

On Indexicals in Zazaki Reported Speech

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1. Outline of the Talk

This talk concerns the interpretation of indexical expressions in Zazaki.¹

- Indexical expressions (e.g., **I**, **you**, **tomorrow**) are characterized by their *sensitivity to the context of utterance* and *insensitivity to intensional environments*.
- The latter property led David Kaplan to decree that context-shifting operations are not licensed in natural language.
- Kaplan’s postulation has recently enjoyed renewed criticism based on apparent cases of indexical shift under verbs-of-saying in Aghem (Hyman, 1979), Navajo (Speas, 1999), and Amharic (Schlenker, 2003).
- This paper introduces new data from Zazaki suggesting that the shifting of indexicals is subject to the following constraint:

- (1) All indexicals within a *speech-context domain* must be bound by the same context.²

- (1) is surprising for existing proposals for shifted indexicals (Schlenker (2003), Stechow (2002)). We argue that the Zazaki data presents true evidence for the existence in natural language of context-shifting operations, which overwrite the context parameter of the interpretation function with the intensional index parameter:

$$\llbracket \text{OP}[\alpha] \rrbracket^{c,i} = \llbracket \alpha \rrbracket^{i,i}.$$

- This approach makes different predictions from Schlenker’s and von Stechow’s proposals with regard to the possibilities of indexical interpretation under two context-shifting operators. We demonstrate that this is true, at least in Zazaki.

¹Zazaki, also known as Dimili, is an Indo-Iranian language spoken mostly in southeast Anatolia, the Turkish section of Kurdistan, by 2-4 million ethnic Kurds. The data reported here was elicited primarily from Gulcem and Huseyin Aktas, Zaza consultants in their 30s-40s from the city of Muş; judgments have also been informally replicated with a few Zaza in the Washington, D.C. area: Dara Pasori, Dawin Ebe, and Ahmet and Betül Yusufhanoglu from Dersim.

²A speech-context domain is the scope of a verb-of-saying.

Roadmap of the talk:

1. Introduce formal tools for indexicality and Kaplan’s prohibition.
2. Present the Zazaki data for the constraint in (1).
3. Consider existing proposals, present a context-overwriting account; consider double embedding data.

2. Introduction to Indexicality

The Puzzle: certain expressions (**I, you, now, tomorrow, yesterday, here**) are context-dependent, but are not affected by other quantificational operators. Unhelpfully, they are called “indexicals” (because they are “indexical on the context of utterance”).

- (2)
 - a. **I**: the speaker of *this* utterance.
 - b. John always says that Bill believes that **I** am a fool.
 - c. NOT: John always says that Bill believes that {John, Bill, anyone but AIN} is a fool.
- (3)
 - a. **today**: the day of *this* utterance.
 - b. At midnight last night, John heard that two years ago Bill predicted Mary would win the lottery today.
 - c. NOT: At 12.00 on Oct. 9th, 2003, John heard that Bill predicted on Oct. 9th, 2001 that Mary would win the lottery on {Oct. 10th, 2003; Oct. 10th, 2001}
- (4)
 - a. **here**: the place of *this* utterance.
 - b. In Boston, John told me that Mary lives here.
 - c. NOT: John told me that Mary lives in Boston.

The standard way to solve this, following Kaplan (1977) is to parametrize the semantic interpretation function $\llbracket \cdot \rrbracket$ by a formal *context* parameter:

$$c = \langle \text{speaker, time, place} \rangle.$$

But this is not enough. Recall that the other parameters of the interpretation function – the assignment function g and the intensional index parameter $\langle \text{world, time} \rangle$ are modifiable by rules (lambda abstraction and intensional function application, respectively) (Heim and Kratzer, 1998). How do we ensure that the context parameter is not altered?

Prohibition Against Monsters: In natural language, there are no “monstrous” operations that modify the context parameter. (Kaplan, 1977)

What would a monster be? Formally speaking, it would have the following property:

Given any two sentences α, β , contexts c_1, c_2 , and intensional indices i_1, i_2 such that $\llbracket \alpha \rrbracket^{c_1, i_1} = \llbracket \beta \rrbracket^{c_2, i_2}$, an operator OP is a *monster* iff

$$\llbracket \text{OP}(\alpha) \rrbracket^{c_1, i_1} \neq \llbracket \text{OP}(\beta) \rrbracket^{c_2, i_2}.$$

An example:

- (5) a. α = I like to dance.
 b. β = Andrew likes to dance.
 c. c_1 = ⟨AIN, Oct. 10th 3:35 p.m., Knopf Room, FAC⟩
 d. c_2 = ⟨PA, Oct. 10th 3:35 p.m., Knopf Room, FAC⟩
 e. $[[\alpha]]^{c_1, i_1} = [[\beta]]^{c_2, i_2}$

$[[\text{Hesen said that OP}[\alpha]]]^{c_1, i_1} = \text{Hesen said that } \mathbf{Hesen} \text{ likes to dance}$

$[[\text{Hesen said that OP}[\beta]]]^{c_2, i_2} = \text{Hesen said that } \mathbf{Andrew} \text{ likes to dance}$

Importantly, this prohibition is a stipulation intended to capture the cross-linguistic *hypothesis* that indexicals never shift (are interpreted as though they were within the scope of other quantifiers).

3. Indexicals in Zazaki

This section is intended to demonstrate two points:

1. The hypothesis that indexicals never shift is wrong: Zazaki indexicals are sensitive to the modal quantifier *vano* ‘say’.
2. However, the shifting of indexicals in Zazaki is subject to a constraint: if one indexical within the scope of a modal shifts, all must.

3.1. Zazaki Indexicals *Do* Shift.

A Grammatical Note on Zazaki

Zazaki is a generally head-final SOV language, though the complementizer *kε* is clause-initial. It also has an ergative split, conditioned on aspect. For the purposes of this talk, it suffices to note that *εz* and *mi* are the NOM and ERG counterparts for ‘I’; the same holds for *ti* and *to* (‘you’), respectively.

The Zazaki counterpart to English *I* within the scope of the verb *vano* (meaning ‘say’) has the option to refer to either the author of the utterance (AUTH(U), hereafter) or to *shift reference* to the author of the reported-speech attitude context:

- (6) Hεseni_j (mi_k-ra) va kε εz_{j/k} dεwletia
 Hesen.OBL (I.OBL-to) said that I rich.be-PRES
 ‘Hesen said that {I am, Hesen is} rich.’

The possibility of shifting seems to be available only to *vano*. Other attitude verbs (e.g., think, hope, dream, etc.), including other verbs of verbal discourse (e.g., hear and yell) do not allow *εz* to shift:

- (7) H_{es}en_j t_eʃmine k_eno k_e εz_{*j/k} new_eʃsha
 Hes_en believe does that I sick.be-PRES
 ‘Hes_en believes that {I, *Hes_en} is sick.’

At this point, the locus of the difference between English and Zazaki is indeterminate between a particular property of the verb *vano* and the term *εz*, which we have simply stated is an indexical.

However, if we pursue the hypothesis that *εz* is not an indexical, we have to explain the following set of facts:

1. *εz* has the option to behave indexically (i.e., refer to the utterance author) or not.
2. This optionality is *highly* constrained: it can only occur in the scope of *vano*.

In addition, it turns out that all of the other canonical indexicals *also* show the option of shifting in precisely the same context:

- (8) YOU shifts
 H_{es}eni_j (Ali_k-ra) va k_e t_i_{j/k} d_ew_eletia
 Hes_en.OBL (Ali.OBL-to) said that you rich.be-PRES
 ‘Hes_en said that {Ali is, you are} rich.’

- (9) HERE shifts
 Waxto k_e ma Diyarbekir-de bime, H_{es}eni mi-ra va k_e o ita ame dina
 When that we Diyarbekir-at were, Hes_en.obl me-at said that he here came world
 ‘When we were in Diyarbekir, Hes_en told me he was born {here, in Diyarbakir}’.

- (10) YESTERDAY shifts
 Hefte nayeraraver, H_{es}eni mi-ra va k_e o vizeri Rojda paci k_erd.
 week ago, Hes_en.obl me-at said that he yesterday Rojda kiss did
 ‘A week ago, Hes_en told me that he kissed Rojda {eight days ago, #yesterday}.’

The fact that counterparts of *all* the canonical indexicals behave like indexicals in Zazaki in all but one environment suggests that the culprit is not the indexicals themselves, but that particular environment: the verb-of-saying *vano*.

A reasonable objection: There is no puzzle here. What we are seeing is a difference between direct and indirect discourse, like in English:

- (11) a. Hes_en said, “I am rich.”
 b. Hes_en said (that) I am rich.

The difference between English and Zazaki is syntactic. In English, a complementizer forces an indirect discourse reading (for what reason, we are not sure). But this is hardly universal. For instance, in Japanese, direct discourse is possible even with a complementizer:

- (12) H_{es}en-wa [watashi-wa yuufuku da]-to itta
 Hes_en-TOP [I-TOP rich COP]-that said
 ‘Hes_en said that {*I, Hes_en} is rich.’

So, perhaps Zazaki, like Japanese, allows direct discourse with complementizers, and so-called indexical shift is just a case of ambiguity.

In the next section, we will demonstrate why this is not so.

3.2. This Isn't Direct Discourse

The evidence that the sentences in (6,8-10) are not cases of “covert” direct discourse comes from two sources:

1. Pragmatic: Clauses with shifted indexicals do not have to faithfully report the author's literal speech; they can **paraphrase**.
2. Syntactic: It is permissible to **relativize** out of and license **NPIs** inside of clauses with shifted indexicals.

3.2.1. Paraphrase

The evidence in this section assumes the following hypothesis about the pragmatics of direct quotation:

- (13) Direct discourse is impermissible in cases where one is not quoting a person's literal speech.

This hypothesis as stated may be too strong in general, but for examples we will present, it seems to hold in English, as we will indicate.

Example 1: Lack of Knowledge

Background: Fatima and Rojda are sisters, separated at birth. We know this, but Rojda does not. Rojda has no idea that anyone named Fatima even exists. One day, Fatima, who has been living her whole life under the name Nure, tells Rojda: “I am your sister.”

We, as omniscient observers, can say:

- (14) Nure Rojda-ra va ke **εz** Fatima wa
 Nure Rojda-to said that I Fatima am
 Nure said to Rojda that {I am, Rojda is} Fatima.

Note that the English counterpart is infelicitous:

- (15) a. John: “I saw a big purple dinosaur on PBS today.”
 b. # John said, “I saw Barney on PBS today.”

Example 2: True Paraphrase

Background: We have asked a room full of people whether they own any animals. Only Hesen responds, who says “z̄ü kutik u kerga mi este” (One dog and chicken me.OBL exist, ‘I have a dog and a chicken’). Nobody else said they had animals.

Now, we can report:

- (16) Həseni teyna va ke heywane **mi** este
 Hesən only said that animals me.OBL exist.pl-PRES
 ‘Only Hesən said that {I have, he has} animals.’

Again, the English counterpart is infelicitous.

3.2.2. Grammatical Activity of these clauses

The evidence in this section assumes the following hypothesis:

- (17) Direct discourse is treated like a phonological string by the syntax of the embedding clause. It is opaque to the grammatical processes of the embedding clause, and vice versa. (Partee, 1973; Recanati, 2000; Schlenker, 1999)

We will consider two particular cases that this hypothesis bears on: NPI licensing and A’ extraction.

First, note that in English an NPI in a direct quote cannot be licensed by the environment of the embedding clause:

- (18) a. *Rojda didn’t say, “I kissed anyone.”
 b. *Did Rojda say, “I kissed anyone”?

In Zazaki complements of *vano* with shifted indexicals, NPIs are licensed, *contra* expectation if these are cases of direct quotation.

So far, we have only been able to find one NPI in Zazaki, the word *kes* ‘anyone.’

- (19) **Mi** kes paci *(ne) kerd
 I.ERG anyone kiss *(not) did
 ‘I did *(not) kiss anyone.’

As promised, *kes* is licensed in a clause with shifted indexicals when the embedding environment either contains matrix negation or is a question:

- (20) Rojda ne va ke **mi** kes paci kerd
 Rojda not said that I anyone kiss did
 ‘Rojda didn’t say that she kissed anyone.’
- (21) Tawa kesi va ke **mi** Rojda paci kerd
 Q anyone said that I Rojda kiss did
 ‘Did anyone say that I kissed Rojda?’ OR
 ‘Did anyone say, “I kissed Rojda.”?’

A similar contrast between direct discourse and *vano* complements holds for A’ extraction. Again, this is bad in cases of direct discourse (in English):

- (22) *The girl that Hesən said, “I kissed *t*.” is pretty.

However, it is possible out of complements of *vano*:

- (23) čɛnɛkɛ [kɛ Hɛsɛni va **mi** t paci kɛrda] rindɛka
 girl that Hesen said I t kiss did pretty.be-PRES
 ‘The girl that Hesen said {Hesen, I} kissed is pretty.’
- (24) Piyaa-o [kɛ Rojda va kɛ **mi** t paci kɛrd] Ali biyo
 Person that Rojda said that I t kiss did Ali was
 ‘Ali was the person that Rojda said {Rojda, I} kissed.’

In sum, we have provided evidence that the complements of *vano* where indexicals shift cannot be reduced to cases of direct discourse, currently understood as string-quotation opaque to the rest of the sentence.

In addition, note that the examples in (10-11), where only a locative or temporal indexical shift are themselves counterarguments to the claim that these are instances of direct quotation since in the case of (10), for example, Hesen did not say “He was born here.”

3.3. A Constraint on Shifting

Having established that the complements of *vano* with shifted indexicals are not direct quotation, we present the following puzzle: indexicals under *vano* shift (or do not shift) together, *as though it were direct discourse*:

- (25) **Constraint on Shifting:** When one indexical in a clause shifts, all other indexicals must shift.

- (26) Vizeri Rojda Bill-ra va kɛ ɛz to-ra miradiša
 Yesterday Rojda Bill-to said that I you-to angry.be-mkpres
 ‘Yesterday Rojda said to Bill, “I am angry at you.”
 ‘Yesterday Rojda said to Bill, “AUTH(U) is angry at ADDR(U).”
 ‘*Yesterday Rojda said to Bill, “AUTH(U) am angry at you.”
 ‘*Yesterday Rojda said to Bill, “I am angry at ADDR(U).”
- (27) (Andrew to Pranav): Lolo, Pranav, Fatima Rojda-ra va kɛ ɛz waya tiya
 Hey Pranav Fatima Rojda-to said that I sister your
 ‘Hey Pranav, Fatima said Rojda that she(Fatima) is {Rojda’s, *Pranav’s} sister.
- (28) Hesen hefti nayeraver ɓɛyal kɛno va kɛ ɛz to de hefti naeratepia paci kena
 Hesen week ago plan did said that I you two weeks after kiss will-do
 A week ago, Hesen planned: I will kiss you in two weeks (must be 10.17, not 10.24)
- (29) a. Hesen kamji jeneme dɛro?
 Hesen which hell in.be-PRES
 ‘Where the hell is Hesen?’

- b. Ne zano, hama, Hesen mi-ra va ke ez nika {uža, *ita} ena
 Don't know, but, Hesen me.OBL-to said that I now {there, *here} coming
 'I don't know, but Hesen told me that he is coming here now.'
- c. Ne zano, hama, Hesen mi-ra va ke o nika ita ena
 Don't know, but, Hesen me.OBL-to said that he now here coming
 'I don't know, but Hesen told me that he is coming here now.'

In the next section, we will examine two kinds of ways of capturing this constraint.

4. Towards an Account

4.1. Previous Proposals on Indexical Shifting

Indexical shifting has been noted in a variety of languages over the past two decades. Below are representative examples:

- (30) Aghem (**you** shifts; LOG is a logophoric pronoun) (Hyman, 1979)
 w`izÍn vÚ ndzÈ à w`In NÍ'á é Ngé lígha wò ...
 woman that said to him that LOG-3 much like you
 'the woman that said to him, "I love you" ...'
- (31) Amharic (Schlenker, 2003)
 John ġigna ni-ññ yt-lall
 John hero COP.PRES-1s says-3sm
 'John says that {I am, he is} a hero.'

The two most explicitly formulated accounts in the literature:

1. Schlenker (2003): Indexical shift is the result of *lexical underspecification*.³
 - a. Modal verbs are quantifiers over contexts.
 - b. English 'I': $\llbracket I \rrbracket = \text{AUTH}(c^*)$, c^* the utterance context.
 - c. Amharic 'I': $\llbracket I \rrbracket = \text{AUTH}(\kappa)$, κ a free variable over contexts; κ can be bound by any higher modal.
2. Stechow (2002): Indexical shift the result of *feature deletion under binding*.
 - a. Modal verbs are *verbal quantifiers* over individual, time, and world variables.
 - b. When verbal quantifiers bind arguments, they have the option of deleting semantic features (e.g., x^{1st} : presupposition that x is $\text{AUTH}(U)$; x^{1st} : no presupposition, but morphological agreement.)
 - c. Amharic 'I': John says $\lambda\langle x, w, t \rangle x^{1st}$ is a hero.

³Schlenker's approach is similar to the intuitive possibility that Zazaki has English-style indexicals (dependent on the matrix context) *and* homophonous logophoric proforms, obligatorily bound by the embedding context. In a language such as Zazaki, where all canonical indexicals would be ambiguous, these approaches both suggest that acquisition of the duality of all of the indexicals should **not** be roughly simultaneous. This prediction deserves investigation, and should be kept in mind even for possible languages where only some of the indexicals show shifting.

d. Same process: ‘Only I did my homework.’ [Only I] $\lambda x. x^{1st}$ did x^{1st} ’s homework.

Neither of these solutions can account for the restriction on shifting in (25), since both proposals deal with indexicals in each domain independently. However, the theories can be strengthened by stipulating (25) as a restriction on binding.

(32) **Constraint on Shifting (Schlenker and von Stechow)**: All indexicals within the same modal-domain must be bound by the same context.

4.2. A Monstrous Operator

We would like to propose a different story. First, we assume that the context and intensional index parameters are of the same type, c , where $D_c = D_x \times D_s \times D_t \times D_x \times D_{loc}$.

Then we posit that in Zazaki there are two versions of say:

(33) $\llbracket \text{say } \alpha \rrbracket^{c,i} = \lambda x_e. \forall j$ compatible with what x says in i , $\llbracket \alpha \rrbracket^{c,j}$

(34) $\llbracket \text{say } \alpha \rrbracket^{c,i} = \lambda x_e. \forall j$ compatible with what x says in i , $\llbracket \text{OP}[\alpha] \rrbracket^{c,j}$

(35) $\llbracket \text{OP}[\alpha] \rrbracket^{c,i} = \llbracket \alpha \rrbracket^{i,i}$. (c is no longer accessible.)⁴

(36) $\llbracket \text{OP} [\text{I am rich}] \rrbracket^{c,i} = \llbracket [\text{I am rich}] \rrbracket^{i,i} = 1$ iff. author in i is rich in i .⁵

This proposal neatly captures (25), since indexical shift is overwriting of the context parameter. Note that OP is, as promised in (5), a true Kaplanian monster.

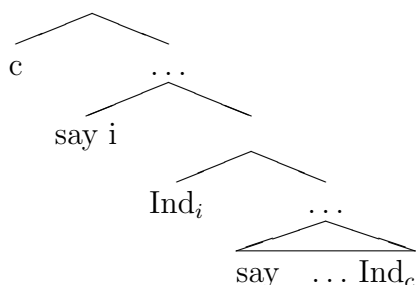
4.3. Arbitrating between Proposals: Multiple Embedding

Our monstrous approach and the strengthened versions of Schlenker and von Stechow’s binding approach differ on an important prediction: The monstrous approach predicts that the context parameter set in the matrix clause cannot be accessed by any indexicals in modal-domains below an indexical that shifts – because shifting requires *overwriting* the context parameter.

(37)

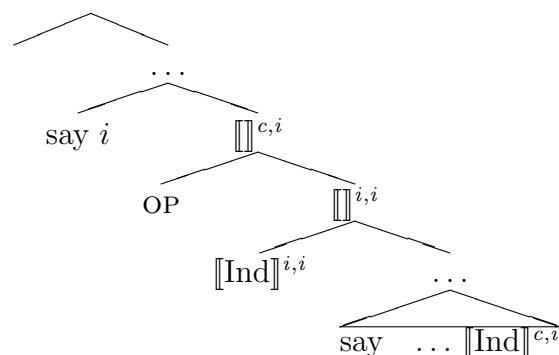
Binding Approach

A possible binding configuration



Monstrous Approach

Impossible: c no longer accessible



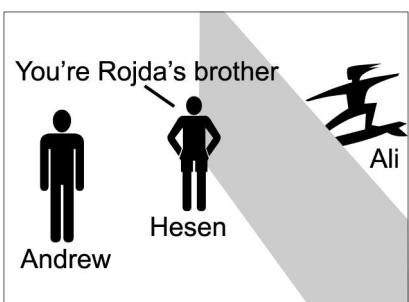
⁴The cognoscenti will note that OP is a diagonal operator, as considered by Stalnaker (1978).

⁵Assuming the standard denotation of I: $\llbracket \text{I} \rrbracket^{c,i} = \text{author in } c$.

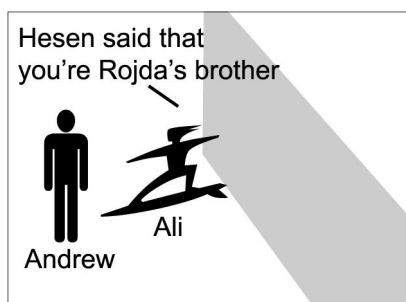
Testing this requires a very rich context. . .

Background: Andrew is the brother of Rojda, a famous traitor, but keeps this knowledge secret from his new friends, Hesen and Ali. One day Hesen finds out Andrew's secret and confronts him.

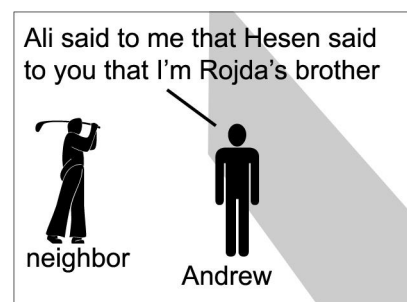
(38)



(i) Ali happens to overhear.



(ii) Ali then confronts Andrew.



(iii) Andrew complains about these events to his neighbor.

Is Andrew's utterance in (37iii) felicitous? **No!**

- (39) (Andrew): $Ali_A mi_U-ra va ke Hesen_H to_U-ra va \varepsilon_{Z\{H,A,*U\}} braye Rojda-o$
 $Ali me-to said that Hesen you-to said I brother Rojda-GEN$
 'Ali said to Andrew that Hesen said to Andrew that {Hesen, Ali, *Andrew} is Rojda's brother.'

Note that this crucially has to do with the shifting of the first indexical. Suppose instead that Ali overheard Hesen talking to some *other* person, Fatima, about Andrew's identity. Andrew could then report to N, the neighbor, as follows:

- (40) (Andrew): $Ali_A mi_U-ra va ke Hesen_H Fatima_F-ra va ti_{\{N,A,\#F\}} braye$
 $Ali me-to said that Hesen Fatima-to said you brother$
 $Rojda-o$
 $Rojda-GEN$
 'Ali said to Andrew that Hesen said to Fatima that {Andrew, the neighbor, #Fatima} is Rojda's brother.'

Thus, the cases of double embedding of verbs-of-saying satisfy the surprising prediction made by the monstrous approach.

5. Conclusion

We have demonstrated that Zazaki indexicals under a verb-of-saying show an all-or-none behavior with respect to shifting: when one indexical shifts, they all must. This is a problem for existing theories of indexicality shift which necessitates an additional constraint.

However, such a constraint does not correctly predict the behavior of indexicals under two verbs-of-saying. An account in terms of a monstrous operator can solve these problems.

The interpretive patterns of Zazaki indexicals thus constitute a strong evidence that empirical hypothesis behind Kaplan’s “Prohibition Against Monsters” is false.

Key Points:

- Many possible theories can explain the shift of single indexicals under a verb-of-saying.
- However, an analysis of indexicals in Zazaki reported speech must capture the optionality of shifting, the grammatical activity of shift-containing clauses, and constraints on co-shifting. Together, these phenomena narrow the space of possible analyses to essentially what we have proposed today.
- Much crosslinguistic variation in this area is imaginable, and the diachronic development of such phenomena suggest many paths of grammaticalization. We hope to have invited further inquiry into the comparative structure of Indo-Iranian reported-speech.

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