Abstract This paper provides novel data from shifting indexicals in Mutki Zazaki (MZ), Muş Kurdish (MK), and one variety of Turkish (T) to demonstrate the necessity of not only the shifty operator OP of Anand & Nevins (2004), Deal (2017), but also an operator that undoes its effects, un-OP. Empirically, it demonstrates that these three languages allow violations of Shift Together (ST) (Anand & Nevins, 2004), the constraint that states that all indexicals within a speech-context domain must pick up reference from the same context, but that these violations are allowed only if no unshifted indexical intervenes between the shifted indexical and the shifty operator OP, located in the CP domain.

1 Introduction

Indexicals, e.g. I, here, yesterday, are traditionally assumed to pick out their referents directly from the context to which the author of an utterance belongs (Kaplan, 1977). In English, for instance, the first person pronoun I gets its semantic value from the actual context of speech.

(1) Situation to be reported:
   John says: ‘I am a hero.’
   a. *John says that I am a hero.
   b. John says that he is a hero.

Since indexicals are not affected by modal operators, Kaplan (1977) also argues that these expressions need to be evaluated with respect to a context parameter in addition to other parameters that are responsible for the semantic evaluation of other expressions. The first person pronoun in must refer to the speaker of the context of utterance even under the modal operator. Thus, unlike (2a), (2b) is false given its truth-conditions: For every world w’ accessible from w, the speaker of the context of utterance exists in w’.

(2) a. I exist. (a priori true)
   b. Necessarily, I exist. (false)

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Considering the interpretation of indexical expressions like the English *I* given in (1) and (2), Kaplan (1977) conjectured that indexical expressions in natural language are always interpreted relative to the actual context of utterance and essentially they do not receive their value from the reported speech act. Acknowledging that this may be a logical possibility Kaplan claims that there are no context shifters in natural language that can change the semantic value of an indexical like the 1st person pronoun *I*. If such shifters were found in natural language they would be, as Kaplan dubs, *Monsters*. Schlenker (2003) however, presents empirical evidence for the existence of such *monsters*. He notes in Amharic indexicals embedded under an attitude predicate can be interpreted in verb complement clauses in relation to the context of the reported speech act, not in relation to the utterance context. Consider (3).

(3) Situation to be reported:
   John says: ‘I am a hero.’
   \[ \text{Jon jagna no-niñ yil-all} \quad \text{Amharic: I = speaker, I = Subject} \]
   \[ \text{John hero be.PF-1SO 3M.say-AUX.3M} \quad \text{Schlenker (2003, 68:53)} \]

The first person pronoun in the embedded clause can refer to either the speaker of the actual speech act or to the reported speech act, namely *John*. This phenomenon, known as *Indexical Shift*, has been reported in a number of languages, including Zazaki, Japanese, Korean, Nez Perce, Turkish, Tsez, Slave (see Deal, 2016, 2017, for an overview and a more comprehensive list of languages). Accordingly, there has been much recent work on the syntax and semantics of indexical shift in various languages (Schlenker, 1999, 2003; Anand & Nevins, 2004; Podobryaev, 2014; Shklovsky & Sudo, 2014, i.a.), and much of this work has come to the conclusion that there is a particular operator responsible for shifting the context on which indexical pronouns rely for their reference. However, it has generally been assumed that when an indexical pronoun finds itself in the scope of a context-shifting operator, it is obliged to pick up its reference from the context introduced by that operator, and it does so with no further restrictions. On the basis of Zazaki and Slavey, Anand & Nevins (2004) show that indexical shifting is possible, but with certain restrictions, illustrated in (4).

(4) a. *Shift-Together*: The indexicals in Zazaki and Slavey show shifting under certain modal verbs, but cannot shift independently.

   b. *Within-language variation in indexical shifting*: In Slavey, the same indexical shifts obligatorily, optionally, or not at all, depending on the modal verb it is under.

In this paper, I demonstrate that, for the majority of Mutki Zazaki (MZ) and Muş Kurdish (MK) speakers and in a variety of Turkish (T), (i) not all pronouns in the scope of the operator must shift, and (ii) the ability of a pronoun to shift can be blocked by an intervening unshifted pronoun. As such, I argue for the necessity of an operator, *un-OP*, that undoes the effects of the shifty operator (OP) of Anand & Nevins (2004), Deal (2017) in a systematic way. The violation of Shift Together is possible only if no unshifted indexical intervenes between the shifted indexical and the shifty operator OP, located in the CP domain.

The paper is organized as follows. §2 discusses the status of indexical shift in Turkish, MZ and MK, and discusses the interpretation of shifted indexicals, particularly that they need
to be interpreted de se. §3 discusses the two general principles, i.e. Shift Together and No Intervening Binder, which govern the distribution of shifted indexicals crosslinguistically. §4 lays out the empirical contribution of this paper – the existence of violations of Shift Together in the same speech-context as well as across two speech-context domains. Moreover, I discuss an alternative account of these facts given by Anand (2006) and Deal (2017) and argue that the logophoric account does not extend to languages in question. §5 proposes a change for the denotation and structure of context, and introduces another operator, un-OP, using Deal’s (2017) Monstrous Functional Application. §6 takes a look at Deal’s (2017) alternative account, which assumes a hierarchy among the operators in the left periphery. §7 briefly discusses the implications of the analysis and concludes the paper.

2 The basics of shifting

This section introduces the basic patterns of indexical shift in Turkish, MZ and MK, leaving the more complicated instances for later.

2.1 Indexical Shift in Turkish

Before proceeding with the discussion, I establish that 1st and 2nd person pronouns in Turkish are true indexicals, adopting a diagnostic from Kaplan (1977), cited in Deal (2017). The well-formed disagreement in (5a) demonstrates that descriptions like the speaker and the person talking can, in principle, be used to refer to the same individual regardless of who it is that utters them. I, on the other hand, has no such option, as in (5b). Same facts hold for 2nd person, as shown in (6). This indicates that in Turkish 1st and 2nd person pronouns are true indexicals.

    what time Obama speak-if speak-REL person American
    ‘Whenever Obama is speaking, the speaker is a person from America.’

  b. #Ne zaman Obama konuş-sa, ben Amerikalı-yım.
    what time Obama speak-if I American-1sg
    ‘Whenever Obama is speaking, I am a person from America.’

(6) a. Ne zaman Obama bir konuşma dinle-se, dinle-yen kişi Amerikalı.
    what time Obama a speech listen-if listen-REL person American
    ‘Whenever Obama is listening to a speech, the listener is a person from America.’

  b. #Ne zaman Obama bir konuşma dinle-se, sen Amerikalı-sın.
    what time Obama a speech listen-if you American-2sg
    ‘Whenever Obama is listening to a speech, you are a person from America.’

Indexical shift in Turkish has previously been discussed in two works: Şener & Şener (2011) and Özyıldız (2013). In order to rule out the possibility that the embedded clause is (partially) quoted, I provide two diagnostics from matrix question formation and NPI licensing. As has been noted in the literature on indexical shift (e.g., Anand & Nevins 2004), grammatical
dependencies cannot cross quotation marks. This is shown for English in (7). In (7a), a whole element is moved out of the quoted clause into the matrix clause and the resulting utterance is ungrammatical. Likewise, the ungrammaticality of (7b) is caused by the fact that the matrix negation cannot license the NPI in the quoted clause.

(7) a. *What_{i} did Bob say, “I ate t_{i}”?
   b. *Bob didn’t say, “I ate any bananas.”

As Özyıldız (2013) shows, Turkish allows such dependencies between the embedded and matrix clauses indicating that the embedded clause is not a quotation. This is shown in (8) and (9). In (8), a wh-element nereye ‘where’ in the embedded clause can scope into the matrix clause and receive matrix question interpretation. In (9), negation in the matrix clause can license the NPI in the embedded clause.

(8) İnan Ayşe’ye [ben-i nere-ye ata-di-lar ] de-di?
İnan Ayşe-DAT [I-ACC where-DAT appoint-PST-3PL ] say-PST
‘Where did İnan_{i} say that they appointed {me, him_{i}}?’ (place of appointment)

(9) a. *İnan kimse-yi gör-dü-m de-di?
İnan anyone-ACC see-PST-1SG say-PST
‘İnan_{i} said he_{1} saw anyone.’
   b. İnan kimse-yi gör-dü-m de-me-di?
İnan anyone-ACC see-PST-1SG say-NEG-PST
‘İnan_{i} didn’t say that he_{1} saw anyone.’

Özyıldız (2013) also demonstrates that these sentences cannot be accounted for via a ‘partial quotation’ account, as such indexicals would be quoted locally, thus they do not shift, rather behave normally. Consider (10).

(10) a. SCENARIO: I go to the post office to get a visa. The lady at the counter tells me:
   Beyefendi, o işlem için konsolosluk-a git-mek gerek.
sir.VOC that transaction for consulate-DAT go-INF necessary
   ‘Sir, it is necessary to go to the consulate for that transaction.’
   b. Kadın bana nere-ye git-me-n gerek de-di?
woman I-DAT where-DAT go-NMLZ-2SG necessary say-PST.3SG
   ‘Where did the woman tell me that I should go?’

Note that there is no person feature in (10a) to be quoted, which rules out the partial quotation analysis.1 In addition to the 1st person pronoun in (8), second person pronoun can also be shifted in Turkish (adapted from Özyıldız (2013) with slight modifications).

‘Who did the oracle say to Oedipus_{i} that he_{i} would kill and marry _?’

1See also Deal (2012) for other arguments against the partial quotation analysis.
The following examples illustrate that shifting is possible in passive clauses as well.

(12) Hasan Leyla-'ya [ben nere-ye götür-ül-eceğ-im ] de-miş?
Hasan Leyla-DAT [I where-DAT take-PASS-FUT-1SG ] say-PST
‘Where did Hasan say to Leyla that {I, he} would be taken?’

(13) Hasan Leyla-'ya [sen nere-ye götür-ül-ecek-sin ] de-miş?
‘Where did Hasan say to Leyla that {you, she} would be taken?’

The previous studies are largely compatible with each other, although they differ in one major respect: focusing on 1st person, Şener & Şener claim that overt and null 1st person pronominal subjects display an interpretational contrast with respect to shifting. While null pronominal subjects are referentially ambiguous between the speaker of the actual utterance context and the subject of the embedded clause, overt pronominal subjects are obligatorily interpreted only relative to the actual utterance context. That is, null 1st person pronominal subjects allow a shifted reading, yet their overt counterparts do not. They provide the following contrast.

(14) a. Seda [pro sınıf-ta kal-dı-m ] san-iyor
   Seda [class-LOC flunk-PST-1SG ] believe-PROG
   ‘Seda believes that {I, she} flunked.’ (Şener & Şener, 2011, (11))

   b. Seda [ben sınıf-ta kal-dı-m ] san-iyor
   Seda [I class-LOC flunk-PST-1SG ] believe-PROG
   ‘Seda believes that {I, *she} flunked.’ (Şener & Şener, 2011, (15))

Özyıldız, on the other hand, claims that both null and overt pronouns may be shifted, providing examples such as (15).

(15) a. İnan [ben-i Viyana’ya ata-yacak-lar ] de-miş?
   İnan [I-ACC Vienna-DAT appoint-FUT-3PL ] say-PST
   ‘İnan said that they appointed {me, him} to Vienna.’

   b. İnan Ayşe-’ye [sen-inle ben-i nere-ye ata-yacak-lar ] de-miş?
   ‘Where did İnan say to Ayşe that they would appoint {you and me; him and her}?’

Therefore, these studies point to the fact that there are (at least) two groups of speakers in Turkish, which has been confirmed in my own informal survey as well. Moreover, the data is consistent with the shift-together of Anand & Nevins (2004). However, Özyıldız (2013) reports that some speakers allow configurations in which Shift-Together is violated in a restricted way. In this paper, I will investigate the grammar of this third group of Turkish speakers. My investigation has yielded the following results: out of 22 speakers, 12 only allow shifting of null pronouns, while for 10 speakers overt pronouns may also shift. Among the participants, 5 speakers, ca. 23%, allow Shift-Together violation. Although a relatively small percentage of the speakers, in section 4 I pursue an investigation of this specific group of speakers with a particular set of revealing judgements that shed light on the nature of indexical shift.
Before turning to Mutki Zazaki, it is worth noting that although shifting of pronouns is optional in Turkish, there are certain elements which are obligatorily shifted when embedded under an attitude verb. For instance, in Turkish the evaluative adverb *iyi ki* ‘fortunately/luckily’ is speaker-oriented. Thus, the speaker, cannot negate her attitude towards an event in question, as shown in (16) (see Saito (2017) for Japanese).

Leyla fortunately party-DAT come-PROG but I-GEN for good not  
‘Fortunately Leyla is coming to the party. But that is not fortunate for me.’

When embedded, the attitude holder of *iyi ki* is necessarily shifted from the actual speaker to the reported speaker, as in (17). (17a) can naturally follow from (17), while (17b) cannot.

(17) Dün Kemal [Leyla’nın iyi ki yarın parti-ye gel-eceğ-i]-ni  
yesterday Kemal [Leyla-GEN fortunately tomorrow party-DAT come-NMLZ-POSS]-ACC  
söy-le-di.  
say-PST  
‘Yesterday, John said that Leyla would come to the party tomorrow.’

a. But that (Leyla’s coming to the party) was not fortunate for me.

b. #But that was not fortunate for him.

This section has demonstrated that Turkish does indeed manifest indexical shift, and eliminated concerns such as quotation.

### 2.2 Indexical Shift in Mutki Zazaki

Mutki Zazaki (MZ, Öpengin & Anuk, 2015, 2016; Akkus, 2017) is another language where Shift-Together appears to be systematically violated.\(^2\) Before moving on to relevant set of data, I discuss the basic properties of the dialect that are relevant to the present discussion. MZ differs from the dialect described in Anand & Nevins (2004) (see also Todd 2002; Toosarvandani & Van Urk 2014, and papers in Kenstowicz 2004), which we can call Standard Zazaki (SZ), in many respects.

For instance, the two dialects diverge a great deal in terms of case and agreement alignment. SZ maintains the canonical ergative pattern: in the past stem, subjects of transitive clauses bear a marked case, while both objects of clauses and subjects of intransitive clauses have unmarked case, as in (18).

(18) a. o vizer ame  
3SG.DIR yesterday come.PAST.3M  
‘He came yesterday.’

b. ey ez di-yan  
3SG.OBL 1SG.DIR see.PAST-1SG  
‘He saw me.’

\(^2\)In fact, the variety I discuss slightly differs from that of Öpengin & Anuk in minor lexical aspects. However, I assume that there aren’t major differences between them, leaving it as a possibility that it might turn out to be the case.
In contrast, in present clauses, subjects of both intransitives and transitives bear unmarked case, whereas the object (if any) receives the marked case, as illustrated in (19).

(19) a. nê yen-ê tya
    3PL DIR come PL here
    ‘They come here.’ (SZ, Todd, 2002, 46: 89)
b. nê min vinen-ê
    3PL DIR 1SG OBL see PL
    ‘They see me.’ (SZ, Todd, 2002, 46: 94)

MZ is identical to SZ in the present stem with respect to the alignment pattern. However, it exhibits an important deviation from the canonical pattern: the so-called double-oblique pattern. In the past stem, the transitive subject and the direct object are marked with oblique case. The verb then bears invariant third singular agreement by default, and there is no NP in direct case in the clause. Moreover, the single theme arguments of unaccusatives also bear oblique case (see Akkuş (2017) for details; the dialects differ in several other respects as well, but I leave them aside as they are not directly related to the present discussion).

(20) a. mi tu çarsu-ye di dî
    1SG OBL 2SG OBL market OBL in see PAST 3SG
    ‘I saw you at the market.’ (MZ, Öpengin & Anuk, 2015, 5)
b. mi ginê-y erd
    1SG OBL fall PAST 3SG ground
    ‘I fell down.’

The diagnostic for true indexicality extends to MZ, demonstrating that 1st and 2nd person pronouns are true indexicals in MZ. Consider (21) for the illustration of 1st person pronoun, but same fact holds also for 2nd person.

(21) a. Obama wexta ki qsey ken-o, merdim ki qsey ken-o Amriqa re-o
    Obama when that speak 3SG person that speak 3SG America from 3SG
    ‘Whenever Obama is speaking, the speaker is a person from America.’
b. #Obama wexta ki qsey ken-o, e Amriqa re-a
    Obama when that speak 3SG 1SG DIR America from 1SG
    ‘Whenever Obama is speaking, I am a person from America.’

Regarding indexical shifting, MZ manifests shifting like its standard counterpart, as shown in (22) and (23). In (22), the wh-element in the embedded clause can scope into the matrix clause and receive matrix question interpretation. In (23), the NPI can be licensed in an embedded clause with shifted indexicals by a matrix negation.

(22) Kemal va [mi çi vea ]?
    Kemal said 3SG [I OBL what ate 3SG]
    ‘What did Kemal say {I, he} ate _?’ (MZ)
Similarly, second person pronoun is also shiftable in Mutki Zazaki (glossing over the agreement properties of the 2nd person). (25) is an example where both 1st person and 2nd person indexicals are shifted.  

\[(25)\]

<table>
<thead>
<tr>
<th>a. Kemal va hükses dî.</th>
<th>Kemal said.3SG anyone saw.3SG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kemalî said heî saw anyone.</td>
<td></td>
</tr>
<tr>
<td>b. Kemal ni-va mi hükses dî</td>
<td>Kemal NEG-said.3SG I.OBL anyone saw.3SG</td>
</tr>
<tr>
<td>Kemalî didn’t say that heî saw anyone.</td>
<td></td>
</tr>
</tbody>
</table>

The following sentence provides another example where the embedded clause is in passive voice.

\[(26)\]

| Kemal Leyla-re va [(e) to ber-a hükses ]? |
| Kemal Leyla-to say.pst.3SG [I.DIR you.OBL take-1SG where ] |
| ‘Where did Kemalî say to Leylaî that heî would be taken?’ |

One crucial aspect in which MZ differs from SZ is the possibility of shifting non-pronominal indexicals. Whereas all indexical expressions are shiftable in SZ, locative and temporal indexicals are not shiftable in MZ.

\[(27)\]

**Locative**

| a. Waxto ke ma D.-de bime, H. mi-ra va ke o ita ame dina when that we D.-at were, H.OBL me-at said that he here came world |
| ‘When we were in Diyarbekir, Hesen told me he was born {here, in D.}’ |
| b. ma Bitlis’e bide Kemal va hetie bî? we Bitlis-were.at Kemal said here was.born |
| ‘When we were in Bitlis, Kemal said that he was born {here, *in Bitlis}’ |

**Temporal**

| a. Hefte nayeraraver, H. mi-ra va ke o vizeri Rojda paci kerd. week ago H.OBL me-at said that he yesterday Rojda kiss did |
| ‘A week ago, H. told me that he kissed Rojda {8 days ago, #yesterday}.’ |

\[3\]I use examples that are in the form of a matrix wh-question where the wh-word sits inside the embedded clause. This dependency between the matrix and embedded clause eliminates the possibility that the embedded clause is interpreted as a quote.
In this section, we have introduced the basic alignment pattern in MZ, in which due to the *double-oblique* pattern, despite 1st or 2nd person subject, the default 3sg agreement is triggered. Moreover, we have taken a look at the indexical shift in the language in comparison with standard Zazaki.

### 2.3 Indexical Shift in Muş Kurdish

MK allows shifting of indexicals within the scope of the verb *gotin* ‘say’, similar to Zazaki.

(29) **Rojbîn-ê** got  ku ez nexweş-im  
Rojbîn-OBL say.PST.3SG that I.DIR sick-COP.1SG  
‘Rojbin said that {I am, he} is sick.’

(30) **Rojbîn-ê** ji Sîtî ra got  ku tu nexweş-i  
Rojbîn-OBL p Sîtî.OBL PART say.PST.3SG that you.DIR sick-COP.2SG  
‘Rojbin said to Sîtî that {you are, she} is sick.’

Moreover, MK displays the same cross-clausal dependencies that indicates that these are instances of indexical shift and not quotation. In (31), the NPI can be licensed in an embedded clause with shifted indexicals by a matrix negation.

(31) a. **min** kes-i *(ne)-dît.  
 I.OBL anyone-OBL NEG-saw.3SG  
 ‘I did *(not) see anyone.’

b. Rojbîn-ê ne-got  ku min kes-i dit-iy-e  
Rojbîn-OBL NEG-said.3SG that I.OBL anyone-OBL saw-3SG-PERF  
‘Rojbin didn’t say that she saw anyone.’

Similarly, A’-extraction is licit out of complement clauses. In (32), the *wh*-element in the embedded clause can scope into the matrix clause and receive matrix question interpretation.

(32) Rojbîn-ê got  [ku min kî dit-iy-e ]?  
Rojbîn-OBL said.3SG [that I.OBL who saw-3SG-PERF ]  
‘Who did Rojbin say that {I, she} saw_?’

Note that all indexical expressions are generally capable of shifting within the scope of the verb *gotin* ‘say’ in MK (like the Zazaki dialect discussed in Anand & Nevins 2004), as in (33).

(33) a. (When we were in Muş),  
Rojbîn-ê ji min ra got  (ku) ew livir hat-iy-e  
Rojbîn-OBL p I.OBL to said.3SG that 3SG.DIR here come.PST-3SG-PERF  
din-ê  
world-OBL
b. (One month ago),

\textit{Rojbin\textit{-ê ji min ra got (ku) ew doh ji Stenbolê Rojbin-obl p LOBL to said.3SG that 3SG.DIR yesterday p Istanbul hat-îy-e come.PST-3SG-PERF}

‘Rojbin\textit{-i said to me that she came from Istanbul \{31 days ago, #yesterday\}.’

\section*{2.4 The interpretation of shifted indexicals}

Moving on to the interpretation of indexical shifting, shifting is only allowed if the report is a \textit{de se} attitude. For that, it must meet the criterion in (34) (from Pearson 2012).

\begin{enumerate}
\item \textit{Aboutness condition}: the attitude is about the attitude holder and
\item \textit{Awareness condition}: the attitude holder is aware that the attitude is about herself
\end{enumerate}

To test whether indexical shifting only occurs in \textit{de se} attitudes, a scenario must be constructed where the condition in (34b) is not met to see if the sentence is judged felicitous in such a situation. This is done in (35), (from Messick 2016). In this scenario, Leyla is not aware that she has an attitude about herself; the sentence with indexical shifting is judged to be infelicitous while the sentence without shifting is judged to be acceptable.

(35) \textbf{SCENARIO}: Leyla took an exam, and later saw the top 10 scores with the scorer’s student ID numbers. She forgot her own ID number, so did not know who was who. Looking to the top score, she thinks: “This student definitely passed!” But it turned out she was that student.

\begin{enumerate}
\item Leyla [\textit{pro} sınav-ı geç-ti ] san-iyor.
Leyla [ exam-ACC PASS-PST.3SG ] believe-PROG
‘Leyla believes that she passed the exam.’
\item \#Leyla [\textit{pro} sınav-ı geç-ti-m ] san-iyor.
Leyla [ exam-ACC PASS-PST-1SG ] believe-PROG
‘Leyla believes that she passed the exam.’ \textit{(Turkish)}
\end{enumerate}

\begin{enumerate}
\item Leyla [ya sınav verdirey ] boerbik.
Leyla [she exam PASS.PST.3SG ] believe.3SG
‘Leyla believes that she passed the exam.’
\item \#Leyla [mi sınav verdirey ] boerbik.
Leyla [I exam PASS.PST.3SG ] believe.3SG
‘Leyla believes that she passed the exam.’ \textit{(MZ)}
\end{enumerate}

(36) and (37) show that the interpretative restriction holds, and clauses with indexical shift can only express \textit{de se} attitudes. A similar interpretative restriction has been found for other languages that allow for indexical shift: clauses with indexical shift can only express \textit{de se} attitudes. Schlenker (1999, 97) provides the following example for Amharic.
(38) **SCENARIO**: Jon, who is a candidate in the election, is so drunk he doesn’t remember who he is. He watches TV and sees a candidate he finds terrific, thinking that this guy must be a hero. This candidate happens to be Jon himself though he doesn’t realize it.

(39) a. #Jon çguna na-ni yil-all
   John hero COP.PF-1sO 3M.say-AUX.3M
   ‘John says that he is a hero.’
b. John ḟwyew çguna nāw alā
   John the-man hero is said
   ‘John said the man is a hero.’

The obligatory *de se* interpretation extends to addressees as well. Consider the case of *de te* (addressee *de se*) in (40) from Özyildiz (2013), which builds on Anand (2006, 16).

(40) **SCENARIO**: Tunç is hosting a party and notices that one of his waiters, Can, is being a nuisance. He stops one of the waiters, and without recognizing that it is Can, he tells him: “Can should go home”.

(41) a. Tunç Can’a nere-ye git-me-si gerek de-dî?
   Tunç Can-DAT where-DAT go-NMLZ-3SG necessary say-PST
   ‘Where did Tunç tell Can that {he, #you} should go?’

(42) demonstrates that the same interpretative restriction holds in MZ, too, given the scenario in question. Songül Gündoğdu (p.c.) informs me that the same *de se* requirement is also observed in MK.

(42) a. Tunç Can-re gerek hawa kudie şiran?
   Tunç Can-to gerek he where-DAT go.SUBJ.3
   ‘Where did Tunç tell Can that {he, #you} should go?’

(43) **SCENARIO**: Muhemmet is hosting a party. He hears that a certain waiter named John is being a nuisance. Muhemmet tells the nearest waiter, “John should go home.” Unbeknownst to him, he’s talking to John.

Muhemmet John-gha [pro őy-ge kit-sh-ing kirek ] di-di.
Deal (2012) notes that no such requirement is imposed on locative indexical ‘here’ in Nez Perce, either. Despite the possibility of non-de se interpretation in other languages, I proceed with the conception that indexical shift requires de se interpretation in the three languages investigated in the present paper, and the analysis aims to capture this restriction as well.

3 Constraints on Indexical Shift

This section discusses the Shift-Together and No Intervening Binder constraints proposed by Anand & Nevins (2004); Anand (2006), which paves the way for the introduction of the problematic cases not predicted by these constraints in the following section.

3.1 Shift-Together

Anand & Nevins (2004), who investigate the behavior of indexical shift in Slave and Standard Zazaki, propose the generalization in (44). Deal (2017) provides the definition in (45) that also makes reference to the class of indexicals.

(44) **Shift-Together Constraint** (Anand & Nevins 2004: 16)
All indexicals within a *speech-context domain* must pick up reference from the same context.\(^4\)

(45) **Shift-Together** (Deal 2017: 19)
If one indexical of class \(\Psi\) picks up reference from context \(c\), all indexicals of class \(\Psi\) within the same minimal attitude complement must also pick up reference from context \(c\).

That is, where multiple indexical expressions find themselves in the scope of a the same attitude predicate, either they all receive shifted interpretations, or none of them receive shifted interpretations. ‘Mixed’ interpretations in (46), where clausemate indexical pronouns are interpreted according to different contexts, are ruled out by (44).

(46) Vızeri Rojda Bill-ra va ke ez to-ra miradiša
Yesterday Rojda Bill-to said that I you-to angry.be-PRES
‘Yesterday Rojda said to Bill, “I am angry at you.”’
‘Yesterday Rojda said to Bill, “AUTH(c*) is angry at ADDR(c*).”’
‘*Yesterday Rojda said to Bill, “AUTH(c*) is angry at you.”’
‘*Yesterday Rojda said to Bill, “I am angry at ADDR(c*).”’
(SZ, Anand & Nevins, 2004, 13)

In Anand & Nevins’s (2004) analysis, indexical shifting is the result of context-shifting operators in the CP domain (Anand 2006; Deal 2017) that overwrite the context parameter of the interpretation function with the intensional index parameter, as in (47):

\(^4\)A *speech-context domain* is the scope of a verb-of-saying up to the scope of the next c-commanded verb-of-saying.
Deal (2017) defines the overwriting process in a more categorematic way, thus provides the definition in (48a), and suggests that composition of a shifty operator and its complement proceeds via rule (48b). The partial overwriting as in Slavey is also recapitulated into a definition of the sort in (49).

### (48)

a. \([OP_\gamma]^{c,i} = \lambda p \in D_{<k,kt>} . p(i)(i)\)

b. Monstrous Function Application

If \(\alpha\) is a branching node and \(\{\beta, \gamma\}\) the set of its daughters, then for any context \(c\) and index \(i\): if \([\beta]^{c,i}\) is a function whose domain contains \(\lambda c'.\lambda i'.[\gamma]^{c',i'}\), then \([\alpha]^{c,i} = \beta^{c,i}(\lambda c'.\lambda i'.[\gamma]^{c',i'})\)

### (49)

Partial overwriting of parameters

\([OP_{AUTH}]^{c,i} = \lambda p \in D_{<k,kt>} . p(i)(c^{Author}/Author)\)

As seen in (47), the evaluation function is specified with both a context parameter and an index parameter. The index stores the current world-time of evaluation and can be changed by the modal quantification. Normally, the context parameter is not affected by the modal quantification. Yet, in indexical shifting languages, context-shifting operators overwrite coordinates of the context tuple with coordinates from the index tuple. In other words, shifting is process of value overwriting - within the scope of an OP_\gamma operator, the original context coordinate values are lost.

Anand & Nevins (2004) posit that in Zazaki lexicon the verb SAY can occur with OP_\gamma as a sister, as represented in (50) and (51).

### (50)

\([say \ OP_\gamma \alpha]^{c,i} = \lambda x . \forall j \text{ compatible with } x \text{ says in } i, [OP_\gamma [\alpha]]^{c,i}\)

### (51)

\([OP_\gamma [I \text{ am rich}]]^{c,j} = [[I \text{ am rich}]]^{j,j} = 1 \text{ iff } AUTH(j) \text{ is rich in } j.\)

This proposal captures the Shift Together constraint observed in Zazaki since when any indexical shifts, they all must, since indexical shift is the overwriting of the context parameter. Consider (52).

### (52)

ZAZAKI: John said to Bill that I am mad at you

\(\forall j \text{ compatible with what John says to Bill in } i, [OP [I \text{ am mad at you}]]^{c,j} = [[I \text{ am mad at you}]]^{j,j} = 1 \text{ iff } AUTH(j) \text{ is mad at } AUTH(j) \text{ in } j.\)

Shift Together is a natural consequence of how indexical shift works, since shifting is process of value overwriting - within the scope of an OP_\gamma operator, all of the original context coordinate values are lost. Thus we should not expect to find it violated in any language. This has largely been corroborated in studies of other languages with indexical shift, including Amharic.

---

5In Slavey, only the first-person shifts, thus it must have OP_auth, which rewrites only the author coordinate of the context parameter with that of the index parameter. In other words, only the author becomes identical to the index parameter, but h(earer), t(ime) and w(orld) parameters remain unaltered.

6Anand (2006, 11) takes attitude predicate complements to be sets of centered worlds, which are triples of individuals, worlds, and times, corresponding to the attitude holder’s de se coordinates.
(Schlenker, 2003), Uyghur (Shklovsky & Sudo, 2014), Mishar Tatar (Podobryaev, 2014), Nez Perce (Deal, 2012) and Tsez (Polinsky, 2015), all of which adhere to Shift Together.

3.2 No Intervening Binder

Shift Together so far deals with multiple indexicals within the same speech-act context domain. Anand & Nevins (2004); Anand (2006) generalize this constraint across two speech-context domains, calling it No Intervening Binder, as schematized in (53) and defined in (54):

\[
\begin{align*}
\text{(53)} & \quad * C_A [ \ldots \text{modal} \ C_B \ [ \ldots \text{ind}_1 \ldots \text{ind}_2 ] ] \\
\text{(54)} & \quad \text{No Intervening Binder (Deal, 2017, 19)} \\
& \quad \text{A shiftable indexical ind}_1 \text{ of class } \Psi \text{ cannot pick up reference from a context } c \text{ if there is an intervening context } c' \text{ which another indexical ind}_2 \text{ of class } \Psi \text{ picks up reference from.}
\end{align*}
\]

The constraint in (54) indicates that once an indexical shifts, indexicals in another lower domain cannot “unshift” to depend on the higher shifting context. In order to test the claim, (Anand, 2006, 109) presents the target sentence in (55) for Zazaki, where C@ refers to the utterance context (with slight change on the names).

\[
\begin{align*}
\text{(55)} & \quad [\text{C@ Kemal said to me } C_1 \text{ that Hasan said to you } \text{C}_2 \text{ that I am Rojda’s brother.}] \\
\end{align*}
\]

No Intervening Binder makes the following predictions, as laid out in (Anand, 2006, 109). Suppose you shifts to be dependent on C1, (as opposed to C@). Then, the first prediction is that the embedded I may either be dependent on C1 or C2, but it cannot be dependent on C@. In this sense, the embedded you and I must shift together, provided of course that I itself doesn’t shift further. The second prediction is the inverse: if you doesn’t shift, then I cannot depend on C1 in turn. It may depend on C@ (what you depends on) or C2 (via further shift).

Consider the first prediction, in which case where you shifts. This is illustrated schematically in (56). Then there must be a shifting operator in the CP below Hasan/Kemal said... But this operator serves to erase the values of the context inherited from the speech-act, and hence the lower I cannot refer to the speaker. (56) shows that the prediction is correct (cf. Anand 2006, (313)).

\[
\begin{align*}
\text{(56)} & \quad \begin{array}{ccc}
\text{me} & \text{you} & \text{I} \\
\text{Spkr} & \text{Spkr} & \text{H(asan)} \\
& & \text{K(emal)} \\
& & *\text{Addr} \\
& & *\text{Spkr}
\end{array}
\end{align*}
\]

The second prediction, in which you does not shift, precludes I from depending on C1. It may depend on C@ (what you depends on) or C2 (via further shift). This prediction is also borne out, as shown in (57) (cf. Anand 2006, (316)).
The correct predictions of this constrain are replicated in (58) for Turkish. The first row in (58b) is the reading in which *you* shifts, and the second row is the interpretation in which it does not.

(58)  
<table>
<thead>
<tr>
<th></th>
<th>me</th>
<th>you</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spkr</td>
<td>Addr</td>
<td>H</td>
<td></td>
</tr>
<tr>
<td>*Spkr</td>
<td>*K</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is possible to extend the constraint to sentences that are not discussed in Anand (2006). Indeed, the constraint captures variations of the target sentence, in which pronoun(s) and/or their grammatical function are altered. For instance, in (59) the pronoun in the intermediate clause is now a subject, and *I* in the most deeply embedded clause is replaced with *you*. When *you* does not shift, as represented in the first row of (59b), *I* may not depend on C1, as such it can either pick out the addressee of the C@ or *Hasan* via further shift. On the other hand, in cases where *you* shifts, then the embedded *I* may either be dependent on C1 or C2, but it cannot be dependent on C@. This is represented in the second row of (59b). Note that the speaker reading of *I* is dependent of C1, not C@.

(59)  
<table>
<thead>
<tr>
<th></th>
<th>me</th>
<th>you</th>
<th>you</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spkr</td>
<td>Addr</td>
<td>H</td>
<td></td>
</tr>
<tr>
<td>*Addr</td>
<td>*Spkr</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spkr</td>
<td>Spkr</td>
<td>H</td>
<td></td>
</tr>
<tr>
<td>*Addr</td>
<td>Spkr</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Similarly, the dependency of indexicals on one another in terms of their possible interpretations follows from \textit{No Intervening Binder}.

\begin{equation}
\end{equation}

‘Kemal said to you [that Hasan said to me [that I am Rojda’s brother]].’

\begin{equation}
\text{b. you | me | I}
\end{equation}

\begin{tabular}{ccc}
Addr & Spkr & Spkr \\
    & H   & *K \\
Addr & K   & H \\
    & K   & *Spkr
\end{tabular}

Therefore, the constraints Shift Together and No Intervening Binder constitute the motivation for context-shifting operators that overwrite the context parameter of the interpretation function with the intensional index parameter. The next section introduces the Shift Together violations, both inside the same clause and across multiple clauses.

\section{Shift-Together violations}

As mentioned in section 2, some Turkish speakers permit configurations that do not straightforwardly follow from the constraints in the literature. For instance, Özyıldız (2013) presents the paradigm in (61), which shows a Shift Together violation that is grammatical in a variety of Turkish. In (61), reading (i) involves no shifting. Reading (ii) shifts both pronouns, meaning that it obeys Shift Together and so is acceptable, as predicted. Reading (iv) violates Shift Together and is, unsurprisingly, disallowed. But the interesting data point is reading (iii), which is judged acceptable despite violating Shift Together.

\begin{equation}
\text{(61) Tunç Ayşe’ye [ben sen-i nere-ye ata-yacağ-ım | de-miş?] Tunç Ayşe-DAT [I you-ACC where-DAT appoint-FUT-1SG | say-PST}
\end{equation}

‘Where did Tunç say to Ayşe that... i. I would appoint you?’
\begin{itemize}
  
  ii. he would appoint her?
  iii. he would appoint you?
  iv. *I would appoint her?
\end{itemize}

(Özyıldız, 2013, 12)

The generalization seems to be that the lower pronoun may shift only if the higher pronoun shifts. We can show that it is not a simple asymmetry between 1st and 2nd-person pronouns by considering the sentences in (62) and (63), where the 1st and 2nd-person pronouns have been switched. Here, we see again that the lower pronoun may shift only if the higher pronoun shifts (the equivalent readings (i) and (ii) are left out, but they are both grammatical).
(62) Tunç Ayşe-ye [sen ben-i nere-ye götür-ecek-sin ] de-miş?
    ‘Where did Tunç say to Ayşe that... iii. she would take me?’
    iv. *you would take him?*

(63) Tunç Ayşe-ye [sen ben-i nere-de gör-dü-n ] de-miş?
    Tunç Ayşe-DAT [you I-ACC where-LOC see-PST-2SG ] say-PST
    ‘Where did Tunç say to Ayşe that... iii. she saw me?’
    iv. *you saw her?*

We can also show that this is not simply an asymmetry between subject and non-subject arguments - when the direct and indirect object are both indexical pronouns, we see the same pattern as before, where the lower pronoun may shift only if the higher pronoun shifts:

(64) Tunç Ayşe-ye [patron ben-i san-a nere-de tamış-tir-acak ] de-miş?
    ‘Where did Tunç say to Ayşe that the boss would introduce i. me to you?’
    ii. him to her?
    iii. ?him to you?’
    iv. *me to her?’

This pattern can be stated another way for now: an indexical pronoun may only shift if there is no unshifted pronoun intervening between the indexical pronoun and the DP serving as its referent (where ‘intervene’ may, for now, be interpreted as involving structural or linear intervention). So in (64), senine ‘with you’ may only shift when beni ‘me’ is shifted – this ensures that there is no unshifted indexical pronoun intervening between beni ‘me’ and the DP that serves as its referent, Tunç. It is also important to reiterate once again that these judgments are not shared by all Turkish speakers. These are the judgments of a variety of Turkish speakers, with a permissive possible constellation of properties related to indexical shift - however, I predict that all speakers who allow Shift Together violations should find the (iii) readings of (61-64) more natural than the (iv) readings.

(64) also shows that the presence of an intervening non-indexical pronoun, e.g. a third person pronoun does not interfere with the indexical shifting. In (64), the embedded clause has a null pro that is 3rd person pronoun as evinced by the agreement (or lack thereof) on the verb ‘introduce’. The 3rd pronoun can be co-indexed with the matrix subject Tunç or pick out an independent antecedent from the context. In fact, Anand & Nevins (2004, 21) report a similar observation for Standard Zazaki, as illustrated in (65).

(65) Waxto ke ma D.-de bime, H. mi-ra va ke o ita ame dina
    when that we D.-at were, H.OBL me-at said that he here came world
    ‘When we were in Diyarbekir, Hesen told me he was born {here, in D}.’ (SZ)

Moving onto Mutki Zazaki, we see that the same judgments are given by MZ speakers. Repeating (25) here as (66), we see that 5 out of 7 speakers judge the reading (iii) to be (marginally
for some) grammatical in addition to (i) and (ii). Similar to the observations in Turkish, MZ speakers find the reading (iv) ungrammatical. In (67) 1st and 2nd person pronouns have been switched, again indicating that it is not solely a person asymmetry.

(66) Kemal Leyla-re va [e to ber-a kude ]?
Kemal Leyla-to say.pst.3sg [I.dir 2sg.obl take-1sg where ]
‘Where did Kemalı say to Leylaş that... i. I would take you?’
   ii. heş would take herş?’
   iii. (?heş would take you?’
   iv. ‘I would take herş?’

(67) Kemal Leyla-re va [to mi kude di ]?
Kemal Leyla-to said [2sg.obl I.obl where saw ]
‘Where did Kemalı say to Leylaş that... i. you saw me?’
   ii. sheş saw himş?’
   iii. (?sheş saw me?’
   iv. ‘you saw himş?’

Gündoğdu (2017) reports the availability of the same pattern for Kurmanji Kurdish, and gives the sentence in (68).

(68) Rojbîn-ê ji Siddar ra got ku ez ji te hez di-k-im
Rojbîn-obl p Siddar part say.pst.3sg that I p you love do.prs-1sg
‘Rojbîni said to Siddar that... i. I love you’
   ii. sheş loves himş’
   iii. (?)sheş loves you’
   iv. ‘I love himş?’ (Gündoğdu, 2017, 13)

Until this point, we have looked at examples with one or two indexical pronouns, following the common approach in the relevant literature. The question is what happens, for instance, in a clause with ditransitive verb that contains three pronouns. (69) and (70) provide the judgments for such sentences. In (69), the pronoun inside the theme DP is coreferent with the subject, whereas in (70) the same pronoun is coreferent with the indirect object. Although the judgments are sometimes quite subtle, speakers find a contrast between configurations they deem acceptable vs. unacceptable. (69) and (70) demonstrate that any configuration in which a shifted pronoun is c-commanded by a non-shifted pronoun is deemed ungrammatical.

---

7I elicited judgments from 8 speakers, but left out the judgments of a speaker since they were not systematic within/across sessions.

8Anand (2006, 116-118) discusses Catalan Sign Language as a true exception to Shift-Together, though further research is needed.

9Ümit Atlamaz (p.c.) tells me that a closely related Kurmanji dialect, Adıyaman Kurdish, obeys Shift Together.
(69) Tunç Ayşe-’ye [ben san-a resm-im-i nere-de göster-eceğ-im] de-miș?
Tunç Ayşe-DAT [I you-DAT picture-1POSS-ACC where-DAT show-FUT-1SG] say-PST
‘Where did Tunç say to Ayşe that... i. he would show her his picture?’
ii. I would show you my picture?’
iii. ?he would show you your picture?’
iv. ?he would show her your picture?’
v. *he would show you his picture?’
vi. *I would show her his picture?’
vii. *I would show her your picture?’
viii. *I would show you his picture?’

(70) Tunç Ayşe-’ye [ben san-a resm-in-i nere-de göster-eceğ-im] de-miș?
Tunç Ayşe-DAT [I you-DAT picture-2POSS-ACC where-DAT show-FUT-1SG] say-PST
‘Where did Tunç say to Ayşe that... i. he would show her her picture?’
ii. I would show you your picture?’
iii. (?)-he would show you your picture?’
iv. ?he would show her your picture?’
v. *he would show you her picture?’
vi. *I would show her her picture?’
vii. *I would show her your picture?’
viii. *I would show you her picture?’

The following table in (71) summarizes the results (where N means unshifted, and Y means shifted.) ✓ indicates the grammaticality of the overall sentence, whereas * denotes the ungrammaticality:

<table>
<thead>
<tr>
<th></th>
<th>ind1</th>
<th>ind2</th>
<th>ind3</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>✓</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>✓</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>✓</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>✗</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>✗</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>✗</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>

Based on the results, we can suggest the following generalization:

(72) **No Unshifted Intervener:** An indexical pronoun may only shift if there is no unshifted pronoun intervening between the indexical pronoun and the context operator in the CP domain.

Zazaki has the invariable subject-oriented reflexive *xu ‘self’ (like many other Iranian languages), thus its only antecedent can be the subject of the clause, not an internal argument.10 (73a)

10See Akkuş (2017) for arguments that this is a true reflexive, and not a logophor.
shows this property in a present clause, where the subject bears the direct case; in past clauses as well the reflexive is bound by a subject that bears a morphological case other than the direct case, as shown in (73b).

(73) a. e₁ pırtoki xu₁/s₁ ruşen-a to₂
     1SG.DIR picture self  show.PRES-1SG  2SG.OBL
     ‘I am showing you my picture.’

b. mi₂ pırtoki xu₁/s₁ ruße to₂
     1SG.OBL picture self show.PAST.3SG 2SG.OBL
     ‘I showed you my picture.’

Anand & Nevins (2004); Anand (2006) do not examine the subject-oriented reflexive in SZ; still, (74) shows that reading (iii) is excluded in cases where the reflexive is an argument. This shows that xu has to take on whatever reference its antecedent has.

(74) Kemal (Leyla-re) va [e xu ber-a kudıe ]?
    Kemal (Leyla-to) say.PST.3SG [I.DIR self take-1SG where ]
    ‘Where did Kemal₁ say (to Leyla) that... i. I would take myself?’
    ii. he₁ would take himself₁?’
    iii. *he₁ would take myself?’
    iv. *I would take himself₁?’

In fact, the same interpretive restriction is observed for Turkish speakers who normally do not obey Shift Together. Consider (75). A possible explanation for this restriction is the Condition A effect, as such the reflexive requires an antecedent in its local domain.

(75) Alsu [pro asla kendim-e bak-ma-yacagh-m ] de-di.
    Alsu [ never myself-DAT look-NEG-FUT-1SG ] say-PAST
    ‘Alsu₁ said that ... i. I would never look at myself.’
    ii. she₁ would never look at herself₁.’
    iii. *she₁ would never look at myself.’
    iv. *I would never look at herself₁.’

(76) is the illustration of an embedded clause with a ditransitive verb whose internal argument contains the subject-oriented reflexive. The judgments show that the reflexive picks out whatever reference its antecedent has. Note that the reading (iii) contrasts with its near-minimal pair reading (v) in (69) of the Turkish example.

(76) Kemal Leyla-re va [e to pırtoki xu kudıe ruşen-a ]?
    Kemal Leyla-to said [I.DIR 2SG.OBL picture self where show-1SG ]
    ‘Where did Kemal₁ say to Leyla₀ that... i. I would show you my picture?’
    ii. he₁ would show her₀₀ his₀₀ picture?’
    iii. he₁ would show you his₀₀ picture?’
    iv. *I would show her₀₀ my picture?’

When xu ‘self’ occurs as the recipient, the same grammaticality pattern is attested.
Until this point, we have investigated multiple indexicals contained in the same speech act context. The facts from Turkish, Zazaki and Kurdish demonstrate that Shift Together may be systematically violated in these languages under certain circumstances.

Let us turn to cases in which multiple indexicals occur across two speech-context domains. This will allow us to test No Intervening Binder for the grammars that permit Shift Together violations. (78) contains two speech act contexts with multiple indexicals. The acceptability of readings (i) - (iv), and the unavailability of reading (vi) are predicted by Anand’s (2006) No Intervening Binder. However, crucially, reading (v) is also allowed for the group of speakers who violate Shift Together in cases where multiple indexicals are included in the same speech act context.

(78) John Mary’sen [ben nere-ye git-ti-m | de-di-n ] de-di.
    ‘Where did John_i say that Mary_j said... i. she_j said that he_i went?’
    ii. she_j said that she_j went?’
    iii. you said that I went?’
    iv. you said that you went?’
    v. she_j said that I went?’
    vi. *you said that he_i went?’

(79) is another sentence with the right configuration, this time the position of the pronouns is reversed. Similar to the results for (78), reading (iv) is incorrectly ruled out by No Intervening Binder.

(79) John [Mary ban-a [sen nere-ye git-ti-n ] de-di ] diye
    say-PAST-3SG
    ‘Where did John_i say that Mary_j said ... i. to me that you went?’
    ii. to him_i that he_i went?’
    iii. to me that I went?’
    iv. to him_i that you went?’
    v. *to me that he_i went?’

A similar pattern is observed in Mutki Zazaki, as shown in (80).
The patterns discussed in this section are not straightforwardly captured with the constraints posited by analyses assuming context-shifting operators. Before providing an analysis, it is significant to address an alternative interpretation of the facts, i.e. the possibility that one of the pronouns may be a non-indexical element, e.g. a logophor.

4.1 An alternative interpretation of the facts

The pattern discussed in the previous section has in fact been reported (to my knowledge, at least) in three more languages, Amharic (Anand, 2006), Mishar Tatar (Podobryaev, 2014) and Tamil (Sundaresan, 2017).

(81) John al-ıtazzə-nıñ alö
John NEG.1s-obey-1sO say.PERF.3SM
‘Johnı said heı will not obey me.’
*‘Johnı said I will not obey himı’ (Amharic, Leslau, 1995, 779)

(82) Alsu [pro ber ka{jcan da mi{nə bag-m-a-s-mv{n diep ] bel-ä.
Alsu [ never.NPI I.DAT look.at-NEG-ST-POT-1SG that ] know-IMPF
‘Alsuı knows that sheı would never look at me.’ (Mishar Tatar, Podobryaev, 2014, 86)

(83) Ramanı [tançi,j} kannaadi-læ enn-æ paar-tt-een-mnũ ]
Raman.NOM [ANAPH.NOM mirror-LOC me-ACC see-PST-1SG-COMP ]
öttünde-an
admit-PST.3M.SG
‘Ramanı admitted that heı had seen me in the mirror.’ (Tamil, Sundaresan, 2017, 15)

Both Anand (2006) and Deal (2017) argue that the Shift Together violation in these instances is only apparent. This is because we have a homonymy between a bona fide indexical I and a logophoric pronoun log-I. Anand’s first argument for his claim is that two embedded 2nd person pronouns do not show the same apparent violation:

(84) *John Bill at-ıtazzə-nih alö-w
John Bill NEG.2s-obey-2sO say.PERF.3SM-3sM
‘Johnı said to Billı heı will not obey you.’ (Anand, 2006, 101)

Thus, it appears that shift-together is only violated by 1st person elements. However, he argues that even this suggestion does not hold given the problematic sentences in cases of multiple embedding. For instance, when (81) is embedded under a shifting predicate, there are only two possible readings:
(85) Bill John al-ittazzɔo-ññ  alə alə  
Bill John NEG.1s-obey-1sO say.PERF.3SM say.PERF.3SM  
‘Bill₁ said John₁ said he₁ will not obey me.’  
‘Bill₁ said John₁ said he₁ will not obey him₁.’  
‘*Bill₁ said John₁ said he₁ will not obey me.’  
‘*Bill₁ said John₁ said I will not obey him₁.’  
(Anand, 2006, 102)

Anand (2006) notes that the lack of the final (starred) reading might be expected to follow from whatever explains the unambiguity of (81), but the lack of the third reading is surprising if 1st person indexicals in Amharic do not obey shift-together.

Deal (2017) suggests that the same explanation might extend to Mishar Tatar, thus logophoric pronouns might be the confounding factor. Logophoric pronouns and indexical pronouns pattern alike in that both classes of elements may refer to the attitude holder of in an embedded context, and they are typically interpreted de se (Schlenker 2003, Anand 2006, though cf. Pearson 2012, 2015). Deal (2017) proposes several diagnostics to distinguish logophors from indexicals to contend that in apparent violations of shift-together, we are dealing with a homonymy between an indexical and a logophoric pronoun. The first difference between a logophor and an indexical is that the former imposes conditions on what features its antecedent may have. Typically logophors require their antecedents to be 3rd person (or even 3rd person singular). This is illustrated in (86) for Ewe logophor yè.

(86) a. Kofi xɔse [be yè nyi sukuvi nyoe de ].  
Kofi believe [C LOG COP student good ART ]  
‘Kofi₁ believes that he₁ is a good student.’

b. * {M/o } xɔse [be yè nyi sukuvi nyoe de ].  
{1SG/2SG } believe [C LOG COP student good ART ]  
Intended: ‘{I/you} believe that {I am / you are} a good student.’ (Pearson, 2015, 110)

Deal contends that it would be surprising if yè were a shifty indexical, given the absence of any formal connection between the main clause “antecedent” and the embedded indexical in the theory defended in e.g., Anand & Nevins (2004); Deal (2017). This is because for this theory, the presence of a shifty operator depends only on the selectional properties of the verb; the reference of an embedded indexical depends only on the presence of the corresponding operator.

When this criterion is applied to the languages discussed in the present paper, we see that Turkish, Zazaki, Kurdish indexicals (including embedded agreement) are not sensitive to the person of the main-clause antecedent. This is represented for Turkish (87) and Zazaki (88), respectively.

(87) a. Kemal [pro oraya git-ti-m ] de-di.  
Kemal [ there go-PAST-1SG ] say-PAST  
‘Kemal₁ said {he₁, I} went there.’
Another illustration comes from Turkish, (89), and Kurdish (90), in which the 2nd person pronoun acts as the antecedent for the embedded pronoun, which would be unexpected if the embedded pronoun was a logophor.

(89) **A:** Dün okul-a git-ti-m.  
  yesterday school-DAT go-PAST-1SG  
  ‘I went to school yesterday.’

**B:** (Sen) [pro düm nereye git-ti-m ] de-di-n.  
  (you) [ yesterday where go-PAST-1SG ] say-PAST-2SG  
  ‘Where did you say that you went yesterday?’  
  (Turkish)

(90) te got ku ez nexweş-im  
  2SG.OBL said.3SG that 1SG.DIR sick-COP.1SG  
  ‘You said that {I am, you are} sick.’  
  (MK)

The example in (91) provides a testing ground for the claim that in apparent shift-together violations, the higher pronoun is a logophor, whereas the lower one is a garden-variety indexical. Therefore, we would have an instance of homonymy. The availability of the readings (ii) and (iii) demonstrates that this cannot be the case.

(91) Sen Kemal’e [pro araba-m-ı nere-den al-açağ-im ] de-di-n?  
  you Kemal-DAT [1SG car-1SG.POSS-ACC where-ABL pick.up-FUT-1SG ] say-PST-2SG  
  Where did you say to Kemal that ...  
  i. I would pick up my car from?’  
  ii. you_i would pick up your_i car from?’  
  iii. (?)you_i would pick up my car from?’  
  iv. *I would pick up your_i car from?’

We observe the same pattern in MZ, for which only the crucial reading (iii) is provided.

(92) ti Kemal-re va [pro pirtoki mi kude vin-e ]?  
  you.DIR Kemal-to said.3SG [ picture 1SG.OBL where see-1SG ]  
  iii. ‘Where did you say to Kemal that I see my picture?’

Secondly, Anand (2006) and Deal (2017) suggest that the apparent violation of Principle B in (93) and (94) would also follow from the assumption that the two pronouns belong to different
classes. Therefore, it is predicted that null logophors controlling the first person agreement may share a clause with ordinary overt first person pronouns, provided that the latter controls no agreement.

(93) John al-ittazzə-ññ alı
   John NEG.1s-obey-1sO say.PERF.3SM
   ‘Johnı said heı would not obey me.’ (Amharic, Leslau, 1995, 779)

   Alsu [never.NPI I.DAT look.at-NEG-ST-POT-1SG that] know-IMPF
   ‘Alsuı knows that sheı would never look at me.’ (Mishar Tatar, Podobryaev, 2014, 86)

As such, Deal (2017) argues that Podobryaev (2014) is in the wrong in his treatment of null subjects in clauses like (94) as true 1st person pronouns, and in turn his claim that Mishar Tatar does obey Shift Together is unwarranted. The apparent Shift Together violations are possible if one pronoun is null, and therefore a member of the class of logophors in this language, while the other pronoun is overt, and therefore a member of the class of unshiftable indexical pronouns. However, such examples do not undermine Anand & Nevins’s (2004) analysis as, according to the theory put forward by Anand (2006) and Deal (2017), these two classes of pronouns are assigned reference by a distinct mechanism. If Turkish, Zazaki and Kurdish have the same confounding factor as Mishar Tatar or Amharic, then the expectation is that co-occurrence of a (null) logophor and an indexical pronoun of the same person should be possible. This turns out to be incorrect, as shown in (95) for Turkish, (96) for MZ and (97) for MK.11 Note that for both languages (for Muş Kurdish as well) the sentences become grammatical in their (b) versions with a reflexive, in which case only two readings are possible.

(95) a. *Alsu [pro asla ban-a bak-m-a-yacağ-im ] de-di.
   Alsu [never I.DAT look-NEG-FUT-1SG ] say-PAST
   Intended: ‘Alsuı said that sheı would never look at me.’

b. Alsu [pro asla kendı-m-e bak-m-a-yacağ-im ] de-di.
   Alsuı said that ...
   i. ‘I would never look at myself.’
   ii. ‘sheı would never look at herselfı.’
   iii. ‘*sheı would never look at myself.’
   iv. ‘*I would never look at herselfı.’

(96) a. *Kemal va [pro mi ni-vîn-a ].
   Kemal said.3SG [ LOBL NEG-see-1SG ]
   Intended: ‘Kemalı said that heı does not see me.’

b. Kemal va [pro xu ni-vîn-a ].
   Kemal said.3SG [ self NEG-see-1SG ]
   ‘Kemalı said that...
   i. I would never see myself
   ii. heı would never see himselfı.’
   iii. ‘*heı would never see myself
   iv. ‘*I would never see himselfı’

11Expectedly, the ungrammaticality in Turkish holds for speakers obeying Shift Together as well.
Anand (2006) suggests that another way to distinguish logophors from shifty indexicals is via locality. For logophors, the presence of a formal link to the binder or antecedent makes it possible to impose locality conditions on logophoric binding. Deal (2017) argues that this consideration is able to explain the contrast between (94) and (98). The latter lacks a reading in which pro is bound long-distance, which would follow from its logophoric nature.

Replicating the configuration in Turkish reveals that the locality condition is violated. The relevant reading is provided in (99).

MZ and MK show the same pattern, as illustrated in (100) and (101), respectively.

This section has demonstrated the existence of Shift-Together violations in the same speech-context as well as across two speech-context domains. Furthermore, I have entertained an alternative explanation, i.e. the homonymy between a logophor and an indexical, and suggested that such an explanation cannot be extended to MZ, MK or Turkish.
5 Proposal: *Undo Operator (Un-OP)*

This section proposes an analysis that captures the available readings for grammars violating Shift Together. The analysis takes Deal’s (2017) definition of *Monstrous Function Application* as a basis, and makes some modifications on it in addition to providing a definition for another operator, call it *un-OP*, which undoes the effects of the shifty operator.

Following Anand & Nevins (2004), Deal (2017), I assume that the attitude verb quantifies over the indices, as represented in (102). OP is also in the scope of the attitudinal quantification, and its function is to overwrite the context parameter of interpretation.

\[
(102) \quad \langle \text{TELL } \alpha \rangle^{c,i} = \lambda x. \forall i' \in R_{\text{tell}}(x,i) \langle \alpha \rangle^{c,i'}
\]

where \( i' \in R_{\text{tell}}(x,i) \) iff
   a. \( w_{i'} \) is compatible with what \( x \) says in \( w_i \)
   b. \( \text{auth}_{i'} \) is an individual in \( w_{i'} \) that \( x \) identifies in \( w_i \) as a counterpart of herself
   c. \( \text{addressee}_{i'} \) is an individual in \( w_{i'} \) that \( x \) identifies in \( w_i \) as a counterpart of her addressee
   d. \( \text{loc}_{i'} \) is a location in \( w_{i'} \) that \( x \) identifies in \( w_i \) as a counterpart of her spatial location
   e. \( \text{time}_{i'} \) is a time in \( w_{i'} \) that \( x \) identifies in \( w_i \) as a counterpart of her temporal location

(Deal, 2017, 27)\(^{12}\)

We can represent the intuition expressed for the relevant verbs of communication or attitude verbs in (102) in a more function-like schema in (103). The basic idea is that the attitude verb introduces the event \( i \), which contains information about the participants of that event. For instance, the sentence *John said to Mary ...* in (103b) has its own speaker and addressee pair for the original utterance context represented as \( C_{@} \). However, ‘say’ evaluates the participants of the event in \( C_1 \), treats as *John* as the speaker and *Mary* as the addressee of that event. This is illustrated in (103b).\(^{13}\)

\[
(103) \quad \text{a. } C_{@} \text{ John } C_1 \text{ said to Mary } \ldots \\
\quad \text{b. } i = \begin{cases} 1 \rightarrow J \\ 2 \rightarrow M \end{cases}
\]

Note that Deal’s (2017) *Monstrous Function Application* in (104b), being a variant of Intensional Functional Application, type-raises the argument of the OP, i.e. the complement clause, from type \( t \) to \( \langle \kappa, \kappa t \rangle \). As such, the complement ends up being an argument of the right type for OP in (104a).

\[
(104) \quad \text{a. } \langle \text{OP}_\gamma \rangle^{c,i} = \lambda p \in D_{\langle \kappa, \kappa t \rangle} \cdot p(i)(i) \\
\quad \text{b. } \text{Monstrous Function Application} \\
\quad \text{If } \alpha \text{ is a branching node and } \{ \beta, \gamma \} \text{ the set of its daughters, then for any context } c \text{ and index } i: \text{ if } [\beta]^{c,i} \text{ is a function whose domain contains } \lambda \epsilon'. \lambda i'. [\gamma]^{\epsilon',i'}, \text{ then } [\alpha]^{c,i} \\
\quad = [\beta]^{c,i}(\lambda \epsilon'. \lambda i'. [\gamma]^{\epsilon',i'})
\]

\(^{12}\)In fact, Deal slightly modifies this in order to account for *de re* readings in indexical shift. I leave that aside since the languages under consideration require *de se* interpretation with indexical shift.

\(^{13}\)Following the common tradition (e.g. Baker 2008), I use 1 for *speaker*, and 2 for *addressee*.
Given this background, I propose that OP has access to a pair of contexts rather than one, \( c = \langle \text{new, old} \rangle \), in which \textit{new} encodes the most recent context, and \textit{old} refers to some previous context. Accordingly, \( c \) will be of type \( \langle \kappa, \kappa \rangle \). Now let us define a function that takes a pair and returns the first member of the pair, call it \( \pi_1 \). For instance \( \pi_1 \) of \( \langle a, b \rangle \) returns \( a \), as illustrated in (105).14 \( \pi_1 \) is a function from the set of all pairs to a set, \( S \times S \rightarrow S \). When provided with a pair, it returns the first member.

\[
\pi_1(\langle a, b \rangle) = a
\]

(105) provides a more concrete example, regarding how the reference of a pronoun such as \texttt{you} is established. (106a) is a fairly standard specification of the 2nd person, which states that the reference of the individual denoted by \texttt{you} is directly determined by the context. In the current system, in order to assign a referent to the 2nd person pronoun, the function \( \pi_1 \) combines with \( c \), which refers to the pair, and \( \pi_1 \) of \( c \) is then the first member of the pair, i.e. the most recent context. Afterwards, 2 is chosen from inside the first member, resulting in the addressee reference for \texttt{you}.

\[
\begin{align*}
\text{a. } \left[ \text{you} \right]^{c;i} & = c(2) \\
\text{b. } \left[ \text{you} \right]^{c;i} & = \pi_1(c)(2)
\end{align*}
\]

Note that pronouns are still of type \( e \). As mentioned above, \( \pi_1: S \times S \rightarrow S \), and \( \kappa \) denotes \( \mathbb{N} \rightarrow \mathbb{D}_e \). Given the conceptualization of \( c \) here, it is of type \( \kappa \times \kappa \), i.e. \( (\mathbb{N} \rightarrow \mathbb{D}_e) \times (\mathbb{N} \rightarrow \mathbb{D}_e) \). Accordingly, \( \pi_1(c) \) is of type \( \mathbb{N} \rightarrow \mathbb{D}_e \), and \( (\pi_1(c))(2) \) is of type \( \mathbb{D}_e \).

Moreover, the modified definition of OP is as in (107), in which the type of OP is \( \langle \langle \kappa \times \kappa, \langle \kappa, t \rangle \rangle, t \rangle \). This paper differs from Anand (2006) and Deal (2017), who take indices and contexts to have the same structure, and represent both as being of type \( \kappa \). Given that the type of context is altered, the first argument of \( \lambda p \) needs to be changed as well.

\[
\text{Function of OP}
\]

\[
\begin{align*}
\text{new} & \rightarrow \text{old} \\
i & \rightarrow \text{new}
\end{align*}
\]

14Similarly, the function \( \pi_2 \) would return the second member of the pair.
Next, we define the novel operator, call it \textit{un-OP}, whose function is to overwrite the most recent context with the old context. Essentially, it takes the derivation one step backward, since \( c \) stores only one old context.

\[
(109) \quad \text{a. } \left[ \text{un-OP} \right]^{c;i} = \lambda p \in D_{(c, x, \phi)}. p(\langle \pi_2(c), \pi_2(c) \rangle)(i)
\]

\[
\text{b. } \text{Function of un-OP}
\begin{align*}
\text{old} & \rightarrow \text{new}
\end{align*}
\]

As seen from the possible readings in (71), \([\text{un-OP}]\) is polymorphic, in the sense that it can combine with elements of different types, e.g. \( t \), just like the regular OP, and \( \langle s, t \rangle \). This is indicated via the placeholder \( \phi \). This treats \textit{un-OP} as parametric, in that languages differ in which position they allow it to syntactically attach to.\(^{15}\) The tree (110) represents the two \( \langle \text{st} \rangle \) positions to which \textit{un-OP} attaches to. Note that (110) uses a high-applicative structure for double object constructions following Anagnostopoulou (2003); Bruening (2010); Georgala (2012); Legate (2014); also Larson (2010). In reference to the available readings in (71), when it combines with VP, it corresponds to a reading in which the direct object is unshifted, whereas the higher indexicals, subject and indirect object are shifted. When \textit{un-OP} combines with Appl on the other hand, it corresponds to the reading in which both the indirect and direct object are unshifted, whereas the subject is shifted.

\[
(110)
\]

\[
\langle e, \text{st} \rangle
\]

\[
\text{Voice}
\]

\[
\langle \text{st} \rangle
\]

\[
\text{un-OP}
\]

\[
\langle \text{st} \rangle
\]

\[
\text{ApplP}
\]

\[
\langle e, \text{st} \rangle
\]

\[
\text{Appl'}
\]

\[
\langle \text{st} \rangle
\]

\[
\langle \text{st}, \langle e, \langle \text{st} \rangle \rangle \rangle
\]

\[
\text{Appl}
\]

\[
\langle \text{st} \rangle
\]

\[
\text{un-OP}
\]

\[
\langle \text{st} \rangle
\]

\[
\text{VP}
\]

\[
\langle e, \text{st} \rangle
\]

\[
\text{V}
\]

\[
e
\]

\[
\text{ind}_2
\]

The denotations of the terminal nodes are as follows:

\[
(111) \quad \text{a. } \left[ V_{\text{show}} \right] = \lambda x e. \lambda e s. \text{show}(x, e)
\]

\(^{15}\) Another option would be to say that there are two kinds of \textit{un-OP}, (i) one that combines with elements of type \( t \), and (ii) the other with \( \langle s, t \rangle \). This would also have an entailment relation between two kinds, so that if a language has (ii), it must have (i).
b. $[[\text{Appl}]] = \lambda P_{(s,t)} \cdot \lambda y_e. \lambda e_s. P(e) \wedge \text{BENEFACTIVE}(y, e)$

c. $[[\text{Voice}]] = \lambda x_e. \lambda e_s. \text{AGENT}(x, e)$

In principle, multiple applications of $un-OP$ inside a clause is possible, however, it makes no difference, as shown in (112), thus leads to redundancy. Therefore, I assume that like its OP counterpart, one $un-OP$ is triggered per clause due to a sort of economy constraint. (112) illustrates the point with a simple schema, in which the context starts as the pair containing new and old. When the first $un-OP$ applies, it overwrites new with old, and therefore the context contains \langle old, old \rangle at that point. A second application of $un-OP$ makes no difference, unless OP applies and thus copies $i$ into the first member of $c$.

\[
\begin{array}{c|c}
\hline
& c = \langle \text{new}, \text{old} \rangle \\
\hline
\text{un-OP}_1 & \langle \text{old, old} \rangle \\
\text{un-OP}_2 & \langle \text{old, old} \rangle \\
\text{OP} & \langle i, \text{old} \rangle \\
\text{un-OP} & \langle \text{old, old} \rangle \\
\hline
\end{array}
\]

(113) schematizes the logically possible position in which the $un-OP$ can occur under the assumption that OP occupies a left periphery position of each embedded clause. Given that $un-OP$ may occur once per clause, logically it should generate eight interpretations. (113a) is the interpretation where no $un-OP$ is introduced, therefore given the workings of the system proposed here, we derive a reading where both $you$ and $I$ refer to the individual Mary. The issue of multiple $un-OP$s is clearly seen in (113), where (113g) and (113h) which have multiple $un-OP$s in the same clause end up yielding the same interpretations as some other derivations with a single $un-OP$ in a clause. That’s why, (113g) equals (113c), and (113h) equals (113f).

\[
\begin{array}{l}
\text{(113)} \\
\text{John said to Mary} \\
\text{\quad op[ you \quad said \quad op[ I \quad went ]]}
\end{array}
\]

The derivation of the interpretation in (113a) is schematized in (114), and the relevant steps of the derivation are illustrated in (115c). The first step is the utterance context, in which 1 picks out the speaker, and 2 the addressee. At this point, new and old are identical, and suppose

---

16 The following rough schema demonstrates that multiple application of OP within the same clause is redundant unless a new verb-of-saying, thus a new clause, is introduced. This creates a new speech-context, and updates $i$, thus allows the new member of $c$ to be changed when another OP is introduced.

\[
\begin{array}{c|c}
\hline
\text{OP}_1 & \langle c_0, c_0 \rangle \\
\text{OP}_2 & \langle c_1, c_0 \rangle \\
\hline
\end{array}
\]
that \( i \) is not established since the saying event has not been accessed yet (or it has the same participants of the utterance context, which makes no difference for the analysis).

\[(114)\]

![Diagram of the derivation process](image)

The next step in the derivation is the point where the verb-of-saying is reached, and thus \( i \) is introduced reflecting the relevant event participants. Consider \((115b)\). When \( \text{OP} \) is introduced, \( \text{new} \) is copied into \( \text{old} \), which at this point makes no difference since both elements are the same. Secondly, \( i \) is copied into \( \text{new} \), as shown in \((115c)\). The indexical \( \text{you} \) picks out its referent from the first member of \( c \), which is \( \text{Mary} \). Therefore, we have the first instance of indexical shift. In Step 4, we have another verb-of-saying, which creates a new event. In this event then, the speaker is \( M \), and the addressee is left unspecified (expressed as \( \text{Adr}_i \) here). This step is illustrated in \((115d)\). In Step 5, another \( \text{OP} \) is introduced, which yields the information in \((115e)\). Finally, \( I \) gets its reference from the speaker of the most recent context, which is \( \text{Mary} \).

\[(115)\]

a. **Step 1**
\[
c = \left\{ \begin{array}{l}
1 \rightarrow \text{Spk} \\
2 \rightarrow \text{Adr}
\end{array} \right\} \left\{ \begin{array}{l}
1 \rightarrow \text{Spk} \\
2 \rightarrow \text{Adr}
\end{array} \right\}
\]
\[
i =
\]

b. **Step 2**
\[
c = \left\{ \begin{array}{l}
1 \rightarrow \text{Spk} \\
2 \rightarrow \text{Adr}
\end{array} \right\} \left\{ \begin{array}{l}
1 \rightarrow \text{Spk} \\
2 \rightarrow \text{Adr}
\end{array} \right\}
\]
\[
i = \left\{ \begin{array}{l}
1 \rightarrow J \\
2 \rightarrow M
\end{array} \right\}
\]

c. **Step 3**
\[
c = \left\{ \begin{array}{l}
1 \rightarrow J \\
2 \rightarrow M
\end{array} \right\} \left\{ \begin{array}{l}
1 \rightarrow \text{Spk} \\
2 \rightarrow \text{Adr}
\end{array} \right\}
\]
\[
i = \left\{ \begin{array}{l}
1 \rightarrow J \\
2 \rightarrow M
\end{array} \right\}
\]
d. **Step 4**

\[ c = \langle \{ 1 \rightarrow J \}, \{ 1 \rightarrow \text{Spk} \}, \{ 2 \rightarrow \text{Adr} \} \rangle \]

\[ i = \{ 1 \rightarrow M \}
\]

\[ 2 \rightarrow \text{Adr}_i \]

e. **Step 5**

\[ c = \langle \{ 1 \rightarrow M \}, \{ 1 \rightarrow J \}, \{ 2 \rightarrow \text{Adr}_i \} \rangle \]

\[ i = \{ 1 \rightarrow M \}
\]

\[ 2 \rightarrow \text{Adr}_i \]

Next, I illustrate the derivation of the reading in (113d), which is not predicted by a system that lacks un-OP. Similarly, the derivation is schematized in (116b), and sketched roughly in (117).

(116) a. **ZAZAKI**: John\(_i\) said to Mary\(_k\) that you\(_k\) said that I left.

b. \[ \text{John} \quad \text{said} \quad \text{to Mary} \]

\[ \quad \text{OP} \]

\[ \quad \text{you}_2 \quad \text{un-OP} \quad \text{said} \]

\[ \quad \text{OP} \quad \text{un-OP} \quad \text{I} \quad \text{left} \]

(117) a. **Step 1**: Top node, i.e. beginning of the utterance

\[ c = \langle \{ 1 \rightarrow \text{Spk} \}, \{ 1 \rightarrow \text{Spk} \}, \{ 2 \rightarrow \text{Adr} \}, \{ 2 \rightarrow \text{Adr} \} \rangle \]

\[ i = \]

b. **Step 2**: “say” introduces \( i \) with its participants.

\[ c = \langle \{ 1 \rightarrow \text{Spk} \}, \{ 1 \rightarrow \text{Spk} \}, \{ 2 \rightarrow \text{Adr} \}, \{ 2 \rightarrow \text{Adr} \} \rangle \]

\[ i = \{ 1 \rightarrow J \}
\]

\[ 2 \rightarrow M \]
c. **Step 3: OP**

\[
c = \left\{ \begin{array}{l}
1 \rightarrow J \\
2 \rightarrow M
\end{array} \right\}, \left\{ \begin{array}{l}
1 \rightarrow Spk \\
2 \rightarrow Adr
\end{array} \right\}
\]

\[
i = \left\{ \begin{array}{l}
1 \rightarrow J \\
2 \rightarrow M
\end{array} \right\}
\]

The indexical *you* receives its reference as *Mary*.

d. **Step 4: un-OP**

\[
c = \left\{ \begin{array}{l}
1 \rightarrow Spk \\
2 \rightarrow Adr
\end{array} \right\}, \left\{ \begin{array}{l}
1 \rightarrow Spk \\
2 \rightarrow Adr
\end{array} \right\}
\]

\[
i = \left\{ \begin{array}{l}
1 \rightarrow M \\
2 \rightarrow Adr_i
\end{array} \right\}
\]

e. **Step 5:** “say” updates \(i\), which remains as is.

\[
c = \left\{ \begin{array}{l}
1 \rightarrow Spk \\
2 \rightarrow Adr
\end{array} \right\}, \left\{ \begin{array}{l}
1 \rightarrow Spk \\
2 \rightarrow Adr
\end{array} \right\}
\]

\[
i = \left\{ \begin{array}{l}
1 \rightarrow M \\
2 \rightarrow Adr_i
\end{array} \right\}
\]

f. **Step 6: OP**

\[
c = \left\{ \begin{array}{l}
1 \rightarrow M \\
2 \rightarrow Adr_i
\end{array} \right\}, \left\{ \begin{array}{l}
1 \rightarrow Spk \\
2 \rightarrow Adr
\end{array} \right\}
\]

\[
i = \left\{ \begin{array}{l}
1 \rightarrow M \\
2 \rightarrow Adr_i
\end{array} \right\}
\]

g. **Step 7: un-OP**

\[
c = \left\{ \begin{array}{l}
1 \rightarrow Spk \\
2 \rightarrow Adr
\end{array} \right\}, \left\{ \begin{array}{l}
1 \rightarrow Spk \\
2 \rightarrow Adr
\end{array} \right\}
\]

\[
i = \left\{ \begin{array}{l}
1 \rightarrow M \\
2 \rightarrow Adr_i
\end{array} \right\}
\]

The indexical *I* receives its reference as the speaker from the first member of the \(c\).

Note that the representation in (113) assumes that OP is introduced in the CP layer of each \(c\)-commanding verb-of-saying or attitude verb. This assumption differs from Anand (2006); Deal (2017), in which OP can be optionally introduced, whereby different readings are captured. For instance, in the target sentence Anand (2006) employs, repeated below as (118), in cases where *you* does not shift as in (118b), the reference of *I* may depend on C@ (what *you* depends on), thus no OP is introduced at all, or C2 (via an OP in the CP domain of the most embedded clause). In the former scenario, *I* picks out the speaker, whereas in the latter it gets its reference from Hasan.

(118) a. C@ Kemal C1 said to me that Hasan said C2 to you that I am Rojda’s brother.
A similar optionality is observed for cases where you shifts, illustrated in (118c). Suppose you shifts to be dependent on C1 via an OP, the embedded I may either be dependent on C1 or C2, based on the presence or absence of another OP in the next embedded clause.

(119) a. C@ Leyla C1 said to Ryan that Mike said C2 to you that Hasan saw me.

   b. Optional OP                Obligatory OP
       i. ⟨c₀, c₀⟩                 ⟨c₀, c₀⟩
       ii. ⟨c₁, c₀⟩                ⟨c₁, c₀⟩
       iii. ⟨c₁, c₀⟩               ⟨c₂, c₁⟩
       iv. ⟨c₀, c₀⟩                ⟨c₁, c₁⟩

(ii) is the stage of the derivation in which OP is introduced in both approaches, and you gets its reference from Ryan. (iii) is the point where the two approaches differ. Assume that for the optional OP, the second verb-of-saying does not introduce another OP, whereas it does for the obligatory OP. According to the present system, c remains as ⟨c₁, c₀⟩ for the former approach, whereas it is updated to become ⟨c₂, c₁⟩ due to the second OP for the latter strategy. Finally, assume that un-OP applies in both cases at the VP level, i.e. ⟨s,t⟩ before I gets a value. At this point, optional OP has c = ⟨c₀, c₀⟩, therefore I can only refer to the speaker of the utterance context, contrary to fact. On the other hand, ⟨c₁, c₁⟩ allows I to be picked out by Leyla, but not the speaker, since c₀ is not included in c.¹⁷

Note that the only difference between (119a) and other instances investigated both in the present paper and previous literature is that in (119a), I is in the object position, whereas in other sentences, including (118a), it is in the subject position. Interestingly, the judgments for (119a) are the same for group of speakers obeying Shift-Together. I lack an explanation for this contrast and leave it for future research.

6 An Alternative Account: Deal (2012)

In her discussion of Nez Perce indexicals, Deal (2012) adopts Anand & Nevins’s (2004) analysis of covert context-shifting operators, which occupy the left edges of the clauses that attitude verbs embed (see also Sudo (2012); Shklovsky & Sudo (2014); Podobryaev (2014, i.a.)) This

¹⁷Both approaches are able to derive the reading in which I refers to Mike. The optional OP does so when the second OP is introduced, and no un-OP is triggered, as mentioned above for other instances. For the obligatory OP, the same reading is derived if un-OP is not triggered, thus the final c = ⟨c₂, c₁⟩.
makes for a syntactic difference between embedded clauses with indexicals and those without, as represented in (120).

(120) a. Syntax of a shifty report

[ VP
  say 
  OP CP ]

b. Syntax of a non-shifty report

[ VP
  say CP ]

Deal shows that person shift and locative shift stand in an asymmetrical relationship. Locative shift entails person shift, but person shift does not entail locative shift. For instance, (121) is an example where person shift takes place without locative shift.

(121) Context: my friend is calling me on his cellphone and describing his location. He is trying to make it to Lapwai, but he is lost.

pro subj hi-hi-ce-∅ [ pro subj kine ∅-paay-ca-∅ ] met’u
pro 3SUBJ-say-IMPERF-PRES [ pro here 1SUBJ-arrive-IMPERF-PRES ] but
weet’u pro subj hi-paay-ca-∅ kine
not pro 3SUBJ-arrive-IMPERF-PRES here

colloquial: ‘He says he is arriving here, but he is not arriving here.’
literal: ‘He i says I i am arriving here k, but he i is not arriving here k.’ (Deal, 2012, 9)

This makes for a sharp contrast with cases where locative shift happens without person shift. Such examples are not well-formed. (122) illustrates an example, in which the embedded clause contains non-shifty 1st person, and therefore it is not possible to add in locative indexical kine ‘here’ on a shifty reading although normally locative indexicals can shift in Nez Perce:

(122) # pay’s Harold hi-neki-se-∅ [pro subj ∅-wees kine
maybe Harold 3SUBJ-think-IMPERF-PRES [pro 1SUBJ-be-PRES here
Clarkston-pa ]
Clarkston-LOC ]

Intended: ‘Maybe Harold thinks i that I am here k in Clarkson.’
Consultant: ‘You could only say this if you were in Clarkson.’ (Deal, 2012, 10)

Deal suggests that this asymmetry calls for distinguishing person shift from locative shift, and postulates two operators, OP_{pers} and OP_{loc}, which can in principle co-occur within a clause. She treats the person-locative asymmetry as an effect of syntactic selection. OP_{loc} requires that its sister be headed by OP_{pers}, but (as is typical in syntactic selection) the converse does not hold. Therefore, Deal (2012) argues that attitude reports may thus have only the following three syntactic forms in Nez Perce.

(123) a. 

[ V CP ]

b. 

[ V OP_{pers} CP ]

c. 

[ V OP_{loc} OP_{pers} CP ]
In fact, Deal (2016) provides a more elaborate structure distinguishing between 2nd person and 1st person indexicals as well, thus the configuration in (124).

(124)

Some remarks are due for this approach. Note that conceptually, positing separate operators for each specific indexical is very similar to the binding approach although Deal (2012, 2016) adopts Anand & Nevins’s (2004) theory, which argues against it. Secondly, (Park, 2015, (29)) shows that person indexicals and adverbial indexicals do not have to shift together in Korean, as shown in (125). The reading (b) is not predicted in Deal’s (2012) system. Deal (2017) invokes the notion of *lexical bundling* in order to capture the crosslinguistic variation regarding how many parameters of context a single operator shifts.

(125) CONTEXT: John and Mary are having a conversation in Seoul.


Tom-NOM New York-at I-NOM here-at be-born-C said

‘Lit: ‘Tom said in New York that I was born here.’

a. ‘I’ = John, ‘here’ = Seoul
b. ‘I’ = John, ‘here’ = New York

c. ‘I’ = Tom, ‘here’ = Seoul

d. ‘I’ = Tom, ‘here’ = New York

Moreover, in Deal’s (2012) system as is, all the job is done through the hierarchical ordering between different operators, thus the relative positioning of indexical inside the embedded clause are predicted to play no role. However, as we have seen in Turkish, Mutki Zazaki and Muş Kurdish, this cannot be the whole picture since an unshifted higher indexical prevents the shifting of a lower one.

7 Conclusion

In this paper, I have provided novel data from shifting indexicals in Mutki Zazaki, Muş Kurdish, and one variety of Turkish to demonstrate the necessity of not only the shifty operator OP of Anand & Nevins (2004), Deal (2017), but also an operator that undoes its effects, un-OP. Empirically, I have demonstrated that these three languages allow violations of Shift Together (Anand & Nevins, 2004), the principle that states that all indexicals within a speech-context domain must pick up reference from the same context, but that these violations are allowed only if no unshifted indexical intervenes between the shifted indexical and the shifty operator OP, located in the CP domain.

I have examined the existing pattern in light of a logophoric account proposed by Anand (2006) and Deal (2017), which suggests that Shift Together violations are only apparent. Instead, the pattern results from a homonymy of a logophor and an indexical. I contend that the
arguments Anand (2006) and Deal (2017) make for Amharic and Mishar Tatar, respectively, do not carry over to the languages investigated in this paper. Therefore, I have proposed the operator un-OP and given a denotation for it.

I have also touched upon the optionality vs. obligatoriness of OP, i.e. whether it is obligatorily triggered in the complement of each verb-of-saying. Despite lacking an explanation for it, I demonstrate that the latter seems to fare better in capturing the data.

References


