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Indexical Shifting in Dhaasanac

Dhaasanac is a Cushitic language spoken by approximately 48000 people in Ethiopia and Kenya (Lewis 2009). The data used in this study are based on fieldwork I conducted in 2011.

Kaplan 1977 claimed that indexicals such as *I*, *you*, *here*, *now*, and *yesterday* are directly referential so that they should not change reference once the character—a function from contexts to contexts—is applied to contexts. Except for direct quotation as in (1a), there is no *monstrous* operator that controls the character of the indexicals in its scope.

- (1) a. Baali said “I am an idiot.”
b. Baali said that I am an idiot.

Without quotation marks, an indexical *I* only refers to the speaker or the writer in (1b).

Kaplan's claim has prompted much debate on whether or not contexts are shiftable. Schlenker 2003 and Anand and Nevins 2004, among others, have argued that context shifters, referred to as *monsters*, do exist in languages such as Amharic and Zazaki.

The aim of the present study is to present new data that contradicts Kaplanian theory.

- (2) Baali_i kieye yaa/yu_{ i/speaker } deech.
Baali say.3SG.PAST I.NOM/I.ABS idiot
‘Baali said {I/he} was an idiot.’

The data in (2) indicates that the subject of the embedded clause *I* refers either the matrix subject Baali or the speaker of the sentence. On the contrary, in the corresponding sentence in English as in (1b), *I* would refer to the speaker of the sentence even in the embedded clause, not the matrix subject Baali. According to Kaplan, *I* is an indexical that always refers to the speaker of the utterance. Nevertheless, in the Dhaasanac sentence in (2), the reference appears to be shifted by the monstrous attitude predicate *say*.

Some may argue that the sentence (2) appears to be a direct quotation, such as in (3).

- (3) Baali_i kieye “yaa/yu_{ i/speaker } deech”.
Baali say.3SG.PAST I.SUB/I.ABS idiot
‘Baali said “{I/he} was an idiot”.’

Direct discourse is known to be opaque to A’ extraction (Partee 1973, Recanati 1999, Schlenker 1999). However, the object extraction in (4) and (5) does not affect the reference of *I* in the relative clauses.

- (4) Ini giri Hassan_i kieye yu_{ i/speaker } af
girl that Hassan say.3SG.PAST I.ABS mouth
gaa dungeka he miðab.
on kiss.1SG.PAST be beautiful
‘The girl that Hasan said {Hasan/I} kissed is pretty.’
- (5) Maaya Baali_i kieye NY ha yu_{ i/speaker }
who Baali say.3SG.PAST NY PREVERBAL I.ABS
gaa aargira?
in see.FUTURE
‘In NY, who did Baali say {Baali/I} would meet?’

Moreover, the indexical *yesterday* which is not supposed to shift temporal reference from one day before the utterance, shifts reference in the embedded clause. From (6), it is interpreted that Loya met Baali met one day before the reference time of the matrix, that is, eight days ago.

- (6) Ram tiya beeyetia Baali_i ye geey kieye
 days seven ago Baali to me tell.3SG.PAST say.3SG.PAST
 Loya gefere mu_{√i/*speaker} hol arge.
 Loya yesterday him REFLEXIVE meet.3SG.PAST
 'A week ago, Baali told me that Loya met him yesterday.'
 (√Loya met Baali eight days ago./*Loya met Baali yesterday.)

Thus, the study of the underrepresented language Dhaasanac suggests that indexicals such as the first person pronoun and *yesterday* shift reference under attitude verbs, proving that monsters do exist.

We further formalize context shifts in Dhaasanac according to the double index system developed from Lewis (1980). According to Kaplan (1977), contexts consist of the following indices: a world, a time, a place, an agent, and so forth. The meaning of a sentence (character) first applies to the context and returns a proposition (contents). That is how indexicals such as *I*, *you*, *today*, and *here* receive interpretations. Each utterance is dependent on context parameters as in (7).

- (7) $[[\phi]]^{<w_c, t_c, a_c>} (c: \text{context}, w: \text{world}, t: \text{time}, a: \text{speaker})$

For example, the character of the sentence “I am an idiot” is applied to context parameters first and derives intension as in (8).

- (8) $[[I \text{ am an idiot}]]^{<w_c, t_c, a_c>} = 1 \text{ iff } [[I]]^{<w_c, t_c, a_c>} \text{ is an idiot in } w_c \text{ at } t_c$

Utterances are also embedded under index parameters in tensed or modal contexts.

- (9) $[[\text{past } \phi]]^{<c, i>} = 1 \text{ iff there is } t_i \text{ such that } t_i < t_c \text{ and } [[\phi]]^{<c[t_i/t_c], i>}$

(i: index, $c = <w_c, t_c, a_c>$, $i = <w_i, t_i>$, ‘ $t_1 < t_2$ ’ means t_1 precedes t_2 in time)

The index time of ordinary past tense sentences is located prior to the utterance time. The temporal adverb *yesterday* should only refer to one day prior to utterance.

- (10) $[[Loya \text{ met Baali yesterday}]]^{<c, i>} = 1 \text{ iff Loya met Baali in } t_i \text{ and } t_i \text{ is one day prior to } t_c$

However, the interpretation of (6) shows that the reference time of *yesterday* in indirect report is not one day before the utterance but eight days before it by virtue of the temporal adverb *a week ago* in the matrix clause.

Since such an indexical shift is not supposed to be possible under the fixity thesis of contexts, we can conclude that a context shifter “monster” maneuvers the embedded context in Dhaasanac. The reportative predicate is a monstrous operator OP that shifts context parameters as shown in (11) and (12).

- (11) $[[OP \text{ Loya met Baali yesterday}]]^{<c, i>} = [[Loya \text{ met Baali yesterday}]]^{<c[t_i/t_c], i>}$

- (12) $OP([[\phi]]^{<c, i>}) = 1 \text{ iff } [[\phi]]^{<c[t_i/t_c], i>} = 1$

- (13) $OP : ((c \times i) \rightarrow t) \rightarrow ((c \times i) \rightarrow t)$

The monstrous function OP manipulates the temporal parameter of the context. The semantic type of OP is the function from $((c \times i) \rightarrow t)$ (the function from the context and index into proposition) into another function from the context and index into proposition. The shift of the reference of the first person pronouns in (4) and (5) can be similarly accounted for.

Thus, attitude predicates in Dhaasanac are operators that shift context parameters. The agent or temporal parameters of the context are shifted to be identical with the index parameters, which explains why indexicals in indirect discourse take the viewpoint of matrix subject or matrix tense.