Hearsay and (non-)commitment

Work in progress; comments welcome

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The well-known puzzle about hearsay claims (Faller 2002 and later work)

Sp isn't required to endorse ϕ as diagnosed by explicit disavowals

- ▶ **The pattern**
  I hear ϕ but ϕ is not the case.

(1) [Git] **allegedly** ignores files but **actually adds them**. (https://bit.ly/3lkddxJ)

- ▶ **Previous approaches**
  Hearsay claims: not assertions (Faller 2002, 2019; Murray 2014)
- ▶ **Proposal**
  Hearsay claims: assertions whose main point is the evidential signal

Theory-neutral terminology: 'endorsement' instead of 'commitment'
Belief (mental attitude) vs. discourse commitment (cf. Geurts 2019): very
difficult to tease apart in case of evidentials (Korotkova 2016, 2021b)

Roadmap

Evidentiality I

Evidentials

Linguistic expressions that signal the source of the semantically determined information for an utterance (Aikhenvald 2004, 2018; Korotkova 2021b; Murray 2017, 2021 a.o.)

- ▶ Two main contributions
    - ▶ Scope proposition: $\phi/\square\phi/\diamond\phi$
    - ▶ Evidential signal: evidence/source for the scope proposition
- ▶ Kinds of evidence (in broad strokes; based on Willett 1988; see Krawczyk 2012)
    - ▶ Firsthand (visual/auditory/other perceptual)
    - ▶ Inferential (reasoning/observable results)
    - ▶ Hearsay (secondhand/thirdhand/folklore)

Evidentiality II

▶ Evidentials as a class: much in common (Korotkova 2015, 2016, 2019)
  ▶ Conversational dynamics (dialogues, questions)
  ▶ Behavior in attitudes (shiftability, 'de se' construal)
▶ Today: a case of systematic variation
  ▶ Hearsay vs. non-hearsay
  ▶ Reflection of a more general contrast: speech reports vs. mental attitudes (cf. Anand and Hacquard 2014; Anand et al. 2017)

Endorsement & disavowals I

▶ Disavowals
   ▶ 'ϕ is not the case'/'I know that $\neg\phi$'/ 'I don't believe ϕ'
   ▶ Empirical tool to track endorsement
▶ Systematic contrast
   ▶ Non-hearsay evidentials (cf. Murray 2017:17–21): require endorsement, ban disavowals (but may allow hedging/less than 100% certainty/doubt)
   ▶ Hearsay evidentials: commonly, though not universally (pace AnderBois 2014) allow disavowals, arguably encode no endorsement

Endorsement & disavowals II

▶ Distinct marking for hearsay; cf. also Cheyenne (Algonquian: Montana, US; Murray 2014)

(2) Cuzco Quechua (Quechan: Peru; adapted from Faller 2002:163,198)

    a.   #Para-sha-n-**mi**,   ichaqa mana **crei-ni-chu**.   [Non-hearsay: firsthand]
           rain-PROG-3-**DIR**, but   not   **believe-1-NEG**
           Intended: 'It's raining, **I see**, but I **don't believe** it'.

    b.   ✓Para-sha-n-**si**,   ichaqa mana **crei-ni-chu**.   [Hearsay]
           rain-PROG-3-**REP**, but   not   **believe-1-NEG**
           ≈'**I hear** that it's raining, but I **don't believe** it'.

Endorsement & disavowals III

▶ Indirect evidentiality: same morphology for inference and hearsay

(3) Georgian (South Caucasian: Georgia, Azerbaijan; own data)

   a.   *Maria has red eyes, you think she was crying, later learn it was an allergy.*
       [Non-hearsay: inference]

       #maria-s   **utiria**   magram asi   **ar**   **aris**
         Maria-DAT cry.3SG.S.**IND.PST** but   this NEG be.3SG.S.PRES
         Intended: 'Maria was crying, **I infer**, but that **is not true**.'

   b.   *Fox News reports that California legalized marijuana.*   [Hearsay]

       ✓kalifornia-s   k'anonier-i **gauxdia**   marihuan-is   gamoq'eneba
        California-DAT legal-NOM make.**IND.PST** marijuana-GEN   usage.NOM
       magram asi **ar**   **aris**
       but   this NEG be.3SG.S.PRES
        ≈'**I hear** that California legalized marijuana, but that **is not true**.'

Endorsement & disavowals IV

▶ Not just 'grammatical' evidentials; cf. also *according to* (Kaufmann and Kaufmann 2020) or Tagalog *daw* (Austronesian: Philippines; schwager2010)

(4) English *allegedly*

    a.   ...helicopters (**allegedly** indigenous **but in fact** produced under an Italian–British license)   (https://bit.ly/3Hg42wY)

    b.   [caveat: ϕ is a subjective claim]
            Chicago weather in January is **allegedly** unbearable, **but I don't mind it**.
                                       (https://bit.ly/3M0FknV)

Bottom line

▶ Emerging typology [pattern the same in attitudes, see appendix]

	OBLIGATORY ENDORSEMENT	OPTIONAL/ABSENT ENDORSEMENT	
NON-HEARSAY	✓	✗	
HEARSAY	✓	default endorsement	distancing

▶ Desiderata for a theory

① Account of absent/optional endorsement & disavowals
② Principled explanation of non-hearsay
③ Space for variation in hearsay

Roadmap

1 Empirical landscape

2 Previous approaches

3 Proposal

4 Outlook

Evidentiality & the architecture of speech acts

▶ **Pivotal in theorizing about speech acts** (Faller 2002; Murray 2014; Murray and Starr 2020 a.o.)

▶ **Prominent strand of research** (Faller 2019; Northrup 2014; Krifka 2019)
  - ▶ Scope proposition: At-Issue
  - ▶ Evidential signal: often argued to be Not-At-Issue
  - ▶ Evidentials: update discourse commitments of the interlocutors
  - ▶ Root declaratives: always Sp's commitments, dependent in case of hearsay

▶ Utterances with evidentials: special assertions (weak/modalized/hedged; cf. also McCready 2015)

▶ Hearsay claims: systematic exceptions

The puzzle of disavowals I

▶ Possibility of disavowals: absent/optional commitment (AnderBois 2014; Murray 2014; Faller 2019 on evidentiality; see also Koev 2021 on parentheticals)

(3b) Georgian   [Hearsay]
      Fox News reports that California legalized marijuana.

      ✓kalifornia-s   k'anonier-i **gauxdia**   marihuan-is
       California-DAT   legal-NOM **make.IND.PST** marijuana-GEN
      gamoq'eneba magram asi **ar   aris**
      usage.NOM   but   this **NEG be.3SG.S.PRES**
         ≈'**I hear** that California legalized marijuana, but that **is not true**.'

▶ Analytical options [some; see discussion in Faller 2019; Korotkova 2021b]
  ▶ Informational modality (Faller 2011; Kratzer 2012)
  ▶ Perspectival shift (Smirnova 2012; AnderBois 2014)
  ▶ Speech acts of presentation (Faller 2002, 2019; Murray 2014, 2017)

The puzzle of disavowals II

▶ **Assertions** (Stalnaker 1978; Farkas and Bruce 2010 a.o.)

    ▶ raise issues

    ▶ signal Sp's commitment

    ▶ aim to add ϕ to CG

▶ **Presentations** (Faller 2019; Murray 2014, 2017 works similarly)

    ▶ raise issues

    ▶ signal third-party commitment

    ▶ **may** result in assertion

▶ **Presentational hearsay** (modified Table model (Farkas and Bruce 2010) adapted from Faller 2019; cf. also Gunlogson 2003 on dependent commitments)

$DC_{Speaker}$	Table	$DC_{Addressee}$
$TC_{Principal} \cup \phi$	⟨ California legalized marijuana; $\{\phi\}$ ⟩	TC_{Ad}
$TC_{Animator \neq Principal}$		
$RepC_{Animator} \cup \phi$		$RepC_{Ad}$
cg	$ps = \{cg\}$	

(TC: the set of truth commitments; RepC: the set of commitments for which there is hearsay evidenc:, the animator: the actual speaker (person uttering the sentence); the principal: the person whose beliefs are conveyed; often the animator = the principal.)

The puzzle of disavowals III

▶ Why can't hearsay claims be assertions?

▶ Key assumptions

Ⓐ Assertion requires knowledge/justified belief/commitment (assertion norms / the Quality Maxim; Williamson 2000; Lackey 2007; Benton 2016 a.o.)
#It's raining but I don't believe it's raining

Ⓑ Asserted content: has to be At-Issue (true across the board; definitional in e.g. Potts 2005; Farkas and Bruce 2010; Murray 2014)

Ⓒ Evidential signal: hard-wired to be Not-At-Issue (Izvorski 1997; Faller 2002; Murray 2014 a.o.; see discussion in Korotkova 2020)

In a nutshell
Hearsay claims arguably aren't assertions because the only
potentially assertable AI content ϕ (Assumptions B and C) can't be
asserted due to the absence of belief/commitment (Assumption A)

Roadmap

Upshot

▶ **Evidential signal**: variable At-Issue status
▶ **Disavowals**: the evidential signal becoming At-Issue
▶ **Hearsay claims**: assertions, just like 'I hear ϕ'
▶ **Further empirical support**: contrast with bona fide parentheticals

Evidential (not–)at–issueness I

▶ Much of the literature: evidential signal hard-wired to be NAI
(Izvorski 1997; Faller 2002, 2019; Murray 2014, 2017 a.o.; see overview in
Korotkova 2020)

▶ At-issueness:
  ▶ Can be construed in several ways (see overview in Koev 2018)
  ▶ Correspondingly: can be diagnosed in different ways
  ▶ Not all content **must be** conventionally marked as NAI (cf. 'discourse
  parentheticals'; Simons 2007; Hunter 2016; Hunter and Asher 2016)

Evidential (not–)at–issueness II

▶ **Evidential not–at–issueness**

    ▶ Best understood through the relevance to the QUD (Korotkova 2020; see also Roberts 2019 on the evidential component of modality)

    ▶ NAI status ≈ QUD–irrelevance

    ▶ Diagnosed via answerhood (Simons et al. 2010; Tonhauser et al. 2013): evidentials systematically don't answer questions about evidence

(5)   Georgian (own data)
    ✓*Question 1 (targets ϕ): Is marijuana legal in the US?*
    #*Question 2 (targets evidential signal): What makes you think that California legalized marijuana?*

    kalifornia–s   k'anonier–i **gauxdia**   marihuan–is   gamoq'eneba.
    California–DAT legal–NOM make.**IND.PST** marijuana–GEN usage.NOM
    ≈'**I hear** that California legalized marijuana.'

▶ Based on examples like (5): only scope proposition is AI

Evidential (not–)at–issueness III

Advantage of the QUD–definition

Evidential signal **needn't be** conventionally marked as NAI

- ▶ NAI/Backgrounded by default
- ▶ (N)AI status may change as the discourse changes
- ☞ Support for the variable (N)AI status (Korotkova 2020)
  - ▶ some evidentials answer questions when focused
  - ▶ many can't be focused for independent reasons

Explicit disavowals; new take I

▶ **Explicit disavowals**
  ▶ Endorse—and assert—$\neg\phi$ (or similar; depending on the form)
  ▶ Make it impossible to assert ϕ
  ▶ Indicate a QUD shift: from ϕ to evidence/opinions about ϕ
  ▶ Enable the evidential signal—the fact of the report—to become AI
  ▶ Possible due to the variable AI status of the evidential signal
  ▶ More accurate: the evidential signal becomes more AI, the AI-NAI divide best understood as a continuum (Tonhauser et al. 2018)

Explicit disavowals; new take II

▶ **Previous accounts**: evidential signal always NAI, akin to slifting parentheticals & appositives (Murray 2014, 2017)

▶ **Proposed account**: disavowals possible due the variable AI status

▶ **Prediction**: contrast in the availability of disavowals between hearsay evidentials and bona fide parentheticals

Explicit disavowals; new take III

▶ **Prediction borne out**: slifting parentheticals resist disavowals, unlike evidentials and regular embeddings

(6) QUD–at-issueness (see discussion in Koev 2018; Simons 2007; Snider 2017)

    a. *Question 1 (targets the fact of the report): What did she do next?*
       Slift: #The Democrats won, **she announced/claimed**.
       Embedding: ✓**She announced/claimed** that the Democrats won.

    b. *Question 2 (targets the content of the report): Who won the election?*
       Slift: ✓Democrats won, **she announced/claimed**.
       Embedding: ✓**She announced/claimed** that the Democrats won.

(7) Availability of disavowals (observation goes back to Jackendoff 1972; see Koev 2021 for recent discussion and experimental evidence)

    a. Slift: #The Democrats won, **she announced/claimed**, **but I don't believe it**.

    b. Embedding: ✓**She announced/claimed** that the Democrats won **but I don't believe it**.

Explicit disavowals; new take IV

▶ Similar contrast between evidentials and parentheticals: German *sollen*, Bulgarian evidential perfect (other lgs: coming soon)

(8) Reportative *sollen*

Nächste Woche **sollen** die Corona Maßnahmen gelockert werden,
next week **REP.3SG.PL** DEF corona measure.PL loosen.PRT AUX.3PL.PRES
aber das glaube ich nicht.
but this believe.1SG.PRES I NEG
'**I hear** that COVID-19 measures will be loosened next week, **but I don't believe it**.'

(9) *As*-parenthetical (always NAI; doesn't answer questions)

#Nächste Woche werden die Corona Maßnahmen gelockert, **wie die**
next week AUX.3PL.PRES DEF corona measure.PL loosen.PRT as DEF
Regierung bekannt gab, **aber das glaube ich nicht**.
government known make.3SG.PST but this believe.1SG.PRES I NEG
'COVID-19 measures will be loosened next week, as the government announced,
but I don't believe it.'

Explicit disavowals; new take V

Bottom line

- ▶ **Evidentials vs. parentheticals**: contrast unexpected if the speech act of presentation is an available strategy
- ▶ **Present claim**:
  - ▶ Disavowals have to do with the variable (N)AI status rather than the architecture of speech acts
  - ▶ Possible only for those expressions that can be AI
- ▶ **More research needed**: conversational dynamics of explicit disavowals

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Endorsement I

- ▶ Is presence/absence of endorsement encoded semantically?

- ▶ **Non–hearsay evidentials**
  - ▶ Obligatory endorsement (ex.2a,3a), likely semantic
  - ▶ ϕ must be a live possibility; much like doxastic predicates (*think, infer, conclude, doubt, hope …*) and mental attitudes at large
  - NB Clausal embeddings: disavowals only for non–1–person cases
  - ▶ Evidentials: always a 1–person attitude, hence no disavowal
    (evidentials constitute self–attributions; Korotkova 2016, 2019)

(10) a. 3-person:
✓Margaret **believes/hopes/doubts** that a unicorn stole our cookies, **but that can't be true**.

b. 1-person:
#I **believe/hope/doubt** that a unicorn stole our cookies, **but that can't be true**.

Endorsement II

- ▶ **Hearsay evidentials**: cross-linguistic variation
  - ▶ Obligatory endorsement with hearsay [see appendix]: rare, but possible, e.g. Turkish (pace AnderBois 2014); much like speech predicates *be right, agree*
  - ▶ Endorsement by default, in the absence of disavowals: common, but not universal (pace AnderBois 2014); such evidentials can report expert/highly reliable claims (e.g. the Cuzco Quechua case; Faller 2002, 2019)
  - ▶ Distancing effect: Sp genuinely agnostic about ϕ; German *sollen*; Spanish *dizque* (Martínez Vera 2020); *allegedly*; mixed quotation (constructions discussed in Maier 2014; he doesn't talk about pragmatics)

Endorsement III

▶ **Obligatory endorsement**: likely encoded semantically [see appendix on data in attitudes, litmus test for semantic/pragmatic distinction]

▶ **Default endorsement**: vanilla relevance implicature (idea mentioned in passim, and rejected, in Faller 2002)

    ▶ Sp uttered `I hear` ϕ
    ▶ ϕ: At-Issue (by default), natural candidate for assertion
    ▶ Why would Sp assert ϕ if $\phi \nsubseteq DOX_{(Sp,w)}$?
    ▶ Inference: $\phi \subseteq DOX_{(Sp,w)}$
    ▶ Disavowal: implicature cancellation
    ▶ Further support: implicature cancellation generally licensed by a QUD-shift (Mayol and Castroviejo 2013, cf. also Rett 2020)
    ▶ Faller (2019) derives default commitment via the Collaborative Principle, which predicts more uniformity than we find

▶ **Distancing**

    ▶ Semantic undecidedness $\phi \nsubseteq DOX_{(Sp,w)}$ & $\neg\phi \nsubseteq DOX_{(Sp,w)}$
    ▶ Can it be derived pragmatically instead?

Endorsement IV

Bottom line

- **Hearsay vs. non-hearsay**:
    - parallel to the divide between doxastic attitudes vs. communicative predicates (cf. Anand and Hacquard 2014; Anand et al. 2017)
    - language conceptualizes speech reports differently from mental attitudes
- **Variation within hearsay wrt endorsement**:
    - only expected!
    - parallel to the lexical variation within communicative predicates (cf. Grimshaw 2015)
    - (not variation derived from the shape of the speech report, as in Bary and Maier 2021)
    - another case of lexical variation: just like with communicative predicates, only some hearsay markers take quotes as arguments (Korotkova 2017)
- More research needed!

Roadmap

1. Empirical landscape

2. Previous approaches

3. Proposal

4. Outlook

Wrap-up

- **Main puzzle**: disavowals with hearsay evidentials
- **Previous account**s: hearsay claims as non-assertive speech acts
- **Proposal**:
    - hearsay claims as assertions
    - enabled by the variable discourse status of the evidential signal
- **Further support**: disavowals with ✓evidentials vs. # parentheticals
- **Variation in endorsement**:
    - Non-hearsay: much like doxastic predicates
    - Hearsay: much like communicative predicates and speech reports at large

Broader consequences

▶ Special behavior of hearsay (the disavowal puzzle; the relayed speech acts puzzle, AnderBois 2018; Korotkova 2017): common argument in favor of speech–act approaches to evidentiality as a whole

▶ This talk (along with e.g. modal accounts of the puzzle): a simpler alternative paired with reasoning about the QUD

▶ Evidentials can be analyzed as dealing with speech acts; do they have to?

    ▶ Many speech–act accounts (not all! cf. Krifka 2019): developed for root clauses

    ▶ Evidentials in attitudes (when embeddable; variation syntactic, not semantic, Korotkova 2021a): more suitable for a non-speech act account

Thank you!

Work in progress; comments welcome

Aikhenvald, A. Y. (2004). *Evidentiality*. Oxford: Oxford University Press.

Aikhenvald, A. Y. (Ed.) (2018). *The Oxford Handbook of Evidentiality*. Oxford: Oxford University Press.

Anand, P., J. Grimshaw, and V. Hacquard (2017). Sentence embedding predicates, factivity and subjects. In C. Condoravdi (Ed.), *Lauri Karttunen FestSchrift*. CSLI.

Anand, P. and V. Hacquard (2014). Factivity, belief and discourse. In L. Crnič and U. Sauerland (Eds.), *The Art and Craft of Semantics: A Festschrift for Irene Heim*, pp. 69–90. Cambridge, MA: MITWPL.

AnderBois, S. (2014). On the exceptional status of reportative evidentials. In T. Snider, S. D'Antonio, and M. Weigand (Eds.), *Semantics and Linguistic Theory (SALT) 24*, pp. 234–254. LSA and CLC Publications.

AnderBois, S. (2018). An illocutionary account of reportative evidentials in imperatives. In D. Burgdorf, J. Collard, S. Maspong, and B. Stefánsdóttir (Eds.), *Semantics and Linguistic Theory 27*, pp. 459–479.

Bary, C. and E. Maier (2021). The landscape of speech reporting. *Semantics and Pragmatics 14*(8), 1–48.

Benton, M. A. (2016). Gricean quality. *Noûs 50*(4), 689–703.

Faller, M. (2002). *Semantics and pragmatics of evidentials in Cuzco Quechua*. Ph. D. thesis, Stanford University.

Faller, M. (2011). A possible worlds semantics for Cuzco Quechua evidentials. In N. Li and D. Lutz (Eds.), *Proceedings of SALT 20*, pp. 660–683. CLC Publications.

Faller, M. (2019). The discourse commitments of illocutionary reportatives. *Semantics and Pragmatics 12*(8), 1–46.

Farkas, D. and K. Bruce (2010). On reacting to assertions and polar questions. *Journal of Semantics 27*(1), 81–118.

von Fintel, K. and I. Heim (2011). Intensional semantics. MIT Lecture notes, http://web.mit.edu/fintel/fintel-heim-intensional.pdf.

Geurts, B. (2019). Communication as commitment sharing: Speech acts, implicatures, common ground. *Theoretical Linguistics 45*(1-2), 1–30.

Grimshaw, J. (2015). The light verbs *Say* and sᴀʏ. In I. Toivonen, P. Csúri, and E. van der Zee (Eds.), *Structures in the Mind: Essays on Language, Music, and Cognition*, pp. 79–99. Cambridge: MIT Press.

Gunlogson, C. (2003). *True to Form: Rising and Falling Declaratives as Questions in English*. New York: Routledge.

Hunter, J. (2016). Reports in discourse. *Dialogue and Discourse 7*(4), 1–35.

Hunter, J. and N. Asher (2016). Shapes of conversation and at-issue content. In M. Moroney, C.-R. Little, J. Collard, and D. Burgdor (Eds.), *Semantics and Linguistic Theory (SALT) 26*, Ithaca, NY, pp. 1022–1042. LSA and CLC Publications.

Izvorski, R. (1997). The present perfect as an epistemic modal. In A. Lawson (Ed.), *Semantics and Linguistic Theory (SALT) 7*, Ithaca, NY, pp. 222–239. LSA and CLC Publications.

Jackendoff, R. (1972). *Semantic Interpretation in Generative Grammar*. Cambridge, MA: MIT Press.

Kaufmann, M. and S. Kaufmann (2020). Talking about sources. In M. Asatryan, Y. Song, and A. Whitmal (Eds.), *NELS 50: Proceedings of the Fiftieth Annual Meeting of the North East Linguistic Society*, Amherst, Massachusetts. GLSA.

Koev, T. (2018). Notions of at-issueness. *Language and Linguistics Compass 12*(12), 1–16.

Koev, T. (koev2021). Parentheticality, assertion strength, and polarity. *Linguistics and Philosophy 44*(1), 113–140.

Korotkova, N. (2015). Evidentials in attitudes: do's and dont's. In E. Csipak and H. Zeijlstra (Eds.), *Sinn und Bedeutung 19*, pp. 340–357.

Korotkova, N. (2016). *Heterogeneity and universality in the evidential domain*. Ph. D. thesis, University of California, Los Angeles.

Korotkova, N. (2017). Evidentials and (relayed) speech acts: Hearsay as quotation. In S. D'Antonio, M. Moroney, and C. R. Little (Eds.), *Semantics and Linguistic Theory (SALT) 25*, pp. 676–694. LSA Open Journal Systems.

Korotkova, N. (2019). The subjective heart of evidentiality. Ms., University of Konstanz.

Korotkova, N. (2020). Evidential meaning and (not-)at-issueness. *Semantics & Pragmatics 13*(4), 1–24.

Korotkova, N. (2021a). The embedding puzzle: Constraints on evidentials in complement clauses. *Linguistic Inquiry 52*(1), 210–226.

Korotkova, N. (2021b). Theories of evidential meaning: Taking stock. Ms., under review in *Journal of Pragmatics*.

Kratzer, A. (2012). *Modals and Conditionals*. Oxford: Oxford University Press.

Krawczyk, E. A. (2012). *Inferred Propositions and the Expression of the Evidence Relation in Natural Language. Evidentiality in Central Alaskan Yup'ik Eskimo and English.* Ph. D. thesis, Georgetown University.

Krifka, M. (2019). Layers of assertive clauses: Propositions, judgements, commitments, acts. In Y. Hartmann and W. Angelika (Eds.), *Propositionale Argumente im Sprachvergleich: Theorie und Empirie.* Tübingen: Gunter Narr Verlag.

Lackey, J. (2007). Norms of assertion. *Noûs 41*(4), 594–626.

Lawlor, K. and J. Perry (2008). Moore's paradox. *Australasian Journal of Philosophy 86*(3), 421–427.

Maier, E. (2014). Mixed quotation: The grammar of apparently transparent opacity. *Semantics and Pragmatics 7*, 1–67.

Mandelkern, M. (2019). What 'must' adds. *Linguistics and Philosophy 42*(3), 225–266.

Martínez Vera, G. (2020). *On the Semantics of Evidentials in Southern Aymara.* Ph. D. thesis, University of Connecticut.

Matthewson, L., H. Davis, and H. Rullman (2007). Evidentials as epistemic modals: Evidence from St'át'imcets. In J. van Craenenbroeck (Ed.), *Linguistic Variation Yearbook 7*, pp. 201–254. Amsterdam: John Benjamins.

Mayol, L. and E. Castroviejo (2013). How to cancel an implicature. *Journal of Pragmatics 50*(1), 84–104.

McCready, E. (2015). *Reliability in Pragmatics*. Oxford: Oxford University Press.

Murray, S. E. (2014). Varieties of update. *Semantics and Pragmatics 7*(2), 1–53.

Murray, S. E. (2017). *The Semantics of Evidentials*. Oxford: Oxford University Press.

Murray, S. E. (2021). Evidentiality, modality, and speech acts. *Annual Review of Linguistics 7*(1), 213–233.

Murray, S. E. and W. B. Starr (2020). The structure of communicative acts. *Linguistics and Philosophy 44*(2), 425–474.

Northrup, O. (2014). *Grounds for commitment*. Ph. D. thesis, University of California, Santa Cruz.

Peterson, T. (2010). *Epistemic Modality and Evidentiality in Gitksan at the Semantics-Pragmatics Interface*. Ph. D. thesis, University of British Columbia.

Potts, C. (2005). *The Logic of Conventional Implicatures*. Oxford: Oxford University Press.

Rett, J. (2020). Manner implicatures and how to spot them. *International Review of Pragmatics 12*(1), 44–79.

Roberts, C. (2019, December). The character of epistemic modality: Evidential indexicals. Ms., The Ohio State University, asc.ohio-state.edu/roberts.21/Roberts.EpistemicModality.pdf.

Şener, N. (2011). *Semantics and Pragmatics of Evidentials in Turkish.* PhD dissertation, university of Connecticut, Storrs.

Simons, M. (2007). Observations on embedding verbs, evidentiality, and presupposition. *Lingua 117*(6), 1034–1056.

Simons, M., J. Tonhauser, D. Beaver, and C. Roberts (2010). What projects and why. In N. Li and D. Lutz (Eds.), *Semantics and Linguistic Theory (SALT) 20*, Ithaca, NY, pp. 309–327. LSA and CLC Publications.

Smirnova, A. (2012). Evidentiality in Bulgarian: Temporality, epistemic modality, and information source. *Journal of Semantics 30*, 479–532.

Snider, T. (2017). *Anaphoric Reference to Propositions.* Ph. D. thesis, Cornell University.

Stalnaker, R. (2000). On "moore's paradox". In P. Engel (Ed.), *Believing and Accepting*, pp. 93–100. Dordrecht: Springer.

Stalnaker, R. C. (1978). Assertion. In P. Cole (Ed.), *Syntax and Semantics 9: Pragmatics*, pp. 315–332. New York: Academic Press.

Tonhauser, J., D. Beaver, C. Roberts, and M. Simons (2013). Towards a taxonomy of projective content. *Language 89*(1), 66–109.

Tonhauser, J., D. I. Beaver, and J. Degen (2018). How projective is projective content? Gradience in projectivity and at-issueness. *Journal of Semantics 35*(3), 495–542.

Willett, T. (1988). A cross-linguistic survey of the grammaticization of evidentiality. *Studies in Language 12*(1), 51–97.

Williamson, T. (2000). *Knowledge and Its Limits*. Oxford: Oxford University Press.

Yalcin, S. (2007). Epistemic modals. *Mind 116*(464), 983–1026.

Appendix 1: obligatory endorsement

Endorsement can be obligatory even with hearsay (also Gitksan (Tsimshianic), Peterson 2010; St'át'imcets (Salish), Matthewson et al. 2007)

(11)   Turkish (Turkic; Turkey): hearsay/inference *miş* (pace Şener 2011)

    a.   *You wake up to white stuff on the ground.*   [INFERENCE]

        #LA'ye   kar   yağ-**mış**   ama   kar   yağ-dıg-ın-a
        LA.DAT   snow   rain-**IND**   but   snow   rain-NMLZ-3SG.POSS-DAT
        inan-mı-yor-um.
        believe-NEG-PROG-1SG
        Intended: 'It snowed in LA, I infer, but I don't believe that.'

    b.   *You hear from a friend that in snowed in LA.*   [HEARSAY]

        #LA'ye   kar   yağ-**mış**   ama   kar   yağ-dıg-ın-a
        LA.DAT   snow   rain-**IND**   but   snow   rain-NMLZ-3SG.POSS-DAT
        inan-mı-yor-um.
        believe-NEG-PROG-1SG
        Intended: 'It's said that it snowed in LA, but I don't believe that.'
        Comment: to avoid a contradiction, use *guya* 'allegedly'.

► Disavowals with evidentials: likened to Moore's paradox

(12) #It is raining, but I don't believe it.

► Moore's paradox: linked to assertion, typically analyzed as a
  pragmatic phenomenon (Stalnaker 2000; Williamson 2000; Lawlor and Perry
  2008; see also Mandelkern 2019 on another type of speech-acty infelicity)

(13) ✓Suppose it's raining and that you don't believe it.

► Some other infelicities: do not resolve in embedded environments,
  are due to semantics (point made originally by Yalcin 2007 on epistemics; cf. a
  remark in Murray 2017:23–24 on evidentials)

▶ Evidentials in attitudinal environments
  ▶ The evidence, and endorsement, holder shifts to the attitude holder
    (Korotkova 2015, 2016, 2019)
  ▶ The endorsement pattern reproduced

(14) ✓Lisa zegt ⎡ dat het **schijnt** te sneeuwen, ⎤   Dutch
     Lisa say.3SG.PRES ⎣ COMP it **REP.3SG.PRES** to snow.INF ⎦
     maar ze **gelooft** het **niet**.
     but she **believe.3SG.PRES** that **NEG**
     'Lisa says it snowed, as she heard, but she **doesn't believe** it.'

(15) #Lisa ⎡ LA'ye kar yağ-**mış** ⎤ de-di   Turkish
     Lisa ⎣ LA.DAT snow rain-**IND** ⎦ say-PST
     ama kar yağ-dığ-ın-a inan-mı-yor.
     but snow rain-NMLZ-3SG.POSS-DAT **believe-NEG-PROG**
     Intended: ≈'Lisa says that it **apparently** snowed in LA but she **doesn't believe**
     that it snowed.'

Methodological note:
Evidentials can be excluded from clausal complements for syntactic reasons (Korotkova 2021a)

▶ Testing under *say*/*think*/*believe* impossible

▶ Instead: semantic substitutes without syntactic confounds
  ▶ *according to X* (Kaufmann and Kaufmann 2020)
  ▶ *in X's opinion*
  ▶ other clause-mate intensional operators (von Fintel and Heim 2011)

(16)   a.   **According to this book**, the pro-gun argument is built on myth.
                                                    (Corpus of Contemporary American English)

       b.   **According to this book**, the pro-gun argument is **presumably** built on myth.