

Perspectival discourse referents for indexicals

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The reference of an indexical expression depends on the context of utterance. For example, what proposition is expressed by saying *I am hungry* depends on who says this and when. According to Kaplan (1977), English indexicals, such as the first person pronoun *I* and the present tense of *am*, are *directly referential*, i.e. refer directly to the context of utterance. Formally, Kaplan analyzes a *context* as a tuple of an agent, world, time, and place, $c = \langle a_c, w_c, t_c, l_c \rangle$, such that in w_c at t_c , the agent a_c is located in l_c . The proposition expressed by a_c saying “*I am hungry*” in w_c at t_c , is determined by applying the meaning ($\llbracket I \text{ am hungry} \rrbracket$) to this context parameter (c).

On this STATIC APPROACH, the interpretation of indexicals involves context dependence only. This static approach continues to dominate research on indexicals, including work in Discourse Representation Theory, which explicitly represents context change (see e.g. Kamp 1981, 1985, Zeevat 1999). It also dominates cross-linguistic research, which recognizes that in some languages indexicals in attitude reports may reflect the perspective of the subject, in addition to or instead of the speaker (see e.g. Rice 1986 for a detailed description of such a system in Slavey, and Schlenker 2003 and Anand 2006, for static analyses in terms of operators that modify all or some of the coordinates of context parameters in the scope of attitude verbs).

In contrast, Stalnaker (1978) suggests a DYNAMIC APPROACH, where the interpretation of indexicals involves not only context dependence, but also context change. In Stalnaker’s own words, “when I speak, I presuppose that others know I am speaking [...]. This fact, too, can be exploited in the conversation, as when Daniels says *I am bald*, taking it for granted that his audience can figure out who is being said to be bald. I mention this commonplace way that assertions change the context in order to make clear that the context on which an assertion has its *essential effect* is not defined by what is presupposed before the speaker begins to speak, but will include any information which the speaker assumes his audience can infer from the performance of the speech act.” (p. 323)

In Bittner (2007, 2011), I formalized Stalnaker’s ‘commonplace effect’ in *Update with Centering*, a dynamic system that explicitly represents changing states of attention in discourse. In this system, discourse entities are introduced into the center of attention (*top tier*) or periphery (*bottom tier*). Ranked entities can then be referred to by typed attention-guided anaphors. The act of speaking up focuses attention on this event—formally, it introduces this very event on the top tier. It thereby licenses discourse reference to the speech act by the typed top-tier anaphor that refers to the currently top-ranked top-tier event ($\top \varepsilon$). Other eventualities, introduced by verbs, go on the bottom tier. This makes them available for discourse reference by bottom-tier anaphors (e.g. $\perp \varepsilon$, for the top-ranked bottom-tier event; $\perp \sigma$, for the top-ranked bottom-tier state), all the while the speech act maintains its status as the top-ranked top-tier event ($\top \varepsilon$). English indexicals, such as *I* and *you*, refer to individual-valued functions of the speech act—to wit, the *central participant* ($\uparrow \top \varepsilon$), and the *background participant* ($\downarrow \top \varepsilon$), respectively. Direct quotes after a verb of communication (e.g. *say* in *You said to me: “I am hungry.”*) temporarily promote the bottom-tier event of that verb to top-ranked top-tier status for the duration of the direct quote. Therefore,

indexicals outside of the quote are anchored to the speech act, whereas indexicals within the quote are anchored to the communication event of the verb.

The present paper argues in favor of this dynamic approach, by presenting new evidence from grammatical centering in Kalaallisut (Eskaleut: Greenland). As illustrated in (1), dependent verbs in Kalaallisut redundantly mark currently top-ranked third person individuals on the top and bottom tier ($\top\delta$ and $\perp\delta$) by the form of the person inflection (e.g. *-mi* ‘3SG \top ’ vs. *-at* ‘3SG \perp ’) as well as the mood inflection (e.g. *-ga* ‘FCT \top ’ vs. *-mm* ‘FCT \perp ’ for a not-at-issue fact about $\top\delta$ vs. $\perp\delta$). This centering contrast does not extend to matrix verbs: matrix moods and subjects are always topic-oriented (e.g. declarative ‘-DEC \top -3SG’ for the main at-issue fact about $\top\delta$).

Context: Yesterday the children had a dog-sled race.

- (1) a. *Ole-p ikinngun-ni ajugaa-mm-at nuannaar-pu-q.*
 [Ole-ERG \top friend-3SG \top] \perp win-FCT \perp -3SG \perp happy-DEC \top -3SG
 Ole \top ’s friend \perp won, so he \top (= Ole) was happy.
- b. *Ole-p ikinnguta-a ajugaa-ga-mi nuannaar-pu-q.*
 [Ole-ERG \perp friend-3SG \perp] \top win-FCT \top -3SG \top happy-DEC \top -3SG
 Ole \perp ’s friend \top won, so he \top (= friend) was happy.
- c. *Ole-p Kaali ajugaavvigi-ga-mi-uk nuannaar-pu-q.*
 Ole-ERG \top Kaali \perp defeat-FCT \top -3SG \top -3SG \perp happy-DEC \top -3SG
 Ole \top beat Kaali \perp , so he \top (= Ole) was happy.
- d. *Kaali Ole-p ajugaavvigi-mm-a-ni nuannaar-nngit-la-q.*
 Kaali \top Ole-ERG \perp defeat-FCT \perp -3SG \perp -3SG \top happy-not-DEC \top -3SG
 Ole \perp beat Kaali \top , so he \top (= Kaali) wasn’t happy.

Crucially, this grammatical centering system treats *indexical* persons (first and second) as *inherent topics*. That is, indexical persons require the \top -form of any dependent mood (2). Also, whereas third persons compete for the status of the highest top-tier individual ($\top\delta$, see *(3a)), indexical persons do not participate in this competition (e.g. \checkmark (3b)). On the static context-dependence-only approach, these patterns are mysterious. In contrast, they are predicted by the dynamic start-up centering approach, since indexical persons on this view refer to individual-valued functions of the *highest top-tier event* ($\uparrow\top\epsilon$ or $\downarrow\top\epsilon$)—the start-up central perspective.

- (2) *Ajugaa-{ga | *mm}-ma Ole nuannaar-pu-q.*
 win-{FCT \top | *FCT \perp }-1SG Ole \top happy-DEC \top -3SG
 I won, so Ole \top was happy.
- (3) a.* *Ole-p Kaali ajugaavvigi-ga-mi-ni ...*
 Ole-ERG \top Kaali \perp defeat-FCT \top -3SG \top -3SG \top ...
 (INTENDED: Ole \top beat Kaali \perp , so ...)
- b. *Ole ajugaavvigi-g(a)-i-ni nuannaar-nngit-la-q.*
 Ole \top defeat-FCT \top -1SG-3SG \top happy-not-DEC \top -3SG
 I beat Ole \perp , so he \top (= Ole) wasn’t happy.

The dynamic approach also explains shifted indexicals. I propose that Slavey indexical persons are anchored to the *highest top-tier eventuality* ($\top\epsilon$ or $\top\sigma$, whichever ranks higher) for which the relevant individual-valued function ($\uparrow(\cdot)$ or $\downarrow(\cdot)$) is defined. Indexical shifts in attitude reports are due to temporary shifts in the current value of this central perspectival referent.