Embedding evidentials across languages

Natasha Korotkova, UCLA / IJN
alterainu@ucla.edu

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The agenda:

step 1: discuss the typology of evidentials vis-a-vis their embedding properties

step 2: show that the common view, based on the assumption that speech acts are not embeddable, does not predict this typology

step 3: review properties of evidentials that are speech act modifiers

step 4: introduce a theory wherein speech acts can be arguments to connectives and attitude predicates: Krifka (forth.)

step 5: re-formulate Faller (2002)'s semantics within Krifka (forth.)'s framework

step 6: discuss constraints on embedding associated with evidentials

1 Introduction

- Evidentiality: grammatical marking of the information source for the proposition expressed by a sentence (Aikhenvald 2004, WALS chapters 77 and 78)

- Cuzco Quechua evidential system: three types of information source commonly signalled by the evidential markers in the world's languages:[1]

(1)　a.　Para-sha-n.　　　　　　　　　PLAIN ASSERTION
　　　　　rain-PROG-3
　　　　　'It is raining.'
　　　b.　Para-sha-n-**mi**.　　　　　　　DIRECT
　　　　　rain-PROG-3-DIR
　　　　　'It is raining, *I see.*'
　　　c.　Para-sha-n-**si**　　　　　　　REPORTATIVE
　　　　　rain-PROG-3-REP
　　　　　'It is raining, *I was told.*'
　　　d.　Para-sha-n-**chá**　　　　　　CONJECTURAL
　　　　　rain-PROG-3-CONJ
　　　　　'It must be raining, *I gather.*'
　　　　　(Faller 2002, 3)

- the *scope proposition*: 'It is raining'

- the *evidential contribution*: type of evidence the speaker has for the scope proposition

2 The empirical landscape

2.1 Embeddable evidentials

Languages that allow evidentials under attitude predicates: Bulgarian (Sauerland and Schenner 2007), Georgian (Boeder 2000; Korotkova 2012), German *sollen* (Sauerland and Schenner 2007; Schenner 2009, 2010a,b; Faller 2006), Japanese *soo-da* (Sauerland and Schenner 2007), Paraguayan Guaraní (Tonhauser forth.), St'át'imcets (Matthewson et al. 2008), Standard Tibetan (Garrett 2001), Turkish (Schenner 2010b; Şener 2011).

GEORGIAN[2]

(2)　masc'avlebel-ma daaskvna　　　　　　　[rom viɣaca-s　　　pandzhara
　　　teacher-ERG　　conclude.3SG.A.3SG.O.AOR that someone-DAT window.NOM
　　　gaaɣia]
　　　open.3SG.A.3SG.O.EV.PST
　　　'The teacher concluded that someone opened the window, *I was told / I infer based on what I see.*'

NB: we know that it is embedding and not quotation because e.g. the possibility of bound anaphora into such clauses (Korotkova 2012)

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[1]Original translations are slightly modifed.

[2]The data come from my fieldwork, conducted in 2012 in Los Angeles and funded by the UCLA Linguistics department.

2.2 Non-embeddable evidentials

Languages that do not allow evidential markers under attitude predicates, e.g. Abkhaz (Chirikba 2003), Cheyenne (Murray 2010), Cuzco Quechua (Faller 2002), or Korean (Lim 2010) (though see Lee (2013)).

Cuzco Quechua (Faller 2002, p. 222, ex.183a):

(3) Marya ni-wa-raq-n   Pilar-(***mi**) chayamu-sqa-n-ta-**n**
     Marya say-1o-pst1-3 Pilar   arrive-pp-3-acc-dir
     p = 'Marya told me that Pilar arrived'.
     Speaker has direct evidence that p.

NB: evidential enclitics *mi, si* and *chá*

— normally can attach to any phrase without changes in the evidential meaning

— cannot occur inside the nominalised complement clause, only on its edge

3 The common view

3.1 Modal vs. illocutionary evidentials

- embeddability vs. non-embeddability: reflex of a general distinction between the two classes of evidentials (Faller 2002, 2006; Matthewson et al. 2008)

    — those that operate at the propositional level; mostly treated as epistemic modals (Izvorski 1997; McCready and Ogata 2007; Matthewson et al. 2008)
    — those that operate at the speech act level (Faller 2002; Murray 2010)

- tests that distinguish the two classes, cf. Papafragou (2006), who uses similar diagnostics to argue that epistemic modals have propositional semantics:

    — interaction with the scope proposition
    — scopal interaction with propositional operators
    — presence/absence of modal subordination effects

- a lot of controversy associated with these tests (Matthewson 2012)
- I will use the following diagnostic from (Faller 2002): (in)ability to report speech acts, e.g. ask a question on someone's behalf
- only illocutionary evidentials can do that

Questions

Cuzco Quechua (Faller 2002, 235, ex.197b)

(4) Pi-ta-s   Inés-qa   watuku-sqa?
     who-ACC-REP Inés-TOP visit-PST2
     'Who did Inés visit?'
     (i) *evidential contribution*: the speaker indicates that somebody else is asking
     (ii) *evidential contribution*:speaker expects hearer to have reportative evidence for his
     or her answer

Korean (Lim 2010, 164-165, ex.45)

(5) Inés-nun nwukwu-lul manna-ess-ta-ni?
     Inés-TOP who-ACC   meet-PST-REP-Q
     'Who did Inés meet?'
     only (ii) *evidential contribution*:speaker expects hearer to have reportative evidence
     for his or her answer

Imperatives

Mbyá (Thomas forth., 3, ex.7)

(6) E-me'ẽ   **je**   ka'ygua chevy pe
     2.IMP-give REP mate   me   to
     'Give me the mate!'
     evidential contribution: the speaker indicates that somebody else performs a com-
     mand

— typically evidentials do not occur in imperatives

— embedded imperatives are a typological rarity; in Mbyá, they can also appear under 'say'
   and 'ask'

— (6) is not quotation:

(7) a. A to B: 'Give the mate to Cirilo!'
     b. B does not hear.
     c. Cirilo to B: 'Give me the mate, I heard' (using (6))

3.2 Predictions

- non-embeddability is a trait of illocutionary evidentials

- Faller (2002): if speech acts only correspond to root clauses and some (illocutionary)
  evidentials modify speech acts, then we expect such evidentials to be non-embeddable

- a one-to-one mapping between non-embeddable and illocutionary evidentials

A counter-example: Mbyá

(8) Juan he'i **je** Maria o-menda.
Juan A3.say **rep** Maria A3-marry
'Juan said that Maria got married.'
evidential contribution: Juan has reportative evidence for p (Thomas forth., 6, ex.26)

4 Proposal

I propose to analyse illocutionary evidentials within Krifka (forth.)'s framework (based on Szabolcsi 1982), wherein speech acts can be arguments to connectives and attitude predicates. It will maintain the spirit of Faller (2002)'s proposal but will avoid difficulties it faces.

4.1 Evidentials as illocutionary modifiers: Faller (2002)

- evidentials are analysed within speech act theory (Searle and Vanderveken 1985; Vanderveken 1990)

- flavours of *speech act*, depending on the *illocutionary force*: assertion, question, exclamation, promise, threat, etc.

- each speech act has several components:[3]

  — the propositional content p;
  — the illocutionary force ILL;
  — the sincerity conditions SINC: a set of mental attitudes of the speaker towards p such that they should be met in order for the speaker to be sincere in performing a given speech act. E.g. in plain assertions the sincerity condition is for the speaker to believe p (cf. Gricean *Maxim of Quality*);
  — a degree of strength, e.g. 0 for plain assertions or -1 for modal claims, often called *weak assertions*.

- Faller (2002): Cuzco Quechua evidentials modify sincerity conditions of an utterance and are functions from speech acts to speech acts.

(9) Para-sha-n.
rain-PROG-3
$p =$'It is raining.'
ILL $=$ ASSERTS$_s(p)$
SINC $= \{Believe(s, p)\}$
STRENGTH $= 0$ (Faller 2002, 25, ex.15)

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[3]I only mention those that are relevant for the semantics of evidentials.

Semantics for the direct evidential *mi*

(10) Para-sha-n-**mi**.
      rain-PROG-3-MI
      $p =$ 'It is raining.'
      ILL $=$ ASSERTS$_s(p)$
      SINC $= \{Bel(s,p), See(s, e_p)\}$
      STRENGTH $= +1$ (Faller 2002, 25, ex.16)

(11) semantics of *-mi* (Faller 2002, 167, ex.130) (the simplified version; *-mi*'s meaning in questions, given in (Faller 2002, 192, ex.232))

$$\textbf{-mi:} \quad \begin{array}{l} \text{ASSERT}(p) \\ \text{SINC} = \{Bel(s,p)\} \end{array} \quad \longmapsto \quad \begin{array}{l} \text{ASSERT}(p) \\ \text{SINC} = \{Bel(s,p), Bpg(s, Bel(s,p))\} \end{array}$$

Bpg: the speaker has best possible grounds to believe p such as direct visual evidence or knowledge from an authority, e.g. an encyclopedia

Semantics for the reportative evidential *si*

(12) Para-sha-n-**si**.
      rain-PROG-3-SI
      $p =$ 'It is raining.'
      ILL $=$ PRESENT(p)
      SINC $= \{\exists s_2 \, [\, Assert(s_2, p) \, \wedge \, s_2 \notin \{h, s\} \,]\}$ (Faller 2002, 25, ex.16)

(13) semantics of *-si* (Faller 2002, 200, ex.167)

$$\textbf{-si:} \quad \begin{array}{l} \text{ASSERT}(p) \\ \text{SINC} = \{Bel(s,p)\} \end{array} \quad \longmapsto \quad \begin{array}{l} \text{PRESENT}(p) \\ \text{SINC} = \{\exists s_2 \, [\, Assert(s_2, p) \, \wedge \, s_2 \notin \{h, s\} \,]\} \end{array}$$

Why PRESENT: reportative *-si* can be used to report assertions even if the speaker knows the scope proposition to be false:

(14) Pay-kuna-s ñoqa-man-qa qulqi-ta   muntu-ntin-pi saqiy-wa-n, mana-má riki
      (s)he-PL-SI I-ILLA-TOP   money-ACC lot-INCL-LOC leave-1O-3 not-SURP right
      riku-sqa-yki ni   un sol-ta   centavo-ta-pis saqi-sha-wa-n-chu
      see-PP-2   not one Sol-ACC cent-ACC-ADD leave-PROG-1O-3-NEG
      'They left me a lot of money, *as it is said*, but, as you have seen, they didn't leave me one sol, not one cent.' (Faller 2002, 191, ex.152)

4.2 The formalism

Unless specified otherwise, I am faithful to Krifka (forth.), see also Thomas (forth.) for another empirical application of this system.

4.2.1 The general set-up

- four basic types:

  - individuals, type e
  - truth values, type t
  - indices, type s
    - world-time points
  - contexts, type c
    - triples of the form $\langle c_s, c_a, c_t \rangle$ where c_s stands for the speaker, c_a for the addressee, c_t for the utterance index

- domain of individuals E
- domain of indices I, ordered by a relation of precedence $\leq$

  - transitive
  - reflexive
  - left-linear

- each index

  - is the root of an option space that represent the future
  - is the end of a linearly ordered set of indices that represent the past
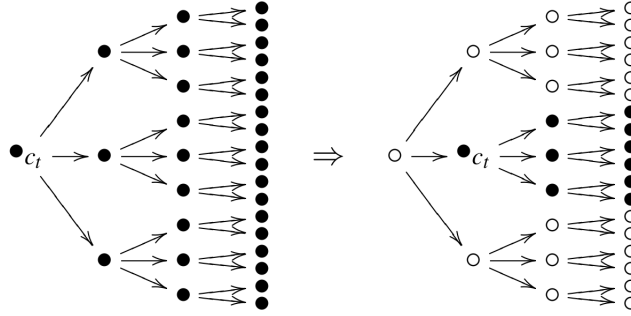
(15)
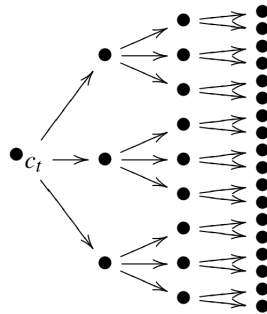
4.2.2 Anatomy of speech acts

- speech acts involve a change of states: from one where certain commitments do not hold to one where they do hold
- this change is recorded as the change in indices

- speech acts update the context so that the utterance index c_t moves forward in its option space (this idea follows Szabolcsi 1982)

(16)

- index change is defined via *index incrementation* with a certain illocutionary condition:

(17) a. find the closest index i' such that $i \leq i'$ and that an illocutionary condition F is true of i' (after Thomas (forth.), I assume that time is discrete)
  b. an index i' increments i with F: $i \leq i'[F(i')]$

- conditions on commitments are recorded with the help of illocutionary operators, which are defined in terms of illocutionary predicates

  — *Assert* for assertions
  — *Direct* for commands
  — *Quest* for commands

- Speech Act Potential (SAP, an element that can be used to perform a speech act in a context): a function that maps a speaker x, an addressee y and an index i to an index i' that increments i with a specific condition on commitments of x and y

(18) $\lambda F.\lambda x.\lambda y.\lambda i.\iota i'[i \leq i'[F(x)(y)(i')]]$
  where F is a variable over illocutionary predicates, x is the speaker and y is the hearer

- a speech act is an update of the common ground with a speech act potential
- illocutionary operators

  – head ForceP
  – are functions from propositions to speech act potentials

(19) semantics of ASSERT:
  a. $[\![\,\text{ASSERT}\,]\!]^{M,g} = \lambda p.\lambda x.\lambda y.\lambda i.\iota i'\,[\,Believe(p)(x)(i)\,.\,i \leq i'\,[\,Assert(p)(x)(y)(i')\,]\,]$
  b. $Assert(\text{p})(\text{x})(\text{y})(\text{i})$ is true iff in i, x is taking up assertive commitments towards y with respect to p

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NB: I slightly modify Krifka's treatment of illocutionary operators by adding definedness conditions; this move incorporates sincerity conditions, which otherwise are conflated with the illocutionary force

(20)   cf. Krifka's/Thomas's version of ASSERT:

a. $[\![\text{ASSERT}]\!]^{M,g} = \lambda p.\lambda x.\lambda y.\lambda i.\iota i' \, [\, i \leq i' \, [\, Assert(p)(x)(y)(i') \,] \,]$
b. $Assert$(p)(x)(y)(i) is true iff in i, x is committed to act as though s/he believes that p, and y is a witness to this commitment

When the addressee knows that the speaker does not believe p:

– under Krifka's and Thomas's treatment, the commitments are not fulfilled so assertion is not taking place
– under my treatment, the assertion takes place but the speaker is insincere and is judged as uncooperative
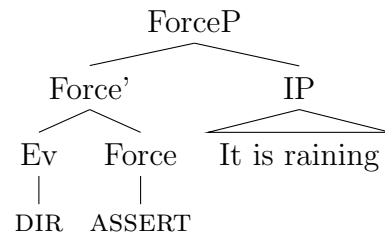
4.2.3   Semantics for evidentials

- evidential markers as SAP modifiers: they take SAP as an argument and return a modified SAP

- the evidential contribution is recorded as the definedness condition: I pretend to be agnostic about whether it is a presupposition or something else, see e.g. (Murray 2010) for the discussion

Semantics for the direct evidential *mi*

(21) $[\![\text{DIR}]\!] = \lambda P.\lambda p.\lambda x.\lambda i.\iota i' \, [\, Believe(p,x) \wedge Bpg(Believe(p,x))(x)(i) \,.\, P(p)(x)(y)(i') \,]$
        where $Bpg(Believe(p,x),x,i)$ is true iff at i, the speaker x has the best possible grounds to believe p, which can be direct visual evidence or knowledge from an authority; and where P is an illocutionary predicat

(22)   Para-sha-n-mi.
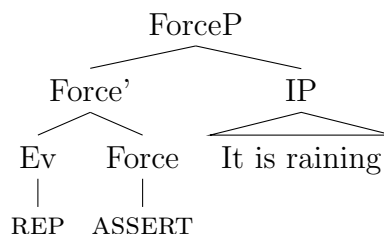   rain-PROG-3-MI
        'It is raining, *I see*.'

        ForceP
        ├── Force'
        │   ├── Ev ── DIR
        │   └── Force ── ASSERT
        └── IP
              └── It is raining

(23) $[\![\,[_{\text{ForceP}} \,[_{\text{Force'}} \text{DIR} \,[_{\text{Force}} \text{ASSERT}]\,] \,[_{\text{IP}} \text{It is raining}]\,]]\!]^{M,c,g} = \lambda x.\lambda i.\iota i' \, [\, Believe([\![\text{It is raining}]\!]^{M,c,g},$
        $\wedge \, Bpg(Believe([\![\text{It is raining}]\!]^{M,c,g}, x))(x)(i) \,.\, Assert([\![\text{It is raining}]\!]^{M,c,g})(x)(y)(i')]$

Semantics for the reportative evidential *si*

(24) $[\![\text{REP}]\!] = \lambda A.\lambda p.\lambda x.\lambda i.\iota i' [\,\exists z\,[\,z \notin \{x,y\} \wedge \exists i'' \leq i \wedge i'' = P(p)(z)(x)(i)\, \textbf{.}\, \text{PRESENT}(p)(x)(y)(i')\,]\,]$

(25)   Para-sha-n-si.
       rain-PROG-3-SI
       'It is raining, *I was told*.'

ForceP
```
        ForceP
       /      \
   Force'      IP
   /    \      /  \
  Ev   Force  It is raining
  |      |
 REP  ASSERT
```

(26) $[\![\,[_{ForceP}\,[_{Force'}\,\text{REP ASSERT}\,]\,[_{IP}\,\text{It is raining}\,]\,]\,]\!]^{M,c,g} =$
       $\lambda x.\lambda i.\iota i'\,[\,\exists z\,[\,z \notin \{x,y\} \wedge \exists i'' \leq i \wedge Assert\,(\,[\![\,\text{It is raining}\,]\!]^{M,c,g}\,)\,(z)(x)(i'')\,\textbf{.}$
       $Present\,(\,[\![\,\text{It is raining}\,]\!]^{M,c,g})\,(x)(y)(i')\,]$

NB: Thomas's semantics for the Mbya reportative *je* is different (Thomas forth., 9, ex.41):

(27) $[\![\,je\,]\!] = \lambda A.\lambda x.\lambda i.\iota i'\,[\,\exists z\,[\,z \notin \{x,y\} \wedge i' = A(z)(y)(i)\,]\,]$

It just shifts the speaker of a speech act with *je* to a third party and means that:

— a third party has assertive commitments with respect to p towards the current addressee

— the current speaker has no commitments whatsoever with respect to p towards the current addressee

4.3   Embedded speech acts

- speech acts correspond to root clauses that are of syntactic category ForceP (following (Rizzi 1997))

- certain root phenomena, such as German V2, can be embedded:

   (28)   a.   Mary   sagte,   dass sie   John   hasst.
               Mary.NOM say.3SG.PST that she.NOM John.ACC hate.3SG.PRES
               'Mary said that she hates John.'
          b.   Mary   sagte,   sie   hasst   John.
               Mary.NOM say.3SG.PST she.NOM hate.3SG.PRES John.ACC
               'Mary said, she hates John.'

- provided a strict correspondence between syntax and semantics, such embedded root clauses should be interpreted as embedded speech acts

- this line of argumentation follows (Hooper and Thompson 1973) in that embedded root phenomena in English are licensed in assertive environments (though see Heycock 2005)

- to avoid the type mismatch, we need to have speech-act-taking predicates

- Krifka argues that certain predicates, e.g. *tell, ask* and *wonder*, are ambiguous between a proposition-embedding reading and a speech-act embedding reading

- with the second reading, it is possible to perform two speech acts with one sentence

- (in)ability of speech acts to appear in the complements of attitude predicates stems from selectional properties of respective predicates rather than from some property of speech acts

4.4 Predictions

Prediction #1

- if evidentials are analysed as SAP modifiers, they should be, in priciple, embeddable

- this explains (8), repeated below:

(29) Juan he'i **je** Maria o-menda.
      Juan A3.say **rep** Maria A3-marry
      'Juan said that Maria got married.'
      evidential contribution: Juan has reportative evidence for p (Thomas forth., 6, ex.26)

Prediction #2

- if evidentials are analysed as SAP modifiers, they should be able to appear in the complements of predicates that license embedded root phenomena

- borne out in Mbyá: *je* can only appear in the complement of 'say'

Prediction #3

If illocutionary evidentials are not embeddable, we cannot attribute non-embeddability solely to their semantic properties.

5 Constraints on embedding

5.1 The embedding strategy

Hypothesis: evidentials, illocutionary or not, are confined to finite clauses. This hypothesis explains why (3), repeated below, is ungrammatical: it is a nominalisation. Nominalisations across languages are known to have a reduced functional structure (Alexiadou 2001) and are likely to lack structural space for evidentiality, see Rooryck (2001a,b) and Speas (2010) on its syntactic reflexes.

- Cuzco Quechua

  - in (3) (repeated below) the embedded clause is a nominalisation:

    (30) Marya ni-wa-rqa-n   Pilar-(***mi**) chayamu-sqa-n-ta-**mi**
          Marya say-1O-PST1-3 Pilar   arrive-PST2-3-ACC-DIR
          p = 'Marya told me that Pilar arrived'.
          Speaker has direct evidence that p.

  - I do not have relevant data from Cuzco Quechua, but its relative Imbabura Quechua lacks finite complementation (Korotkova 2013)

- Turkish evidential morphology (Şener 2011, 82)

  - not possible in nominalisations
  - appears in finite complements

- Daghestanian languages (Timur Maisak, p.c.)

  - evidential distinctions are impossible in non-finite clauses

- Cheyenne (Murray 2010, Chapter 2: 8-42) and Abkhaz (Chirikba 2003):

  - evidential markers are complementarily distributed with dependent mood, which is obligatory in all subordinate clauses
  - no space for the evidential markers in subordinate clauses

5.2 The embedder

Compare vidential-embedding properties of three predicates, 'say', 'think', and 'know', in Bulgarian (Sauerland and Schenner 2007), Georgian (Korotkova 2012), Japanese (*soo-da*, Sauerland and Schenner 2007), German (*sollen*, Schenner 2009), Mbyá (Thomas forth.), Tibetan (Garrett 2001) and Turkish (Şener 2011) (cf. (Sauerland and Schenner 2007, 14, chart 42)):

	'say'	'think'	'know'
Bulgarian	✓	*	✓
Georgian	✓	✓	*
German	✓	*	✓
Japanese	✓	*	✓
Mbyá	✓	*	*
Tibetan	✓	✓	*
Turkish	✓	✓	✓

- how to explain such distribution?
- the illocutionary theory I develop above preidicts Mbyá but the rest is still a problem
- modal theories of evidentiality suggest that evidentials would pattern with epistemic modals when embedded (Anand and Hacquard 2013)

  - epistemics are licensed under representational attitudes: 'say', 'think', 'realise'
  - epistemics are not licensed under non-representational attitudes: 'want', 'wish', 'demand'
  - possibility but not necessity modals are licensed under hybrid attitudes: 'fear', 'hope', 'doubt'

- in Smirnova (2011)'s analysis of the Bulgarian indirect evidential, it is a necessity modal with a peculiar temporal component. Then it should be licensed under 'think' and 'believe' but it is not.

- according to Faller (2006, 2012), German *sollen* is a necessity modal with a non-realistic modal base. Then it should be banned from under hybrid attitudes. However, it is perfectly licensed under negative predicates of doubt and denial (Schenner 2009).

- I suggest that we need to look at the evidential shift to explain where evidentials appear

- shifted indexicals are picky in where they appear (Sudo 2012) and so are evidentials

- Tibetan evidentials shift obligatorily when embedded:

(31) a. khyed.rang/kho dge.rgan red
          you/he   teacher   [ind cop]
          'You are / he is a teacher, *as I was told or infer.*' (Garrett 2001, 208, ex.2)
      b. tashi kho dge.rgan red   lab-gi-'dug
          Tashi he   teacher [ind.cop] say-[dir   imp]
          'Tashi$_i$ says he$_j$ is a teacher, *as Tashi was told or infers.*'(Garrett 2001, 208, ex.4)

- Tibetan evidentials only are licensed under verbs of speech and thought:

(32) a. bkra.shis kho dge.rgan **yin**   bsam-gi-'dug
          Tashi   he   teacher [EGO COP] think-[DIR IMP]
          'Tashi$_i$ thinks he$_i$ is a teacher.' (Garrett 2001, ex.7-a, 211)
      b. *bkra.shis kho dge.rgan **yin**   ha.go-gi-yod.red
          Tashi   he   teacher [EGO COP] know-[DIR IMP]
          Intended: 'Tashi$_i$ knows he$_i$ is a teacher.' (Garrett 2001, ex.9, 212)

- these are the contexts where logophors appear (Charnavel 2012; Pearson 2013)

6   Conclusions

▶ the illocutionary vs. modal distinction in the evidential domain is not helpful in explaining the embeddability patterns:

  – illocutionary evidentials in Mbyá are embeddable

▶ I develop a theory wherein embedding illocutionary evidentials is possible

▶ this broadens the typology of embedded speech acts

▶ the new theory provides a more articulated syntax for evidentials

  – the now-common view misses an empirical generalisation that all evidentials, not only illocutionary, are banned from non-finite clauses

▶ the locus of cross-linguistic variation is partially shifted to syntax

▶ the illocutionary vs. modal distinction in the evidential domain is not always helpful in explaining where embedded evidentials appear

Acknowledgements

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