizer along the functional spine of a clause, which intensionally quantifies over (different types of) context. All intensional quantification, including quantification over worlds, is monstrous in this system — a move that, in addition to providing a more uniform semantics for attitude

reports hopefully also demystifies indexical shift to some extent, by bringing it into the realm of the more familiar. The hybrid nature of this system also seeps into the way in which variation for shifty behavior is modelled: the presence of a $\hat{\omega}$ as well as the shiftability of individual indexicals may be independently parametrized. In addition, implicational restrictions on shifting that are attested *between* classes of indexical (e.g. 1ST > 2ND > HERE), may be captured in terms of the particular type of $\hat{\omega}$ that an indexical is merged under. Such $\hat{\omega}$ s directly encode these dependencies in terms of their compatibility specifications: a $\hat{\omega}_{Addr}$ will shift not only *Addressee* but also *Author*, thus precluding a scenario where a SHIFTABLE 2nd-person indexical is shifted to the exclusion of 1st. This same hierarchy is also replicated at the level of individual indexicals, in terms of a structural asymmetry across indexicals of different contextual classes. A 1st-person indexical represents a structure where the 1st-person pronominal head is free to combine with its context variable sister. But a 2nd-person indexical denotes a more complex structure that actually contains the structure for the 1st, thus never combines with the context-variable directly: as such, a 2nd-person pronoun may be SHIFTABLE only if a 1st-person pronoun itself is SHIFTABLE. Similar considerations hold for the locational indexical which contains the structure for the 2nd-person indexical.

Optional indexical shift in this model obtains whenever a $\hat{\omega}$ of the appropriate type is optionally introduced into the structure, in a language where the indexicals are only SHIFTABLE. Obligatory indexical shift involves only a minor modification of this scenario: the relevant $\hat{\omega}$ must always be present in the structure. The Relativized Minimality generalization on contextual binding, regulated by the Context Minimality Generalization, then ensures that any SHIFTABLE indexical will indeed be obligatorily shifted. Unshift is derived in a number of ways: either because the $\hat{\omega}$ is absent or because the indexical is UNSHIFTABLE, or both. But only the second of these scenarios is compatible with a scenario that involves an Exception to Shift Together. Specifically, such exceptions obtain whenever an UNSHIFTABLE and SHIFTABLE indexical are merged in the same intensional domain under a $\hat{\omega}$. In contrast, Shift Together must obtain whenever two or more SHIFTABLE indexicals are merged in the same intensional domain under a $\hat{\omega}$. The core difference between a language like Zazaki, on the one hand, and Tamil, on the other, is that 1st-person indexicals in the former are all lexically specified to be SHIFTABLE; in contrast, a language like Tamil has two different types of 1st-person indexical, one that is SHIFTABLE, and another that is UNSHIFTABLE.

What the system doesn't explicitly regulate, at least at the moment, is the distribution of indexical "doublets" in a given language: i.e. indexicals of a particular class that are SHIFTABLE as well as UNSHIFTABLE, as in Tamil, or Mishar Tatar. As it stands now, whether a language has such doublets to begin with, as well as how these doublets may then be relatively distributed within an intensional domain, is simply a matter of lexical choice, parametrized across languages. Yet, there is reason to suspect that certain types of SHIFTABLE indexicals have dedicated positions reserved for them in the clausal left periphery. Such indexicals also tend to be silent, (though they may also be overt) and are typically associated with dedicated functional heads like the Persp(ective) head in Sundaresan (2012) or the Jussive head in Pak et al. (2008). While it is not entirely clear at the moment *why* this should be the case, it is independently well noted that clause-peripheral functional material is often silent (Zanuttini et al., 2012), so we

should not take this tendency to be unique to indexical shift. In the current system, such a pattern would be derived in terms of selectional restrictions on the external Merge of an indexical in the specifier of a particular functional head. It is then unsurprising that such a functional head would be in the clausal periphery, given that this region is typically associated with the information-structural and discourse-pragmatic properties (Rizzi, 1997; Cinque, 1999; Speas and Tenny, 2003; Adger, 2007, and many others).

Assuming that this is indeed correct, a prediction that we make is that, in languages with optional indexical shift, higher indexicals should always be SHIFTABLE while lower indexicals may be SHIFTABLE or UNSHIFTABLE. This prediction seems to be borne out, based on reports in Özyıldız (2012) for Turkish and more recently Akkuş (2018) for varieties of Kurdish and Zazaki. For instance, Özyıldız (2012), notes the following 3/4 discrepancy in Turkish:

- (125) Tunç Ayşe-'ye [ben sen-i nere-ye ata-yacağ-ım] de-miş?
 Tunç Aysşe-DAT I you-ACC where-DAT appoint-FUT-1SG say-PST
 Literal: 'Where did Tunç say to Ayşe that I would appoint you?'
 READING 1: ✓ Where did Tunç_i say to Ayşe_j that I_{c*} would appoint you_{c*}?
 READING 2: ✓ Where did Tunç_i say to Ayşe_j that he_i would appoint her_j?
 READING 3: ✓ Where did Tunç_i say to Ayşe_j that he_i would appoint you_{c*}?
 READING 4: ✗ Where did Tunç_i say to Ayşe_j that I_{c*} would appoint her_j?

(125) shows us that both person indexicals may shift (Reading 1) or both remain unshifted (Reading 2). Reading 3 shows that Shift Together may be violated — the higher 1st-person indexical is shifted while the lower 2nd-person indexical remains unshifted. The impossibility of Reading 4 shows that the relative configuration of indexicals in Reading 3 is a precondition for a Shift Together exception in this language. Akkuş (2018) who reports similar restrictions for varieties of Zazaki and Kurdish notes that the generalization seems to be that a lower indexical may be shifted only if a higher one in the same domain is shifted, as well.

While it is indeed tempting to think of this as a kind of intervention effect *between* indexicals (or between an indexiphor and an indexical, as Deal, 2018, argues), all we need to derive it is the afore-mentioned idea that an indexical in a clause peripheral position is *independently* restricted to be SHIFTABLE, while an indexical lower in the clause has no such restrictions placed on its interpretation. Reading 1 would then necessarily instantiate a structure that lacks a $\hat{\omega}$: any indexical in the clause, despite being SHIFTABLE, would then necessarily be bound by the root quantifier associated with the utterance context, and remain unshifted. Reading 2 would necessarily reflect a structure with a monstrous complementizer: the higher indexical is restricted to be SHIFTABLE, and the shifting of the lower one shows that it is a SHIFTABLE indexical, as well. Shift Together is the only possible result. Reading 3 would encode a structure with a monstrous complementizer where the lower indexical is UNSHIFTABLE; the higher indexical must nevertheless remain SHIFTABLE, given selectional restrictions on its Merge. A Shift Together exception is the result. Reading 4 could only result if the higher indexical were UNSHIFTABLE while the lower indexical were SHIFTABLE in the scope of a $\hat{\omega}$. But precisely this configuration is ruled out. The 3/4 Turkish pattern is thus derived.

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