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

Introduction There's a venerable tradition of analyzing the semantics of speech and belief reports (henceforth, ARs), but in recent years linguists have shifted their attention toward less canonical attitudes (dreams, imagination, desire) and cross-linguistic variation (esp. with respect to logophoricity and indexical shift). In this paper we focus on a very common but so far neglected type of reporting, viz. communicative reception reports like 'John heard/read/learned that Mary's retiring soon'. What makes these reports interesting is their hybrid nature: they can be like speech reports in semi-faithfully reporting another person's speech act (which explains why, unlike 'believe' or 'hope', they can take direct quotation); but they can also behave more like belief reports in describing the subject as being the holder of a certain mental/information state (as in 'the doctor told John he has pneumonia but all he heard is that he's going to die').

In Turkish, reception reports overtly express both a 'hear' and a 'say' component. We take this surface structure literally, analyzing 'x heard that p' roughly as 'x heard LOG saying that p', where LOG can pick up (i) the reported speaker, leading to a speech report interpretation, or (ii) the matrix subject, leading to an attitudinal interpretation. Assuming that 'say' can house a monstrous indexical shifter (Şener & Şener 2012, cf. Özyıldız 2012), we now predict that on the speech report reading 1s can shift to the reported speaker, while on the attitudinal interpretation 1s can shift to the reported hearer.

Background: A conjunctive model of ARs Recent proposals give ARs a semantics like 1 (Hacquard 2006, Kratzer 2006, Moulton 2009, Bogal-Allbritten 2016): It is event-based, so 'conjunctive' (Davidson 1967), and the propositional content p of the attitude is introduced by a 'content' function that takes contentful objects (an event here, content nouns for some authors) and returns a set of compatible worlds that satisfy p.

(1) $[\![\text{S thinks CP}]\!]^{c,w} = \lambda e.think(e) \wedge agent(e) = S \wedge content(e) = \lambda w'.[\![\text{CP}]\!]^{c,w'}$

Surprising indexical shifting patterns In general, 1st person (1π) indexicals are expected to shift to context authors, and 2πs, to addressees (Anand & Nevins 2004, a.o.). This is observed under Turkish *emission* verbs. (*Wh-* extraction controls against quotation. Non-shifted readings are available, but not discussed for space.)

(2) Ali Bora-ya [kimi optu{-m, -n} dedi?   **Reference options under emission verbs**:
     Ali Bora-TO who.ACC kiss -1S -2S say $1\pi \rightarrow$ Ali or actual speaker.
     Who did Ali say to Bora that {'I,' 'you'} kissed? $2\pi \rightarrow$ Bora or actual addressee.

Under Turkish *reception* verbs while 1π indexicals shift to the matrix subject or a from-phrase, a 2π indexical can only shift to a from-phrase, in 3. Sudo (2010) finds that where indexical shifting is licensed under Uyghur reception verbs, 1πs must shift to matrix subjects, and that 2πs lead to unacceptability. Although the subject of reception verbs, the proposal goes, are intuitively addressees, the grammar treats them as authors.

(3) Ali Bora-dan [kimi optu{-m, -n} diye duydu?   **Reference options under reception verbs**:
     Ali Bora-FROM who.ACC kiss -1S -2S DIYE heard $1\pi \rightarrow$ Ali, or Bora, or actual speaker.
     Who did Ali hear from Bora that {'I,' 'you'} kissed? $2\pi \rightarrow$ Ali, or actual addressee.

Our novel finding from Turkish suggests that the grammar sometimes treats the subject of reception verbs as authors (as suggested by Sudo), and sometimes as addressees. Cross-linguistic support for this claim comes from the observation that the Korean long distance reflexive *caki* can refer to matrix subjects or from-phrases under reception verbs, but only to subjects (and not addressees) under emission verbs (Yoon 1989, Park 2014). In addition, 1πs and 2πs can respectively shift to by-phrases of passivized emission and reception reports (explicit or implicit).

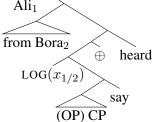(4) a. Ali'ye$_1$ (B$_2$ tarafından) [kimi optu-m$_{2/*1}$] dendi?   b. (A$_1$ tarafından) [kimi optu-n$_1$] diye duyuldu?
     Ali-TO B by   who kiss-1S   say.PASS   A by   who kiss-2S DIYE hear.PASS
     Ali$_1$ was told by Bora$_2$ that he$_{2/*1}$ kissed who?   It was heard by Ali$_1$ that he$_1$ kissed who?

This suggests that the reference possibilities of Turkish indexicals are ruly: 1πs only range over authors, and 2πs only over addressees. To our knowledge, the possibility that both subjects and from-phrases are considered by the grammar as authors is novel and unexpected under proposals like 1.

Proposal, part I: A finer-grained conjunctive theory In certain Turkish ARs, the embedded clause is introduced by *diye*, which derives from *de-* ('say') and the gerundive *-(y)A* ('by X-ing'). Similar 'complementizers' are attested in other languages, including across Turkic. Against the background of a conjunctive model of ARs and following Koopman & Sportiche (1989), we propose: A. The *de-* in *diye* projects an object and a subject, and is semantically contentful. A compact definition is in 5a. The conjunct '$say(e)$,' covers all kinds of propositional 'saying,' from physical utterances of sentences to 'sub voce' mental utterances, i.e., thoughts. B. Its subject is filled by a silent logophoric pronoun, and its object, by the embedded clause (a regular proposition). Logophoricity is viewed as a pronominal feature (cf. gender) and is defined, in 5c, as a partial identity function over individuals. Following Park (2014) and Landau (2015), we assume that this logophor must be bound by a matrix argument, which is only licit if the argument is a logophoric center. C. The morpheme *-(y)A*, in 5d, forms a complex event predicate from its two event predicate arguments by introducing and summing ($\oplus$) events that satisfy them (needed to create complex events paraphrasable roughly as 'he whispered, saying that p' or 'he heard x say that p', see below).

(5) a. $[\![\text{de-}]\!] = \lambda p_{st}.\lambda x_e.\lambda e_v.say(e) \wedge agent(e) = x \wedge content(e) = p$

    b. $[\![\text{duy}]\!] = \lambda e.hear(e),$ $[\![\text{dusun}]\!] = \lambda e.think(e)$, etc.

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

    d. $[\![\text{-(y)A}]\!] = \lambda P_{vt}.\lambda Q_{vt}.\lambda e.\exists e_1, e_2[e = e_1 \oplus e_2 \wedge P(e_1) \wedge Q(e_2)]$

    e. $[\![\text{OP}_{\text{shift}}\ \text{CP}]\!]^{c,i} = [\![\text{CP}]\!]^{i,i}$ (monster, Anand & Nevins 2004)

The general structure of attitude reports is provided by the tree. A derivation is given in 7a and 7b.

Proposal, part II: Capturing the data The table in 6 summarizes possible logophoric controllers in canonical ARs, and the values expected for shifted indexicals. The logophor typically picks out the matrix subject but can pick out other entities, provided that they are logophoric centers. The properties of logophoric centers that are suitable antecedents for logophors and exempt anaphora (e.g. Sells 1987; Huang & Liu 2001; Charnavel & Sportiche 2016) are identical those that can antecede the logophoric subject of *diye*, the diagnostics of which we do not provide here for space. Reports of private mental states and emission introduce a single logophoric center, the subject. Reception reports have two: The subject, and, in addition, a from-phrase. The logophor can be bound by any of these. Ex. 7a gives the two structures for Turkish "Ali heard from Bora that 'I' am a hero," and 7b, their truth conditions. It is predicted that 1π shifts to the argument that binds the logophor. The derivations proceed similarly for 'think' and 'say.'

(6) Attitude report	LOG	1π	2π
A thinks p	A	A	—
A says p to B	A	A	B
A heard p from B	A	A	—
	B	B	A

(7) a. [Ali [$\lambda 7$ [from-Bora [$\lambda 8$ [heard [$\oplus$ [LOG($x_{7/8}$) [say [OP$_{\text{shift}}$ I am a hero]]]]]]]]]

    b. $\exists e, e_1, e_2[e = e_1 \oplus e_2 \wedge hear(e_1) \wedge experiencer(e_1) = a \wedge source(e_1) = b \wedge say(e_2) \wedge agent(e_2) = a/b \wedge content(e_2) = \{i | \text{AUTH}(i) \text{ is a hero in } w_i\}]$

Second person indexicals are accordingly predicted to shift to the addressee of the logophor's controller, so long as one is defined (e.g., with 'say,' but not with 'believe').

Concluding remarks The analysis put forth in this paper suggests that Turkish attitude reports embed the morpheme 'say,' which may be related to the abstract 'say' operator discussed in Kratzer (2006) and Bogal-Albritten (2016). Given our analysis, the typology of indexical shift and the inventory of licensing verbs is simplified: Previously, the Turkic languages (Sudo 2012 on Uyghur; Podobraev 2014 on Mishar Tatar; Şener & Şener 2011 and Özyıldız 2012 on Turkish) appeared to be anomalous (cf. Deal 2017) in that they give the illusion that indexicals can shift under most, if not all attitude verbs, while in most languages there are clear lexical restrictions on which verbs can shift which indexicals. Within the current analysis, indexical shifting can be restricted to occur only under a single attitude verb, *de-* 'say,' e.g., by stipulating that it is the only verb that selects OP$_{\text{shift}}$. It happens though that most attitude and speech verbs 'embed' this verb.