The notional category of evidentiality: Day 1 Introduction and foundational issues

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WeSSLLI @ Brandeis

July 11, 2020

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(Adapted from To ϕ or not to ϕ; April 2018)

Grounds for claims II

1 **The maxim of quality**
Try to make your contribution one that is true (Grice 1989)

2 **The norms of assertion**
Assertion requires knowledge (Williamson 1996, 2000; deRose 1996, 2002) / justified belief (Lackey 2007)

- ► Are 1 and 2 the same? (Benton 2016)
- ► Do we need 2 at all? (Pagin 2016)

Bottom line
Claims (often) require evidence

Evidentiality I

- What are linguistic means to talk about evidence?
- This class: focused examination of **evidentiality**
- TEXTBOOK DEFINITION (to be questioned)

  Evidentiality is a grammatical category that marks semantically determined **information source** for an utterance

  (cf. Chafe and Nichols 1986; Guentchéva 1996; Johanson and Utas 2000; Aikhenvald 2004, 2018 a.o.)

Evidentiality II

▶ Typical evidential paradigm: a 3-way opposition

(1)   Cuzco Quechua (Quechuan: Peru)

    a.   para-sha-n=**mi**   [DIRECT]
        rain-PROG-3=**DIR**
        'It is raining, *I see*.'

    b.   para-sha-n=**si**   [HEARSAY]
        rain-PROG-3=**REP**
        'It is raining, *I hear*.'

    c.   para-sha-n=**chá**   [INFERENCE]
        rain-PROG-3=**CONJ**
        'It must be raining, *I gather*.'   (adapted from Faller 2002:3)

▶ New to this type of convention? Check out Leipzig glossing rules
   https://www.eva.mpg.de/lingua/resources/glossing-rules.php

Evidentiality III

- A 2-way opposition

(2) Shipibo-Konibo (Panoan: Peru)

   a. Jawen jema-**ra**   ani   iki   [DIRECT]
       POSS3 village:ABS-**DIR** large COP
       'Her village is large, **I witnessed**.'

   b. Jawen jema-**ronki**   ani   iki   [HEARSAY]
       POSS3 village:ABS-**REP** large COP
       'Her village is large, **I heard**.'

                              (adapted from Valenzuela 2003:33–34)

Evidentiality IV

- Evidential perfects (term from Izvorski 1997)
    - (Present) perfect morphology: hearsay and inference
    - Especially common in the Anatolia-Balkans-Caucasus region

- Case in point:
  Georgian (South Caucasian; Georgia, Azerbaijan)

(3) Context 1: I'm told that the dragon hid the treasure.   [HEARSAY]
    Context 2: I enter and the dragon's cave is empty.   [INFERENCE]

    urtʃxul–s   ganʤ–i   **daumalia**
    dragon-DAT   treasure-NOM   hide.3SG.S.3SG.O.**IND.PST**
    'The dragon hid the treasure, *I hear/infer*.'

(4) urtʃxul–ma   ganʤ–i   **daimala**   [NEUTRAL]
    dragon-ERG   treasure-NOM   hide.3SG.S.3SG.O.**PST**
    'The dragon hid the treasure.'

- Want to learn about fieldwork on language? Check out Bowern 2008
  (linguistics generally) and Bochnak and Matthewson 2015 (semantics)

Evidentiality V

- Evidential systems
  - typically 2- to 4-way oppositions (Aikhenvald 2004:23–66)
  - much like tense and aspect (Speas 2010)

- Taxonomy of evidence types (Willett 1988 based on a 32-language sample)

Direct	Indirect	
	Inference	Hearsay
• visual	• reasoning	• secondhand
• auditory	• observable results	• thirdhand
• other sensory		• folklore

Roadmap

Day 1 **July 11**, Saturday
Intro and foundational issues

Day 2 **July 12**, Sunday
Evidential meaning and (not-)at-issueness

Day 3 **July 14**, Tuesday
Evidentials as self-attributions

Day 4 **July 15**, Wednesday
Hearsay and (non-)commitment

Day 5 **July 17**, Friday
Directness of subjective expressions

Evidentiality in formal semantics and pragmatics I

- ▶ **> 20 yrs of research** (see overviews in Korotkova 2016; Murray 2017)

- ▶ Elin Mccready
- ▶ Lisa Matthewson
- ▶ Martina Faller
- ▶ Roumyana Pancheva (Izvorski)
- ▶ Sarah E. Murray

Evidentiality in formal semantics and pragmatics II

▶ Evidential paradigms of > 15 lgs studied

Bangla (Indo-Iranian: Bangladesh, India; Bhadra 2017), Bulgarian (South Slavic: Bulgaria; Izvorski 1997; Smirnova 2012; Koev 2017); Central Alaskan Yup'ik Eskimo (Eskimo-Aleut: Alaska, USA; Krawczyk 2012); Cheyenne (Algonquian: Montana, USA; Murray 2010, 2014, 2016, 2017); Cuzco Quechua (Faller 2002, 2004, 2012, 2019); Georgian (Korotkova 2012); Gitksan (Tsimshianic: British Columbia, Canada; Peterson 2010, Peterson forth.), Guaraní (Tupi-Guaraní: Paraguay; Tonhauser 2013), Japanese (isolate: Japan; McCready and Ogata 2007; Davis and Hara 2014; McCready 2015), Korean (isolate: Korea; Lim 2010; Lee 2013), Nuu-chah-nulth (Wakashan: British Columbia, Canada; Waldie 2013); St'át'imcets (Salish: British Columbia, Canada; Matthewson et al. 2007; Matthewson 2011), Tagalog (Austronesian: Philippines; Schwager 2010; Kierstead 2015), Tatar (Turkic: Russia; Bowler 2018), Tibetan (Tibeto-Birman: China, India, Nepal; Garrett 2001; Kalsang et al. 2013), Turkish (Turkic: Turkey; Şener 2011; Meriçli 2016)

Types of category I

▶ World Atlas of Language Structures: 237 out of 414 lgs have
dedicated grammatical means for information source

(de Haan 2013; https://wals.info/)
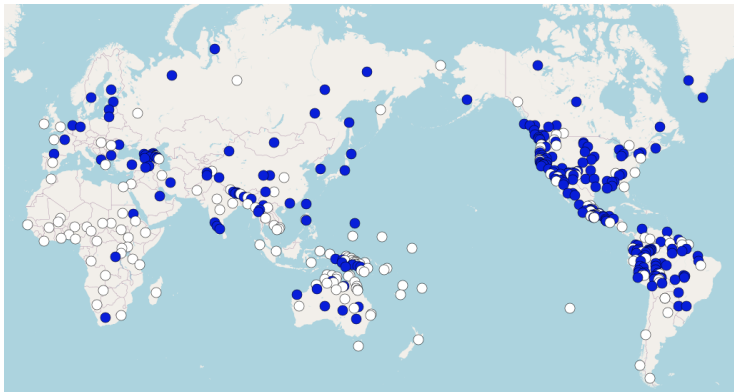
Types of category II

- ► Legacy of the typological tradition: evidentiality as a **grammatical category**
- ► Aikhenvald's (2004)'s criteria (see discussion in Boye 2010)

  ❶ obligatory use
  but how important is it semantically?
  ❷ marking evidence as a primary function
  but how to tell?

- ► What about many European languages? (cf. Diewald and Smirnova 2010)

Types of category III

Meaning $\neq$ morphosyntactic realization

- ▶ Paradigms vs. semantic status: the case of future
    - ▶ often part of the tense paradigm (Dahl and Velupillai 2013)
    - ▶ modal rather than temporal semantics (linguistics: Condoravdi 2002; Werner 2006; Klecha 2014; Winans 2016, philosophy: Cariani and Santorio 2018, Cariani forth.)

- ▶ Semantic mechanisms can be the same across moprhosyntactic realization
    - ▶ Temporality with and without tense (Bittner 2014)
    - ▶ Modality across syntactic categories (Arregui et al. 2017)

- ▶ Title of the class: reference to Kratzer 1981

Evidence across domains I

- ▶ Evidential adverbials (English, Krawczyk 2012; St'át'imcets Matthewson 2012)

(5) Threatened by climate change, Florida **reportedly** bans term 'climate change'. (*The Washington Post*)

- ▶ Evidential adjectives (understudied)

(6) . . . the **alleged** drought in California is merely a hoax . . .
(*The Keiser Report*)

Evidence across domains II

- **Raising verbs** (English, Rett et al. 2013; Rudolph 2019; Swedish, Asudeh and Toivonen 2012; Dutch, de Haan 2000; Koring 2013)

(7) I haven't seen Porco Rosso, but it **looks like** a Ghibli film I might be all right with. (*COCA*)

COCA: Corpus of Contemporary American English
https://www.english-corpora.org/coca/

- **Inferential futures** (English, Winans 2016; Romance languages, Ippolito and Farkas 2019 and references therein)

(8) *It's Friday night, and the neighbors barbecue every Friday night.*
    The neighbors **will** be barbecuing (right now).
    (adapted from Winans 2016:30)

Evidence across domains III

- Inferential attitude verbs (own work in progress)

(9) #C1, direct: *Looking out of the window, seeing a downpour:*
     ✓C2, indirect: *Looking out of the window, seeing wet ground:*
     I **assume/conjecture/infer/suppose** that it is raining.

- Epistemic *must* (von Fintel and Gillies 2010, 2018, Lassiter 2016)

(10) # C1, direct: *Looking out of the window, seeing a downpour:*
      ✓C2, indirect: *Looking out of the window, seeing wet ground:*
      It **must** be raining.

- …

Formal approaches

❶ Modal
Evidentials as Kratzerian epistemic modals

❷ Illocutionary
Evidentials as interacting with the structure of speech acts

> ▶ Both modal in some sense
> ▶ Despite conceptual differences, very similar empirical
>   predictions

The modal view I

- Longstanding typological tradition: evidentiality as a sub-category of epistemic modality (Bybee 1985; Palmer 1986; van der Auwera and Plungian 1998)

- Izvorski (1997) on Bulgarian (South Slavic): a Kratzerian formalization

The modal view II

- Bulgarian evidential perfect (cf. Georgian)
  - inference
  - hearsay
  - (also has non-evidential aspectual uses)

(11) Bulgarian (South Slavic)
      C1, hearsay: *I hear that Ivan is drunk.*
      C2, inference: *I see empty wine bottles in Ivan's office.*

      Ivan izpi-**l**   vsičko-to vino včera.
      Ivan drunk-**IND** all-DEF   wine yesterday
      'Ivan drank all the wine yesterday, *I hear/infer*.'

The modal view III

- A series of similarly-spirited approaches to evidentials (German *sollen*, Enrich 2001; Faller 2011; Japanese, McCready and Ogata 2007; Korean, Lee 2013; St'át'imcets Matthewson et al. 2007; Matthewson 2012; Tibetan, Garrett 2001; Cuzco Quechua, Faller 2011)

- Further reinforcement of the modal view: evidential component of epistemic *must* (pro: von Fintel and Gillies 2010; von Fintel and Gillies 2018; Lassiter 2016; Mandelkern 2019; against: Giannakidou and Mari 2016; Goodhue 2017)

- One possibility: evidentiality = epistemic modality (Matthewson 2015)

- What is modality?

The modal view IV

- Modals (speaking very broadly): the likelihood of some proposition
  - *deontic*: given the set of relevant laws and rules
  - *epistemic*: in view of some body of knowledge
  - *bouletic*: depending on what is desired
  - other **flavors**: *circumstantial, historical* …

(12) a. The students **may** come in.   [DEONTIC]

      b. Jo **may** like this color (for all I know).   [EPISTEMIC]

      c. **May** you succeed!   [BOULETIC]

The modal view V

- Mainstream in linguistics: Kratzer's doubly-relative system (Kratzer 1977, 1981, 1991, 2012)
    - Modals as quantifiers over possible worlds, possibility $\exists$ or necessity $\forall$ (see also Kaufmann et al. 2006; Portner 2009, 2011; Hacquard 2011; Kaufmann and Kaufmann 2016, and Will Starr's lecture notes (Spring 2012) on modality: http://williamstarr.net/teaching.html)
    - Flavors determined by two conversational backgrounds (hence doubly-relative)
    - Different modal words: a unified analysis

The modal view VI

▶ Each modal relativized to two conversational backgrounds determined contextually

    ❶ **modal base f**:
       maps the world of evaluation w_0 to a set of propositions
    ❷ **ordering source g**:
       induces an ordering on the modal base by representing
       wishes/laws/standards

The modal view VII

▶ Izvorski's (1997)'s analysis of the evidential perfect: vanilla epistemic necessity modal with an indirect evidence presupposition (modified; the closest, but not identical, formal version is in Faller 2011)

  ❶ Epistemic modal base
  ❷ Stereotypical ordering source

The modal view VIII

- **The modal base**
    - Epistemic modal base f_{ep}: a function mapping every world w to a set of propositions that comprise what is known in w

(13) $f_{ep}(w) = \{z \mid z \text{ is known in } w\}$

    - $\cap f_{ep}(w)$: a set of worlds accessible from w s.t. those worlds verify the propositions in the modal base

(14) $\cap f_{ep}(w) = \{u \mid \forall z \in f_{ep}(w).u \in z\}$

The modal view IX

- **The ordering source**

    - Stereotypical ordering source g: a function that maps every world w to a set of propositions that represent the normal course of events in w (e.g. 'the Sun sets in the West' is normal in our world)

(15) $g_{st}(w) = \{q \mid q \text{ is normal in } w\}$

    - An ordering source: an ordering on the words in $\cap f_{ep}(w)$: v is better than u if it verifies more worlds:

(16) $\forall u, v : v <_{g(w)} u$ iff $\{q \mid q \in g(w) \wedge u \in q\} \subset \{q \mid q \in g(w) \wedge v \in q\}\}$

    - *max*: a function that gives the set of maximal worlds from the modal base with respect to the ordering source:

(17) $max_{g_{st}(w)}(\cap f_{ep}(w)) = \{w' \in \cap f_{ep}(w) \mid \neg\exists v \in \cap f_{ep}(w).v <_{g_{dox}(w)} w'\}$

The modal view X

> Lexical entry for *Ev*
> *Evp* is true in *w* wrt conversational backgrounds
> provided by the modal base *f* and the ordering source *g*,
> just in case *p* is true in all closest accessible worlds, and
> is undefined otherwise.

(18) a. PRESUPPOSITION
          $[\![Ev]\!]^{c,w,f,g}(p)$ is defined just in case
          $\exists Z\{z \mid z$ is indirect evidence for p in $w\} \wedge Z \subseteq f_{ep}(w)$

   ▸ there are propositions that constitute indirect evidence
   ▸ all such propositions are known and therefore in the modal
      base

   b. ASSERTION
       If defined, $[\![Ev]\!]^{c,w,f,g}(p) = \forall w' \in max_{g_{st}(w)}(\cap f_{ep}(w)).p(w')$

(11) Bulgarian (South Slavic)
      C2, inference: *I see empty wine bottles in Ivan's office.*

      Ivan izpi-**l**   vsičko-to vino včera.
      Ivan drunk-**IND** all-DEF   wine yesterday
      'Ivan drank all the wine yesterday, *I infer*.'   (Izvorski 1997:13)

The modal view XII

- modal base: $f = \{$'there are empty bottles in Ivan's office', $\dots\}$
- ordering source: $g = \{$'empty bottles indicate prior drinking', $\dots\}$
- PRESUPPOSITION

  $[\![Ev]\!]^{c,w,f,g}(drank.wine(Ivan))$ is defined just in case
  $\exists Z\{z \mid z$ is indirect evidence for $(drank.wine(Ivan))$ in $w\} \wedge Z \subseteq f_{ep}(w)$

  $[\![Ev]\!]^{c,w,f,g}(drank.wine(Ivan))$ is defined since $(there.are.bottles)$ is
  evidence for $(drank.wine(Ivan))$ in w and we assume that
  $(there.are.bottles) \in f$

- ASSERTION

  $[\![Ev]\!]^{c,w,f,g}(drank.wine(Ivan)) = \forall w' \in$
  $max_{g_{st}(w)}(\cap f_{ep}(w)).drank.wine(Ivan)(w')$

  - The ordering source: an explicit connection between empty bottles and drinking
  - It is likely that the actual world is one of the Ivan-drank-wine worlds
  - Not necessarily so (keep that in mind for Day 4)

The modal view XIII

- ▶ Opponents of the modal view

  - ▶ The evidential requirement is not presuppositional:
    not a concern [Day 2]
  - ▶ Evidential contradictions with hearsay:
    not a concern [Day 4]
  - ▶ Cross-linguistic variation:
    no evidence for genuinely *semantic* variation (Murray 2010,
    2017; Korotkova 2016, 2017, 2019)

- ▶ Most approaches can handle most facts

Concerns about the framework

- ▶ Enumeration: what are possible combinations? (some discussion: Kratzer 1991)

- ▶ Interpretation in attitudes (Hacquard 2006, 2010; Yalcin 2007; Anand and Hacquard 2013)

(19) Jo **thinks** that the students **may** come in.

- ▶ Graded modality (see discussion in Swanson 2011; Lassiter 2017)

(20) It's **very probable/possible/likely**.

- ▶ Variable-force modality: not a true necessity or possibility (Rullmann et al. 2008; Peterson 2010; Deal 2011; Yanovich 2016)
- ▶ Non-quantificational modality: possible worlds without ∃ or ∀ (Cariani and Santorio 2018, Cariani forth.)
- ▶ Assessment-sensitivity: who is the knower of epistemic modals? (Stephenson 2007; von Fintel and Gillies 2008a,b; Weatherson and Egan 2011; MacFarlane 2014, Yanovich forth.)

What makes a modal I

- ► Similarity to *must* and *might*?

But Lack of gradability, compared to modal adjectives

But Many quirks not replicated even across Germanic

  - ► Interaction with tense (fixed scope in English, scopal interaction in other languages, Rullmann and Matthewson 2018)
  - ► Double modals (rare in English, Hasty 2012; Collins and Singler 2015, common in e.g. German, Wurmbrand 2003)

(21) Those ducks **must** not **can** feel cold.   (Hasty 2012)

(22) German

  Am Ende **soll**   keiner allein sein   **müssen**.
  at end   should nobody alone be.INF must.INF
  ≈'No one is supposed to have to be alone at the end.'

                                                            (http://goo.gl/Cil0pU)

What makes a modal II

- ▶ Modals as intensional operators? How to diagnose?
- ▶ Most approaches to evidentiality (incl. illocutionary)
  - ▶ assume intensionality
  - ▶ do not argue for it
- ▶ Exception: evidentiality as a deictic phenomenon
  - ▶ Indirectness as an effect of distancing in time and/or space
    (Northern Ostyak, Nikolaeva 1999; Cuzco Quechua *sqa*, Faller
    2004; Matses, Fleck 2007; Japanese, Davis and Hara 2014;
    Bulgarian, Koev 2017; Tatar, Bowler 2018)
  - ▶ Inidrectness: not hard-wired (cf. Mandelkern 2019 on *must*)

What makes a modal III

- One test: modal subordination (see Roberts 1989, 1991, 1996; Brasoveanu 2010 on the phenomenon)

(23)   If John bought a book, he'll be home reading it by now.

    a.   #It **is** a murder mystery.

    b.   ✓It **will** be a murder mystery.

<div align="right">(Roberts 1989:683)</div>

- Data in (23): one the strongest empirical arguments for the modality of *will* (see discussion in Cariani forth.)

What makes a modal IV

▶ Some evidentials participate in modal subordination (Japanese, McCready and Ogata 2007; Bulgarian, Smirnova 2012; Korean, Lee 2013; German, Faller 2017; Georgian)

(24) Georgian

    a.   nataʃa–s   xe   daurgia
           Natasha-DAT tree.NOM plant.IND.PST
           'Natasha planted a tree, *I hear/infer*.'

    b.   mas–ze #**dasaxldnen** / ✓**dasaxlebulan** cixv–eb–i.
           it–in   live.3PL.**PST** / live.3PL.**PST**   squirrel–PL–NOM/
           'Squirrels started living in it, *(**I hear/infer**).'

▶ Data in (24): strong argument for an intensional account

▶ Other indicators of evidential intensionality: 'de re' / 'de dicto' ambiguities and evidential contradictions, only hearsay evidentials [Day 4]

What makes a modal V

If modals are simply intensional operators, then expressions like *In the worlds of Sherlock Holmes* and *In Jo's opinion* (cf. von Fintel and Heim 2011), as well as attitude predicates like *think* and *believe* are also modals (cf. Hacquard 2013).

(In)directness I

- Existing literature: evidence types as linguistic primitives
  (few exceptions; Speas 2010; Krawczyk 2012; McCready 2015)
- Notions of directness and indirectness aren't clear-cut

(In)directness II

- Kinds of inference

(25) St'át'imcets

Situation: *You had five pieces of ts'wan (wind-dried salmon) left when you checked yesterday. Today, they are all gone.*

✓C1, INFERENCE FROM GENERAL KNOWLEDGE:
You are not sure who took them, but John is the person in your household who really loves ts'wan and usually eats lots whenever he gets a chance.

✓C2, INFERENCE FROM RESULTS
It's not just that you think it must be John because he's the one who likes ts'wan. This time, you see the ts'wan skins in his room.

ts'aqw-an'-ás **k'a** i ts'wán-a kw s-John
eat-DIR-3ERG **INFER** DET.PL t'swan-EXIS DET NOM-John
'John ate the t'swan, **I infer**.'

(adapted from Matthewson et al. 2007:205–206)

(In)directness III

(26) Georgian

    #C1, INFERENCE FROM GENERAL KNOWLEDGE:
    Mom always makes pies this time of the year.

    #C2, INFERENCE FROM RESULTS, NON-VISUAL:
    I smell pies entering the house.

    ✓C3, INFERENCE FROM RESULTS, VISUAL:
    I see a dirty baking pan.

    deda–s   ghvezel–i **dauc'xvia**
    mother-DAT pie-NOM bake.**IND.PST**
    'Mom made a pie, *I infer*.'

▶ Indirectness can be too broad a label

(In)directness IV

- Some languages: 'direct' evidentials encode perception
- Some languages: 'direct' evidentials cover a broader spectrum

(In)directness V

(27) Cuzco Quechua: What =*mi* does

    a.   Information from an expert or an encyclopedia

        Africa-pi=**n**   elefante-kuna-qa ka-n
        Africa-LOC-**BPG** elephant-PL-TOP   be-3
        'In Africa, there are elephants.'   (Faller 2002:133)

    b.   *Trustworthy report about intentions*
        Context: Inés said that she would go to Cuzco tomorrow.

        Paqarin Inés-qa Qusqu-ta=**n**   ri-nqa.
        tomorrow Inés-TOP Cuzco-ACC-**BPG** go-3FUT
        'Inés will go to Cuzco tomorrow.'   (Faller 2002:127)

    c.   Dius kan=**mi**.
        God be-**BPG**
        'God exists.'   (Faller 2002:132)

▶ Faller 2002: =*mi* encodes the best possible grounds (see also discussion and framework in McCready 2015)

▶ Isn't that the same as the justified belief norm of assertion?

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