Communicative reception reports as hear-say: Evidence from indexical shift in Turkish

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1 Introduction

- Communicative reception reports are ones introduced by attitude verbs like 'hear, read, understand, learn, ...' as opposed to 'say, think, or hope.'

  The subject of these attitude verbs is the recipient of some piece of information from a source.

  We look at **indexical shifting under reception verbs in Turkish**. We know, from Schlenker (2003) and many other authors, that indexicals shift. The data from attitude reports show that **1st person indexicals under reception verbs yield a three-way ambiguity**, while a **2nd person indexical is ambiguous two-ways**.[1]

(1)   a.   Ayşe Mercan'dan [kahraman-ım diye] duy-du.
         Ayşe Mercan.ABL   hero-COP.1S   DIYE   hear-PST.3S
         Ayşe$_i$ heard from Mercan$_j$ that she$_{i/j/\text{actual speaker}}$ was a hero.
         (subject)   (source)

      b.   Ayşe Mercan'dan [kahraman-sın diye] duy-du.
         Ayşe Mercan.ABL   hero-COP.2S   DIYE   hear-PST.3S
         Ayşe$_i$ heard from Mercan$_j$ that she$_{i/*j/\text{actual addressee}}$ was a hero.

(2)   1st person indexicals shift to context authors, 2nd persons, to addressees
      a.   Ayşe Mercan'dan kahraman**ım** diye duydu.   1st person shifts to source (1-a)
      b.   Ayşe Mercan'dan kahraman**sın** diye duydu.   2nd person shifts to source (1-b)
      c.   Ayşe Mercan'dan kahraman**ım** diye duydu.   1st person shifts to subject (1-a)
      d.   *Ayşe Mercan'dan kahraman**sın** diye duydu.   2nd person cannot shift to source (1-b)

Core empirical generalization

In Turkish communicative reception reports:

– 1st person indexicals optionally shift to matrix subject or the source argument,

– 2nd person indexicals optionally shift to matrix subject.

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[1] Unshifted readings are available, but not systematically shown for expository reasons. We leave discussion of shift-together (Anand and Nevins, 2004) for further research.

- Communicative reception reports can be conceptualized in two ways:
  (We refer to speakers and attitude holders as (context) *authors*. And addressees as *addressees*.)

  - As a report of what the source says to the subject:
    The subject is an addressee.
    The source is an author (as the speaker).
  - As describing the mental state of the subject:
    The subject is an author (as an attitude holder).

  Indexical shifting data from Turkish supports this intuition.

- Setting aside indexical shift, communicative reception reports in English display a dual behavior regarding the status of the author in examples like (3).

  (3)   **Context**: Wonderwoman prevents a bus from driving off a bridge, but destroys multiple buildings in the process. The mayor says to Wonderwoman: "You destroyed the city."
      a.   Wonderwoman heard that she destroyed the city.
           (cf. Wonderwoman heard "You destroyed the city.")

      b.   Wonderwoman heard that she was a hero.
           (... Despite what the mayor actually said).

- **Communicative reception as hear-say**
  We propose a syntax and semantics for clausal embedding in Turkish that accounts for the dual behavior of communicative reception reports in Turkish and captures the indexical shifting pattern in (2).

  - Embedded clauses are introduced by the morpheme *diye*, derived from the root *de-*, 'say.'
  - The 'say' component projects a pronominal subject and is interpreted.
  - Either matrix argument can be indexed with the subject. This argument becomes the author of the reported context, 'by proxy.'

  (4)   a.   1st person shifts to source
             Ayşe heard from Mercan$_8$ [LOGOPHOR- x_8 [SAY [OP$_{\text{context-shifter}}$ I am a hero]]]

        b.   1st person shifts to subject
             Ayşe$_7$ heard from Mercan$_8$ [LOGOPHOR- x_7 [SAY [OP$_{\text{context-shifter}}$ I am a hero]]]

1st person indexicals shift to the subject of SAY, which is bound by one of the matrix arguments. This results in 1st person indexicals shifting to one of the matrix arguments.

2   Background information

2.1   Indexical shifting under belief and emission verbs

- Indexicals are words like "I, you, here, today" that typically pick up their reference from the actual context of utterance.

This behavior persists even when they are embedded under attitude verbs, which make available alternative speakers, addressees, etc.

(5)   Travis says: "Mary said that I'm a hero."   [Two contexts, two speakers]
- a.   Possible referent for *I*: Travis (speaker of actual context)
- b.   Impossible referent for *I*: Mary (speaker of reported context)

- In some languages,[2] indexicals are said to *shift*. This means that they are able to pick up their reference from reported contexts (sometimes obligatorily, sometimes optionally).

(6)   jŏn   [ǰəgna nə-**ññ**   ] yɨl-all   Amharic, Schlenker (2003)
             John   hero   be.PF-1SO   3M.say-AUX.3M
             $John_i$ says that he_i (=John) is a hero.   (Literally, "$John_i$ says that I_i am a hero.")

- As foreshadowed in the introduction, Turkish also allows indexicals to shift.[3]

(7)   a.   Seda [pro_{1s} sınıf-ta   kal-dı-**m**   ] san-ıyor.   Turkish
              Seda   1S   class-LOC stay-PST-1S   believe-PRES.3S
              $Seda_i$ believes that {I, she_i} flunked.   Adapted from Şener and Şener (2011)

     b.   Tunç Ayşe-ye   [pro_{1s} **sen**-i   nere-ye   götür-eceğ-**im**] de-miş?
              Tunç Ayşe-DAT   1S   2S-ACC where-DAT take-FUT-1S   say-EVID.3S
              Where did $Tunç_i$ say to $Ayşe_j$ that {I would take you, that he_i would take her_j}?
                                                  Adapted from Özyıldız (2012)

> **The shifting behavior of 1st/2nd person indexicals under belief/emission verbs:**
>
> – When unshifted, 1st person refers to actual speaker, 2nd person refers to actual addressee.
>
> – When shifted, 1st person shifts to speaker or attitude holder of reported contexts, 2nd person shifts to addressee of reported contexts.

2.2   Indexical shifting under reception verbs

2.2.1   Previous findings

- In the literature, there is little mention of indexical shifting under communicative reception verbs (see Deal's (2016) typology).

  – For Tsez, Polinsky (2015) lists *teq-*, 'hear,' and *t'et'r-*, 'read,' as two of many verbs that allow shifting of 1st person indexicals to shift to the 'attitude holder,' defined as the 'the agent of speaking, the holder of a belief or attitude.'

  It is unclear whether the source, in communicative reception reports, counts as an attitude holder in this sense, and whether indexicals may shift to it.

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[2]For a more comprehensive discussion of the typology of indexical shift, c.f. Deal (2016).

[3]The data presented here are incomplete, for expository purposes. The sentences in (7) have embedded *wh-* words with matrix scope, to rule out the possibility that the embedded material is being quoted. Quotes are environments in which the *regular* behavior of indexicals is to shift.

- – Sundaresan (2013, 2018): Indexical shifting under 'hear' in Tamil is impossible or harder than shifting under speech verbs.

- Sudo (2010) on indexical shifting under reception verbs in Uyghur

> In Uyghur
>
> 1. First person indexicals:
>   Must shift to the subject of reception verbs & cannot shift to the source, in (8-a).
>
> 2. Second person indexicals:
>   Cannot shift to subjects of reception verbs, in (8-b).

(8)   Adapted from Sudo (2010, p. 40, exx. 73–74):[4]

   a.   Ahmet$_i$ Aygül-din$_j$ [pro_{1s} qaysi imtihan-din öt-ti-**m**$_{i/*j}$ dep] angla-di?
        Ahmet Aygül-from pro   which test-from   pass-PAST-1SG C   hear-PAST.3
        Which test did Ahmet$_i$ hear from Aygül$_j$ that (s)he$_{i/*j}$ passed?

   b.   *Ahmet$_i$ Aygül-din$_j$ [pro_{2s} qaysi imtihan-din öt-ti-**ng**$_{*i/*j}$ dep] angla-di?
        Ahmet Aygül-from pro   which test-from   pass-PAST-2SG C   hear-PAST.3
        Which test did Ahmet$_i$ hear from Aygül$_j$ that (s)he$_{*i/*j}$ passed?

- **Sudo's conclusion**:

  - – In communicative reception reports, the subject is an attitude holder, the source, despite being a speaker, is not.

  - – 1st person indexicals are restricted to denote attitude holders, not speakers.
    Therefore, they may shift to attitude holders (Ahmet, in (8-a)), but not to speakers (Aygül, in (8-a) or (8-b).

  - – 2nd person indexicals denote the person that the context attitude holder is talking to.
    Ahmet, the attitude holder in (8-b), is not talking to anyone in (8), so 2nd person does not shift.

2.2.2 Indexical shift under reception verbs in Turkish

- The view from Turkish is different.

> In Turkish reception reports:
>
>   - – a 1st person indexical may shift to the subject, or it may shift to the source,
>   - – a 2nd person indexical may shift to the subject.

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[4]Bear in mind that Sudo's finding is that null subjects *must* shift in Uyghur, which explains the ungrammaticality of certain readings expected to be available. In Turkish null subjects can, but need not shift.

(9)   a.   1s can shift to subject   [like in Uyghur]
Ali Ayşe'den [nereye atandı-**m**   diye] duydu?
Ali Ayşe.ABL   where appoint.PST-1S DIYE   hear.PST.3
Where did Ali hear from Ayşe that he was appointed?

        b.   1s can shift to source   [unlike in Uyghur]
Ali Ayşe'den [nereye atandı-**m**   diye] duydu?
Ali Ayşe.ABL   where appoint.PST-1S DIYE   hear.PST.3
Where did Ali hear from Ayşe that she was appointed.

        c.   2s can shift to subject   [unlike in Uyghur]
Ali Ayşe'den [nereye atandı-**n**   diye] duydu?
Ali Ayşe.ABL   where appoint.PST-2S DIYE   hear.PST.3
Where did Ali hear from Ayşe that he was appointed?

Implication: In communicative reception reports:

(10)   A heard from B that p

      a.   A can be construed as a context author (qua perceiver),
      b.   A can be construed as a context addressee (qua recipient of a speech act),
      c.   B can also be construed as a context author (qua emitter of a speech act).

- This is puzzling:

(11)   Ali heard from Ayşe that [... 1s ...]

× Hyp #1   1st person indexicals shift to the grammatical subjects of attitude verb (=att. holders?):
1s should only shift to Ali.

× Hyp #2   1st person indexicals shift to speakers:
1s should only shift to Ayşe.
(In addition, belief verbs allow indexical shifting in Turkish.)

(×)Hyp #3   1st person indexicals shift to speakers or to attitude holders.
This could be a viable option for Turkish—but it introduces indeterminacy into how the
first coordinate of a context parameter is determined, which our account does not.

(×)Hyp #4   Lexical ambiguity
'Hear$_1$' makes John an addressee and Mary an author.
'Hear$_2$' makes John an author.

(12)   a. $[\![\text{hear}_1]\!]^w(\lambda w.\text{Paul is a hero at } w)(\text{John})(\text{from } \mathbf{Mary}) = 1$ iff
For all w' compatible with what **Mary** said to John at w,
Paul is a hero at w'

       b. $[\![\text{hear}_2]\!]^w(\lambda w.\text{Paul is a hero at } w)(\mathbf{John})(\text{from Mary}) = 1$ iff
For all w' compatible with what **John** makes of Mary's words at w,
Paul is a hero at w'

A viable option, but ruled out by parsimony.

3 Proposal

3.1 Overview

- **Goal**: We want to derive the fact that communicative reception reports lead two lives.

    - One where the grammatical subject is a context addressee, and the source, an author.
    - One where the grammatical subject is an attitude holder.

- **The proposal in a nutshell**:

    - Attitude verbs embed the verb 'say,' which projects a logophoric subject and is interpreted.[6]
        cf. Koopman (1984), Koopman and Sportiche (1989),
    - This logophor is invariably the author of the reported context introduced by 'say.'
    - The logophor must be bound. Whatever binds it 'becomes' the author of the reported context introduced by 'say.'

(13)   a.   1st person shifts to logophoric subject bound by source
            Ayşe heard from Mercan$_8$ [LOGOPHOR- x_8 [SAY [OP$_{\text{context-shifter}}$ I am a hero]]]

       b.   1st person shifts to logophoric subject bound by subject
            Ayşe$_7$ heard from Mercan$_8$ [LOGOPHOR- x_7 [SAY [OP$_{\text{context-shifter}}$ I am a hero]]]

1st person indexicals shift to the subject of SAY, which is bound by one of the matrix arguments. This results in 1st person indexicals shifting to one of the matrix arguments.

3.2 The interpretation of say-derived "complementizers"

- In Turkish, embedded clauses are introduced by the morpheme *diye*.

(14)   Ayşe [kahraman.ı-m *diye*] {duydu, düşünüyor, ... }
       Ayşe hero.COP-1S   DIYE   heard, thinks
       Ayşe {heard, thinks, ... } that {she, I} was a hero.

The morpheme *diye* is morphologically complex. We propose to **interpret** both morphemes.[7]

(15)   a.   *de-*, 'say.'
       b.   *-(y)A*, a verbal linker.[8]

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[6]This is reminiscent of Kratzer's (2013) covert reportative modal labeled [say]. The main difference here is that our 'say' morpheme contributes an event description.

[7]A relationship between complementizers that contain the verb 'say' and the licensing of indexical shift was noted in Sudo (2010) and Podobryaev (2014), but their status as verbs is not pursued as a tenable analysis. Sudo writes: "[I]t is a possibility to analyze 'ϕ *dep*' as a tenseless controlled clause that means while saying ϕ, but this analysis is inadequate for attitude verbs such as *angla-* 'hear.'" Messick (2017) on the other hand gives special treatment to "say" complementizers, but does not use this fact to propose a distinct structure for complementation. A syntactic analysis along these lines can be found in Khanina (2007), but she does not provide a compositional semantics and admittedly stipulates a type of nominalization not found elsewhere in Mishar Tatar, as noted by Podobryaev (2014).

[8]Göksel and Kerslake (2004) call *-(y)A* the 'optative' suffix.

- **Interpreting 'say' and capturing indexical shift**
  We assume an event based model of attitude reports: Attitude verbs are modeled as predicates of eventualities. These eventualities have propositional content.

  <div align="right">(Hacquard 2006, Kratzer 2006, a.o., cf. Davidson 1967)</div>

(16)   Darcy believes that it is raining.

   $[\![(16)]\!]^w = 1$ iff $\exists s[\text{belief}(s) \wedge \text{experiencer}(s) = \text{darcy} \wedge \forall w' \in \text{CONTENT}(s)[\text{rain}(w')]]$

   <div align="right">s is a state, ex. adapted from Hacquard (2006) ex. 208</div>

(17)   a.   **Lexical entry for *de-*:**
            $[\![de\text{-}]\!]^{c,i} = \lambda p.\lambda x.\lambda e.say(e) \wedge \text{AGENT}(e) = x \wedge \forall i \in \text{CONTENT}(e) = p(i)$
            'e is a saying event whose agent is x and whose content is p'

        b.   **Abbreviated lexical entry for *de-*:**   (for expository purposes)
            $[\![de\text{-}]\!]^{c,i} = \lambda p.\lambda x.\lambda e.say(e, x, p)$

- Interpretation is relativized to a context parameter c and an index parameter i.

   $c = \langle a_c, h_c, w_c \rangle$ author, hearer and world coordinates of c
   $i = \langle a_i, h_i, w_i \rangle$ author, hearer and world coordinates of i

(18)   a. $[\![\text{I'm a hero}]\!]^{c,i} = 1$ iff a_c is a hero at w_i (here, $w_i = w_c$)
        b. $[\![\text{You're a hero}]\!]^{c,i} = 1$ iff h_c is a hero at w_i

   The value of c is fixed* and stores the actual speaker, hearer and world.
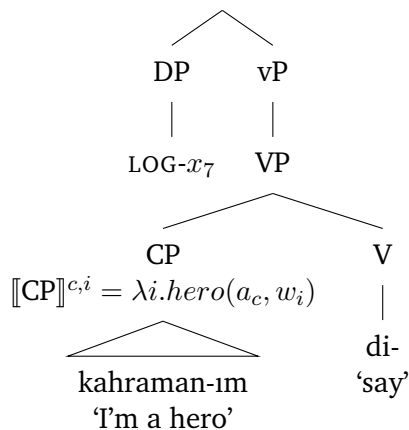   Modals quantify over i.

- With the entry in (17-b), we can interpret the boxed portion of (14), repeated from above.

(14)   Ayşe ⟦kahraman-ım di⟧-ye duydu.

   Ayşe heard that {she, I} was a hero.

(19)
$$\text{vP}$$
$$\lambda e.say(e, g(7), \lambda i.hero(a_c, w_i))$$

Add'l definitions

$[\![\text{LOG}]\!] = \lambda x_e : x \text{ is a logophoric center}.x$

$[\![x_n]\!]^g = g(n)$

$[\![\text{kahraman}]\!]^{c,i} = \lambda x.hero(x, w_i)$

$[\![\text{-ım}]\!]^{c,i} = [\![\text{I}]\!]^{c,i} = a_c$

$[\![\text{CP}]\!]^{c,i} = \lambda i.hero(a_c, w_i)$

kahraman-ım   di-
'I'm a hero'   'say'

'e is a saying event whose agent is $g(7)$
and whose content is that a_c is a hero'

- **The *de-* in *diye* introduces a subject**.

  * Syntactically projected,
  * Saturated by a **null logophoric pronoun**.[9]
    Logophors are controlled by attitude or perspective holders.
    (Sells (1987), Kuno (1987), Huang and Liu (2001), Charnavel and Zlogar (2015), a.o.).
    We encode logophoricity as a presuppositional pronominal feature (like gender).
    (Heim and Kratzer, 1998; Sudo, 2010).

- **1st person Indexicals shift to the subject of *de-***
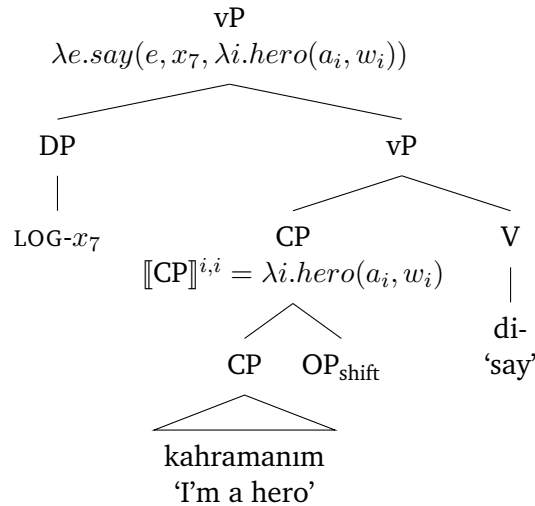 We assume an operator based approach to indexical shift.

  (Anand and Nevins 2004, a.o.)

  Indexical shifting operators 'overwrite' the context parameter with the index parameter.

  (20) a. $[\![OP_{shift} \text{ I'm a hero}]\!]^{\mathbf{c},\mathbf{i},\mathbf{g}} = [\![\text{I'm a hero}]\!]^{\mathbf{i},\mathbf{i},\mathbf{g}} = 1$ iff a_i is a hero at w_i

  b. $[\![\text{Mary said } OP_{shift} \text{ I'm a hero}]\!]^{c,i,g} = 1$ iff
  $[\![\text{said}]\!]^{c,i}([\![OP_{shift} \text{ I'm a hero}]\!]^{c,i})([\![\text{Mary}]\!]^{c,i}) = 1$ iff
  $[\![\text{said}]\!]^{c,i}([\![\text{I'm a hero}]\!]^{i,i})([\![\text{Mary}]\!]^{c,i}) = 1$ iff
  $\exists e[say(e) \land \text{AGENT}(e) = \text{mary} \land \forall i' \in \text{CONTENT}(e)[a_{i'} \text{ is a hero at } w_{i'}]]$

  In Turkish, this operator optionally occurs under *de-*.[10]

  (21) Sturcture with the context shifting operator:

  vP
  $\lambda e.say(e, x_7, \lambda i.hero(a_i, w_i))$

  DP   vP

  LOG-x_7 CP   V
  $[\![CP]\!]^{i,i} = \lambda i.hero(a_i, w_i)$

  di-
  'say'

  CP   OP$_{shift}$

  kahramanım
  'I'm a hero'

  'e is a saying event whose agent is $g(7)$ and whose content is that a_i is a hero'

- **Key observation**:
  The agent of *de-*, 'say,' is the logophoric pronoun.
  This makes the value of the pronoun the context author.
  1st person pronouns are predicted to shift to the value of the pronoun.
  2nd person pronouns are predicted to shift the author's addressee.

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[9]We speculate that this logophoricity restriction might be coming from the thematic role assigned by 'say' to its subject.
[10]We speculate that the operator does not occur anywhere else. Indeed, indexical shift is only licensed in embedded clauses introduced by *diye*.

- **Interpreting the linker *-(y)A* and composing the embedded clause with the matrix verb**

At this stage, we would like to compose the embedded clauses from (19)/(21) with the matrix verb.

(14)   Ayşe ⟦ kahramanim di ⟧-ye duydu.
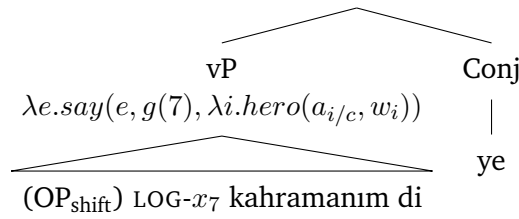
Ayşe heard that {she, I} was a hero.

This is done with the verbal linker *-ye*, interpreted as in (22).

(22) $[\![\text{-}(y)A]\!] = \lambda P_{vt}.\lambda Q_{vt}.\lambda e_v.\exists e_1 \exists e_2[e = e_1 \oplus e_2 \wedge P(e_1) \wedge Q(e_2)]$
‘e is the sum of e_1 and e_2, and e_1 satisfies P and e_2 satisfies Q’

(the operator $\oplus$ sums two events together)

(23)   Conj
$\lambda Q_{vt}.\lambda e.\exists e_1 \exists e_2[e = e_1 \oplus e_2 \wedge say(e_1, g(7), \lambda i.hero(a_{i/c}, w_i)) \wedge Q(e_2)]$

vP   Conj
$\lambda e.say(e, g(7), \lambda i.hero(a_{i/c}, w_i))$ |

ye

(OP$_{\text{shift}}$) LOG-x_7 kahramanım di

‘e is the sum of e_1 and e_2, e_1 is an event of $g(7)$ saying that $a_{i/c}$ is a hero, and e_2 is a Q event’

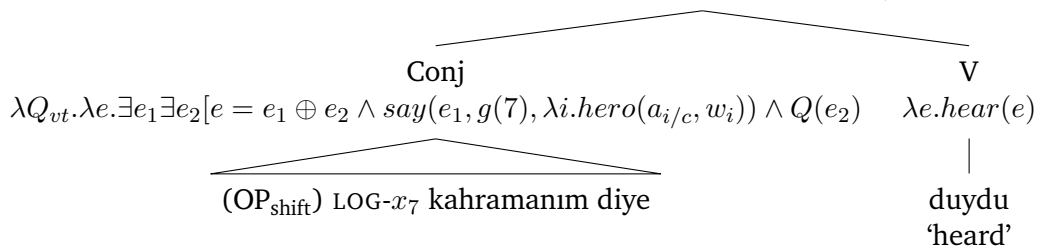- **Composing the embedded clause with the matrix attitude verb**

An attitude verb like *duy-*, ‘hear,’ denotes a predicate of events.

(24) $[\![duy\text{-}]\!]^{c,i} = \lambda e.hear(e)$[11]

(14)   Ayşe ⟦⟦ kahramanım di ⟧-ye duydu ⟧.

Ayşe heard that {she, I} was a hero.

(25)   VP
$\lambda e.\exists e_1 \exists e_2[e = e_1 \oplus e_2 \wedge say(e_1, g(7), \lambda i.hero(a_{i/c}, w_i)) \wedge hear(e_2)]$

Conj   V
$\lambda Q_{vt}.\lambda e.\exists e_1 \exists e_2[e = e_1 \oplus e_2 \wedge say(e_1, g(7), \lambda i.hero(a_{i/c}, w_i)) \wedge Q(e_2)]$ $\lambda e.hear(e)$

(OP$_{\text{shift}}$) LOG-x_7 kahramanım diye   duydu
                                                                    ‘heard’

‘e is the sum of e_1 and e_2, e_1 is an event of $g(7)$ saying that $a_{i/c}$ is a hero, and e_2 is a hearing event’

---

[11]We omit the internal argument of ‘hear’ for expository purposes. Readers who should require including it could safely assume that it is existentially closed off.

- The two arguments of 'hear' are introduced regularly.

(14)′ a. Ayşe kahramanım diye duydu.
Ayşe I'm a hero   DIYE heard
Ayşe heard that she (=Ayşe) was a hero.[12]
$\lambda e.\exists e_1 \exists e_2 [e = e_1 \oplus e_2 \wedge \text{EXPERIENCER}(e) = \text{ayşe} \wedge \dots$

  b. Ayşe Mercan'dan kahramanım diye duydu.
Ayşe Mercan-ABL I'm a hero   DIYE heard
Ayşe heard from Mercan that she (=Ayşe or Mercan) was a hero.
$\lambda e.\exists e_1 \exists e_2 [e = e_1 \oplus e_2 \wedge \text{EXPERIENCER}(e) = \text{ayşe} \wedge \text{SOURCE}(e) = \text{mercan} \wedge \dots$

- **Capturing the indexical shifting pattern**

  – The logophoric subject of *de-* can be bound by the arguments of the matrix verb, provided that the binder is a logophoric center.

    (26) Under reception verbs: Two logophoric centers
    a. Hear-say 'hear'
    Ayşe heard from Mercan $\lambda 7$ [LOG-x_7 SAY [OP$_{\text{shift}}$ I'm a hero]]
    Logophor bound by source: 1st person shifts to source.
                2nd person shifts to addressee of source.

    b. Mental attitude 'hear': A single logophoric center
    Ayşe $\lambda 8$ heard from Mercan [LOG-x_8 SAY [OP$_{\text{shift}}$ I'm a hero]]
    Logophor bound by subject: 1st person shifts to subject.
                2nd person doesn't shift (1st has no addressee).

    (27) Under emission verbs
    a. #Ayşe said to Mercan $\lambda 7$ [LOG-x_7 SAY [OP$_{\text{shift}}$ I'm a hero]]
    Logophor bound by source: Logophoric presupposition fails, addressees are not logophoric centers.[13]

    b. Ayşe $\lambda 8$ said to Mercan [LOG-x_8 SAY [OP$_{\text{shift}}$ I'm a hero]]
    Logophor bound by subject: 1st shifts to subject, 2nd shifts to addressee.

  – Supporting data from Korean: Under 'hear,' the long-distance reflexive *caki* can be bound by the subject or the source. Under 'say,' only the subject, and not the dative argument.

    (28) a. Under 'say,' only subject binds *caki*
    John-i   Mary-eykey [**caki**-ka   am-i-lako   ] malhay-ss-ta.
    John-nom Mary-to   caki-Nom cancer-be-C   said
    John said to Mary that he/*she has cancer.

    b. Under 'hear,' subject or source binds *caki*
    John-i   Mary-lopwute [**caki**-ka   am-i-lako   ] tul-ess-ta
    John-nom Mary-from   caki-Nom cancer-be-C   heard
    John heard from Mary that he/she has cancer.
                (Yoon 1989, cited from Park 2014)

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[12]The first person could shift to a source here if one is salient in the (con)text.
[13]There is then an asymmetry between the addressee of reception reports, and that of emission reports.

4 Discussion

- Physical utterances and mental 'utterances'

    - We have discussed two types of hearing:
        * Centered around the physical signal that the hearer receives from the source,
          ≈ "Ayşe hears Mercan, Mercan says p."
        * Centered around the hearer's mental state (based on what she hears from the source).
          ≈ "Ayşe hears Mercan, Ayşe says p."

    - When the **source is the agent** of 'say,' the embedded clause describes the words physically produced by the source.
      When the **subject is the agent** of 'say,' the embedded clause describes the words from the subject's 'internal voice.'

    - How is this captured in the present system?
      The denotation of *de-*, or of 'say,' is not only true of physical events of speaking, as in (29-a), but also of mental speech or thought events, as in (29-b).

        (29)   a.   Mary (started speaking and) said that she was a hero.   [physical]
               b.   Mary said (to herself) that she was a hero.   [mental]
               c.   Mary says to herself that she's a hero.   [mental]

        * Hearing as perceiving a physical signal: Physical 'say.'
        * Hearing as being in a certain mental state: Mental 'say.'

    - Perhaps the choice of what kind of event is denoted by *de-*, 'say,' is restricted contextually?

    - A potential worry:
      We have observed polysemy with 'hear,' and now we are claiming that this is underlyingly due to polysemy with 'say.'
      The compatibility of 'say' with mental or physical events of saying, however, does not require lexical ambiguity.

        (30)   a.   Lexical ambiguity with 'hear'
                    'Ayşe heard$_1$ from Mercan that p' → Ayşe is author of reported context.
                    'Ayşe heard$_2$ from Mercan that p ' → Mercan is author of reported context.

               b.   No lexical ambiguity with 'say'
                    'Ayşe said that p' → Ayşe is author of reported context

- Grammaticalization?
  Our proposal makes available two event descriptions:

  (31) $\lambda e.\exists e_1 \exists e_2 [e = e \oplus e_2 \wedge say(e_1) \wedge hear(e_2) \ldots$

  We might expect to be able to negate, modify, etc., the two event descriptions individually.

  In (32-a) *de-*, 'say,' is modified by the manner adverbial 'quickly.'

  The attempt to modify *de-*, in (32-b), seems to fail.

(32) a. Mercan Ayşe'ye   hızlı   [kahraman-sın] dedi.
          Mercan Ayşe.DAT quickly   hero-COP.2S   said
          Mercan told Ayşe$_i$ quickly that she$_i$ was a hero.

      b. #Ayşe Mercan'dan [hızlı   [kahraman-sın] diye] duydu.
          Ayşe Mercan.ABL quickly   hero-COP.2S   DIYE heard
          Intended: Mercan told Ayşe quickly that she was a hero, and Ayşe heard it.

Two options to explain the negative result in (32-b):

- *diye* might not be a fully transparent form in its use introducing complement clauses,
- or, independent semantic or pragmatic restrictions bear on modifying attitude verb + 'say' complexes.

- A prediction made by our account is that if the 'kind' of reception report (physical vs. mental) is fixed independently (either grammatically, or by context), we expect to see a matching indexical shifting pattern.

(33) a. Reception report independently fixed to physical: 1st person should shift to source.
      b. Reception report independantly fixed to mental: 1st person should shift to subject.

5   Concluding remarks

- A novel indexical shifting pattern under communicative reception verbs in Turkish.

- This motivates an analysis of communicative reception reports as involving a syntactically and semantically articulated 'say' component.

References

Anand, Pranav, and Andrew Nevins. 2004. Shifty operators in changing contexts. In *Semantics and Linguistic Theory*, volume 14, 20–37.

Charnavel, Isabelle Carole, and Christina Diane Zlogar. 2015. English reflexive logophors .

Davidson, Donald. 1967. The logical form of action sentences. In *The logic of decision and action*, ed. Nicholas Rescher. University of Pittsburgh Press.

Deal, Amy Rose. 2016. Shifty asymmetries: universals and variation in shifty indexicality .

Göksel, Aslı, and Celia Kerslake. 2004. *Turkish: A comprehensive grammar*. Routledge.

Hacquard, Valentine. 2006. Aspects of modality. Doctoral Dissertation, Massachusetts Institute of Technology.

Heim, Irene, and Angelika Kratzer. 1998. *Semantics in generative grammar*. Blackwell Oxford.

Huang, C-T James, and C-S Luther Liu. 2001. Logophoricity, attitudes, and ziji at the interface. *Long-distance reflexives* 33:141–195.

Khanina, Olesya. 2007. Konstrukcii s grammatikalizovannym konverbom glagola rechi (constructions with the grammaticalized converb of the verb of speech). In *Misharsku dialekt tatarskogo jazyka: Ocherki po sintaksisu i semantike (mishar tatar: Studies in syntax and semantics)*, ed. V. D. Solovyev E. A. Lyutikova, K. I. Kazenin and S. G. Tatevosov. Kazan: Magarif.

Koopman, Hilda, and Dominique Sportiche. 1989. Pronouns, logical variables, and logophoricity in abe. *Linguistic Inquiry* 555–588.

Koopman, Hilda Judith. 1984. The syntax of verbs: From verb movement rules in the kru languages to universal grammar .

Kratzer, Angelika. 2006. Decomposing attitude verbs. Talk presented at the workshop in honor of Anita Mittwoch. The Hebrew University of Jerusalem. July 4, 2006. `https://works.bepress.com/angelika_kratzer/15/`.

Kratzer, Angelika. 2013. Modality and the semantics of embedding. Presentation slides from the 2013 Amsterdam Colloquium.

Kuno, Susumu. 1987. *Functional syntax: Anaphora, discourse and empathy.*. University of Chicago Press.

Messick, Troy. 2017. The morphosyntax of self ascription: A cross-linguistic study. Doctoral Dissertation, University of Connecticut.

Özyıldız, Deniz. 2012. When I is not me: A preliminary account of indexical shifting in Turkish. Ms., ENS Paris.

Park, Yangsook. 2014. Indexical shift and the long-distance reflexive *caki* in korean. UMass, Amherst.

Podobryaev, Alexander. 2014. Persons, imposters, and monsters. Doctoral Dissertation, Massachusetts Institute of Technology.

Polinsky, Maria. 2015. Embedded finite complements, indexical shift, and binding in Tsez. Harvard University.

Schlenker, Philippe. 2003. A plea for monsters. *Linguistics & Philosophy* 26:29–130.

Sells, Peter. 1987. Aspects of logophoricity. *Linguistic inquiry* 18:445–479.

Şener, Nilüfer Gültekin, and Serkan Şener. 2011. Null subjects and indexicality in Turkish and Uyghur. In *Workshop on Altaic Formal Linguistics (WAFL) 7*, ed. Andrew Simpson, 269–284.

Sudo, Yasutada. 2010. The Syntax and Semantics of Indexical Shifting in Modern Uyghur. MIT Generals paper.

Sundaresan, Sandhya. 2013. Context and (co) reference in the syntax and its interfaces. Doctoral Dissertation.

Sundaresan, Sandhya. 2018. An Alternative Model of Indexical Shift: Shift Together Exceptions, Dual Contexts, & Variation. Handout from MIT Colloquium Talk, March 9.