Day 4: The acquaintance inference

An opinionated guide to the language of opinion

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Jarmush 1984

– Cleveland. It's a beautiful city.
– Yes?
– Yeah.
– It's got a big, beautiful lake.
  You'll love it there.
– Have you been there?
– No, no.
       (*Stranger Than Paradise*)

The upshot I

Larger issues and the epistemology of personal taste

Why do these expressions have this? (Bylinina 2017; Vardomskaya 2018; Muñoz 2019)

(1)   a.   Pittsburgh is **beautiful**. ⤳ I've seen it.

       b.   Disneyland is **fun**. ⤳ I've been there.

       c.   Milky oolong is **delicious**. ⤳ I've tried it.

       d.   Kubrick movies are **frightening**. ⤳ I've watched them.

The upshot II

Today: AI obviation and cross-constructional variation (based on Anand and Korotkova 2018)

- ▶ What is the AI: form, dimension of meaning, . . . ?
- ▶ When and why does it go away?
- ▶ Verdict: different types of acquaintance content
  - ❶ bare uses: a special evidential restriction
  - ❷ other constructions: a classic presupposition

Basic data I

> **The AI**
>
> Characterizes a range of subjective expressions (Stephenson 2007; Pearson 2013; Klecha 2014; Ninan 2014; Kennedy and Willer 2016; Bylinina 2017)

- ▶ Explicit denials: impossible

(2)   a.   PPT:
          The puerh was **delicious**, #but I never tasted it.

      b.   PSYCH PREDICATE:
          The piano **sounded** out of tune, #but I've never heard it.

      c.   SUBJECTIVE ATTITUDE:
          I **consider** the dress blue and black, #but I've never seen it.

Basic data II

AI survives under negation:

(3)   a.   PPT
           The puerh wasn't **delicious**, #but I never tasted it.

      b.   Psych predicate
           The piano **didn't sound** out of tune, #but I never heard it.

      c.   Subjective attitude
           I don't **consider** the dress blue and black, #but I never seen it.

Basic data III

AI may disappear in the scope of **obviators**, e.g. epistemic *might*:

(4)   a.   PPT
      ✓The puerh **might have been delicious**, though I never tasted it.

     b.   Psych predicate
      ✓The piano **might have sounded** out of tune, though I've never heard it.

     c.   Subjective attitude
      ✓I **might have considered** the dress blue and black, though I've never seen it.

Recap of the pattern

- ▶ Present in unmodified sentences
- ▶ Present in negated sentences
- ▶ Cannot be explicitly denied
- ▶ Can go away under certain obviators

The Puzzle

Why obviation is possible and explicit denials aren't?

First, we need to understand:

- The nature of experience involved
- The landscape of obviation

Firsthand experience I

- ▶ Sensory modality: depends on the predicate

(5) My blindfolded dance last night was **gorgeous**. I couldn't see what I was doing, but I could feel my body in each position.

- ▶ Immediate perception: not always required

(6) *Context 1: The speaker has been to Pittsburgh.*
Context 2: The speaker has photos of Pittsburgh.
Context 3: The speaker has heard a description of Pittsburgh.

Pittsburgh is **beautiful**.
✓Context 1, ✓Context 2, #/? Context 3

Firsthand experience II

▶ Sample size issues:

(7) a. INCOMPLETE EXPERIENCE:
         ✓I only watched { the trailer / the first five minutes }. This
         movie is **boring**.

     b. NO EXPERIENCE:
         #This new Allen movie is **boring**. I haven't watched it, but
         all his movies are the same.

   ▶ Not to be confused with type–token ambiguity

(8) a. Massaman curry is delicious, ✓I've tried it before at another
         restaurant.

     b. This Massaman curry is delicious, #but I haven't tried it yet.

Firsthand experience III

- Boundary between firsthand vs. non–firsthand

(9) That curry is **tasty**.
  reading a recipe   #
  looking at a picture   #
  see other patrons ordering/eating it   ??
  reading reviews   ?

- World knowledge: professionals vs. laypeople

Firsthand experience IV

- **Recap**
  - Type of perception varies with the predicate
  - Firsthand $\neq$ immediate perception
  - Firsthand: not always clearly defined
- **Next**
  - Firsthand experience: a kind of directness
  - Close relation between the AI of subjective expressions and evidentiality
  - Fuzzy notions: a much broader question of how natural language conceptualizes evidence and (in)directness (Faller 2002; Krawczyk 2012; McCready 2015; Korotkova 2016)

Evidence in language I

Evidentiality

A linguistic category that denotes information source for the
proposition expressed by a sentence (Aikhenvald 2004, 2018)

- **English**: lexical means, e.g. *seem* or adverbials

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

Evidence in language II

- **Many other languages**: dedicated grammatical means (verbal morphology, clitics, particles, . . .) to talk about information source:

Direct	Indirect	
	inference	hearsay
• visual	• reasoning	• secondhand
• auditory	• results	• thirdhand
• other sensory		• folklore

(Willett (1988) based on a 32-language sample)

Evidence in language III

- Textbook case

(11)   Cuzco Quechua (Quechuan; Peru)

    a.   para–sha–n=**mi**   [FIRSTHAND]
               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**   [CONJECTURE]
               rain–PROG–3=**CONJ**
               'It must be raining, *I gather*.'   (adapted from Faller 2002:3)

Evidence in language IV

- Cuzco Quechua "mi": perception not required

(12) a. Knowledge from encyclopedia

Africa-pi-**n**   elefante-kuna-qa ka-n
Africa-LOC-**DIR** elephant-PL-TOP   be-3
'In Africa, there are elephants.'   (Faller 2002:133, ex.100b)

   b. Faith

Dius kan-**mi**.
God   be-**DIR**
'God exists.'   (Faller 2002:132, ex.99)

Evidence in language V

- Evidentiality: an ongoing area of research within formal semantics and pragmatics (Izvorski 1997; Matthewson et al. 2007; Korotkova 2016; Murray 2017, Bary & Korotkova in prep.)
- Evidentials: traditionally only in languages that have respective category
- No strict mapping between syntax and semantics, same semantic notions can be manifested across grammar (see Bittner 2014 on tense and temporality)
- Important today: a variety of expressions have to do with indirectness

Proposal

AI obviation is rooted in indirectness

AI obviation II

The AI isn't always present: it may disappear in the scope of some *obviators* (cf. Pearson 2013; Klecha 2014; Ninan 2014)

(13)   The cake .... delicious, but I never tasted it.

     a.   EPISTEMIC MODAL AUXILIARIES:
        ✓**must/might** have been

     b.   EPISTEMIC ADVERBS:
        ✓**probably/possibly/maybe** was

     c.   PREDICATES OF EVIDENCE/CLARITY:
        ✓**obviously/certainly/apparently** was

     d.   FUTURATE OPERATORS:
        ✓**will/is going to** be

AI obviation III

- English obviators convey indirectness
- *Must*-modals: semantically encode lack of first-hand experience / presence of inference (von Fintel and Gillies 2010, 2021, see also Lassiter 2016)

(14) Context 1 (direct): The speaker, looking out of the window, sees a downpour.
Context 2 (inference): The speaker, in a windowless room, sees soaked people entering.

    a.   It **must** be raining outside.   # Context 1, ✓Context 2

    b.   It's raining outside.   ✓Context 1, ✓Context 2

                       (adapted from von Fintel and Gillies 2010:353)

AI obviation IV

- Prediction: grammatical markers of indirect evidentiality would follow the pattern
- Prediction borne out
  - Turkish indirect evidential (see Şener 2011; Meriçli 2016 on its semantics)
  - German inferential *wohl* (see Zimmerman 2008; Eckardt 2020 on its semantics)
  - Dutch hearsay *schjinen* (see Koring 2013 on its semantics)
  - Bulgarian evidential perfect (see Izvorski 1997 on its semantics)

AI obviation V

(15)   Turkish (Turkic: Turkey)

    a.   BARE FORM:

        #Durian güzel, ama hiç   dene–me–di–m.
        durian   good, but ever try–NEG–PST–1SG
        Intended: 'Durian is good, but I've never tried it'.

    b.   EVIDENTIAL *miş*:

        ✓Durian güzel-**miş**, ama hiç   dene–me–di–m.
        durian   good-**IND**, but ever try–NEG–PST–1SG
        'Durian is good, *I hear/infer*, but I've never tried it'.

(16) Indirect markers with PPTs

    a.   ✓Torta-ta   e   bi-**l**-a   **vkusn-a**.   [BULGARIAN]
          cake-DEF.F be.3SG be-**IND**-F **tasty-F**
          ≈'As I hear/infer, the cake is tasty.'

    b.   ✓Het eten hier **schijnt** **goed** te zijn.   [DUTCH]
          DEF food here **REP.3G** **good** to be.INF
          ≈'The food here is said to be good.'

    c.   ✓Der Tee ist   **wohl** **lecker**.   [GERMAN]
          DEF cake be.3SG.PRES **INFER** **delicious**
          ≈ 'The tea is presumably delicious.'

AI obviation VII

▶ Direct markers, on the other hand, do not obviate

(17)   Standard Tibetan (Tibetic: Nepal, Tibet)

    a.   kha lag 'di   **bro ba chen** po   **'dug**
        food   this   **taste   big**   poss DIR
        'This food is tasty.'

    b.   #yin na'i ngas   bro ba bltas   med
        but   1.ERG taste   look.PST
        'But I haven't tasted it.'   (adapted from Muñoz 2019)

AI obviation VIII

▶ Additional avenues of obviation

(18)   a.   EMPHATIC CERTAINTY
              I {know, am certain} that the cake is tasty, but I haven't
              tried it.

        b.   HEDGES
              I {assume, think} that the cake is tasty, but I haven't tried
              it.

AI obviation IX

Bottom line

Across languages, many obviators convey indirectness/lack of direct knowledge.

Previous approaches

- Special assertion norm (Ninan 2014)
- Reasoning from irrelevance (Pearson 2013)

Ninan (2014) I

An epistemologically grounded norm of assertion

In order to know the truth of *o is tasty*, the speaker must have prior experience with *o*.

- ▶ Background assumption: the knowledge norm of assertion (Williamson 2000)
- ▶ Assertion norms: active only at the root level, evaporate in embedded environments
- ▶ Moore's paradox (Stalnaker 2000; Williamson 2000; Lawlor and Perry 2008)

(19)   a.   #It is raining and I don't believe it is raining.

   b.   ✓Assume that it is raining and that you don't believe it.

- Assertions of unmarked propositions
  - assume such knowledge
  - trigger the AI
  - presence/absence of negation plays no role

- Assertions of marked (modalized, hedged, ...) propositions
  - are not subject to this convention
  - allow obviation

- Correct prediction: no AI in (most) embedded environments

(20)   Mo believes that this tea is delicious but she hasn't tried it.

Ninan (2014) III

- The pragmatic approach is rooted in the **speaker**'s knowledge
- The taster $\neq$ the speaker
- Incorrect prediction: non–autocentric A

(21) Non–autocentric AI:
      Hobbes's new food is tasty, #but no cat has ever tried it yet.

(22) Non–autocentric AI obviation:
      Hobbes's new food .... tasty, ✓but no cat has ever
      tried it yet.

    a.   ✓**must/might** be

    b.   ✓**probably/possibly/maybe** is

    c.   ✓**obviously/certainly/apparently** is

    d.   ✓**will/is going to** be

Ninan (2014) IV

Bottom line

Ninan's (2014) account explains the puzzle, but fails to accommodate the non-autocentric AI (see Dinges and Zakkou 2020 for a reply to this objection)

Pearson (2013) I

Core proposal (simplified)

1. First-person genericity (Bhatt and Pancheva 1998; Anand 2009; and especially Moltmann 2010, 2012)
2. An experience presupposition

Pearson (2013) II

- All SPs: Chierchia's (1995) individual-level predicates

(23)   a.   This is tasty.

       b.   [This$_i$ [GEN t_i is tasty]

- GEN: binds the taster and is restricted by quantificational domain restriction *Dom*

(24)   a. $[\![$ tasty-to $]\!]^{c,w} =$
           $\lambda x. \lambda o. x$ has tried o in w. 1 iff o is tasty to x in w

       b. $[\forall \langle x, w' \rangle : x \in Dom]$ [the cake is tasty-to x in w']

       c. $[\forall \langle x, w' \rangle : x \in Dom]$ [x has tried o in w']

Pearson (2013) III

- Negation explained: presupposition projection
- Non-autocentric AI explained:
    - The AI does not depend on who is the taster: the presupposition is generic
    - Default: the speaker $\in Dom$
    - The speaker can be irrelevant in classic non-autocentric cases, so the speaker $\notin Dom$
- Obviation explained (based on *must*, extrapolated to other cases):
    - The speaker can be irrelevant if the speaker hasn't tried *o* so the speaker $\notin Dom$
    - *must*: a signal of indirectness (see above)
    - Because the speaker is irrelevant, obviation is felicitous

Pearson (2013) IV

- **Problem 1**: Reasoning for *must* carries over to explicit denials (cf. Ninan 2014)
    - Incorrect prediction: the speaker's irrelevance should license denials
- **Problem 2**: Speaker's irrelevance
    - Incorrect prediction: the speaker, when not in *Dom*, is necessarily irrelevant and is not committing to a judgment on *o* if/when they do try it

(25) Just look at it! The cake { is, must be } delicious, #but I am going to find it disgusting.

Pearson (2013) V

Bottom line

Pearson's (2013) account doesn't solve the puzzle and overgenerates.

Recap

- Some SPs trigger an AI, a requirement resembling directness of evidentials
- The AI cannot be explicitly denied
- The AI can go away in the scope of indirect markers

A direct proposal I

Key components

- Some SPs comment on direct evidential grounds of a proposition
- Obviators update the parameter of evaluation they depend on

A direct proposal II

- ▶ Direct vs. indirect knowledge (based on von Fintel and Gillies 2010)

(26) Kernels

    a.   A kernel K is a set of propositions that are known directly.

    b.   The proposition $\bigcap K$ is a vanilla epistemic modal base: the set of worlds compatible with what is known directly and indirectly.

(27) a.   If $K = \{p, q, r\}$, where $p = \{w_1, w_2, w_3, w_7\}$, $q = \{w_2, w_3, w_8, w_{40}\}$ and $r = \{w_2, w_3, w_8\}$, then $\bigcap K = p \cap q \cap r = \{w_2, w_3\}$.

    b.   If there is only one proposition known directly, as in $K = \{p\}$, then all knowledge equals direct knowledge, $\bigcap K = K$, and there is no indirect knowledge.

A direct proposal III

- ▶ Indirect knowledge: propositions entailed by $\bigcap K$ but not by any q in K

(28)   Mr. Spock: I speak from pure logic. If I let go of a hammer on a planet that has a positive gravity, I need not see it fall to know that it has in fact fallen.

           (*Star Trek TOS*, Episode "Court Martial")

(29)   For (28)

     a. $K = \{$'that the hammer was let go on Planet Y', 'that Planet Y has positive gravity', 'that positive gravity makes objects fall' … $\}$

     b.   'that the hammer fell': jointly entailed by the propositions in K

A direct proposal IV

- The basic set-up
  - A relativist semantics, unlike the original proposal in vFG
  - Kernels: provided via an interpretative coordinate (cf. Hacquard; Yalcin's (2006; 2007) information states)

(30) $[\![\cdot]\!]^{c,g,\langle w,j,K \rangle}$

A direct proposal V

▶ Semantics for *tasty*

(31) a. $[\![$ *tasty* $]\!]^{c,\langle w,j,K_{j,w}\rangle} =$
           $\lambda o : o$ is tasty for j in w, defined iff
           $K_{j,w}$ directly settles whether o is tasty for j in w.

      b. $K_{j,w}$ directly settles whether p iff
           $\exists q \in K_{j,w} [q \subseteq p \ \lor \ q \subseteq \neg p]$

▶ Sample case

(32) a.   This puerh is delicious.

      b. $[\![$ The puerh is delicious $]\!]^{c,\langle w,j,K_{j,w}\rangle}$
           $=$ puerh is delicious for j in w, defined iff
           $K_{j,w}$ directly settles whether puerh is delicious for j in w.

A direct proposal VI

- AI: the only way to directly settle a taste claim
- Non–autocentric AI explained: kernels not linked to the speaker

AI obviation I

Core proposal

Obviators signal the lack of direct knowledge by eliminating the direct vs. indirect restriction

AI obviation II

(33) $[\![\text{ must } \phi]\!]^{c,g,\langle w,j,K \rangle} = \forall w' \in \cap K.[\![\phi]\!]^{c,g,\langle w'j',\{\cap K\}\rangle}$, defined iff K does not directly settle ϕ.

(adapted from von Fintel and Gillies 2010:372)

    a.   Must: strong (not essential; Kratzer 2012; Lassiter 2016 also work)

    b.   Evidential signal: hard-wired

    c.   Evidential signal: a presupposition (not essential; see Roberts 2019; Korotkova 2020 for more refined options)

AI obviation III

(34) #Context 1 (direct): Looking out of the window, seeing a down-
pour.
✓Context 2 (inference): In a windowless room, seeing soaked peo-
ple.
It **must** be raining outside.
($r = $ 'that it is raining outside')

(35) $[\![(34)]\!]^{c,g,\langle w,j,K \rangle} = \forall w' \in \bigcap K.r(w')$, defined iff K does not di-
rectly settle r.
   a. Undefined in Context 1:
       $K = \{$ 'that water is falling from the sky', 'that people get
       soaked in a rain' ... $\}$
   b. Defined in Context 2:
       $K = \{$ 'that soaked people are entering', 'that people get
       soaked in a rain' ... $\}$

AI obviation IV

(36) a. $[\![\text{ must } \alpha]\!]^{c,\langle w,j,K \rangle} = [\![\text{ must }]\!]^{c,\langle w,j,K \rangle}([\![\alpha]\!]^{c,\langle w,j,\bigcap K,j \rangle})$

    b. Given the semantics for PPTs:
      $[\![\text{ must [the curry is tasty] }]\!]^{c,\langle w,j,K,j \rangle}$ is defined
      iff $\{\bigcap K\}$ directly settles whether the curry is tasty

    c. vF&G's semantics for *must*:
      $[\![\text{ must }]\!]^{c,\langle w,j,K \rangle}$
      $= \lambda p : \forall w'.w' \in \bigcap K \ p(w')$ defined iff
      K does not directly settle whether p.

(37) a. The puerh must be delicious.

  b. $[\![\, \text{must [the puerh is delicious]}\,]\!]^{\langle\, ...,K_{sp,w},...\rangle,\langle w,j,K_{j,w}\rangle}$
   $= [\![\, \text{must}\,]\!]^{\langle\, ...,K_{sp,w},...\rangle,\langle w,j,K_{j,w}\rangle}$
     $([\![\, \text{the puerh is delicious}\,]\!]^{c,\langle w,j,\{\bigcap K_{j,w}\}\rangle})$
   $= \bigcap K_{sp,w} \subseteq (\textit{puerh.delicious})$, if defined; and
     defined iff $\{\bigcap K_{j,w}\}$ directly settles whether puerh is
     delicious to j in w and $K_{sp,w}$ does not directly settle
      whether puerh is delicious to j in w.

AI obviation VI

Bottom line

AI obviation can be explained via the interaction of the directness requirement of PPTs and the indirectness requirement of obviators.

Overt tasters

- Overt tasters: *to/for* PPs
- A common unified view: the existence of experiencer PPs taken as evidence for a diadic treatment (a.o. Bhatt and Pancheva 1998; Stephenson 2007; Stojanovic 2007; Pearson 2013)
- Our proposal so far: only bare uses

Variation in AI obviation I

▶ Prediction of the common view: overt tasters behave the same wrt obviation

▶ Prediction not borne out:

(38) OVERT TASTER PPs:
The puerh . . . . delicious to me, but I never tasted it.

 a. **#must/✓might** have been   EPISTEMIC MODAL AUXILIARIES

 b. **#probably/#possibly/#maybe** was   EPISTEMIC ADVERBS

 c. **✓will/✓is going to** be   FUTURATE OPERATORS

 d. **#obviously/#certainly/#apparently** PREDICATES OF CLARITY

Variation in AI obviation II

Overt taster PPT pattern with other subjective expressions:

(39) PSYCH PREDICATE WITH AN EXPERIENCER:
The puerh .... delicious to me, but I never tasted it.

   a. **#must/✓might** have looked   EPISTEMIC MODAL AUXILIARIES

   b. **#probably/#possibly/#maybe** looked   EPISTEMIC ADVERBS

   c. **✓will/✓is going to** look   FUTURATE OPERATORS

   d. **#obviously/#certainly/#apparently** looked   PRED. OF CLARITY

Variation in AI obviation III

(40)   SUBJECTIVE ATTITUDE:
     I .... the cake delicious, but I never tasted it.

    a.   **#must/✓might** have found   EPISTEMIC MODAL AUXILIARIES

    b.   **#probably/#possibly/#maybe** found   EPISTEMIC ADVERBS

    c.   **✓will/✓is going to** find   FUTURATE OPERATORS

    d.   **#obviously/#certainly/#apparently found** PREDICATES OF CLARITY

Variation in AI obviation IV

OBVIATORS	COVERT EXPERIENCERS		OVERT EXPERIENCERS		
	PPT	Psych	PPT	Psych	Subjective att
must	✓	✓	#	#	#
might	✓	✓	✓	✓	✓
epistemic adverbs	✓	✓	#	#	#
futurate markers	✓	✓	✓	✓	✓
predicates of clarity	✓	✓	#	#	#

Overt tasters: Proposal I

Obviation facts support a disjoint treatment of bare vs. "overt" uses (as in Lasersohn 2005; MacFarlane 2014, cf. also the contrast in the availability of non-local judges discussed on Day 3)

- ▶ Extending the proposal: overt tasters depend on the DP's kernel

(41) $[\![$ delicious to α $]\!]^{c,i} = \lambda o : o$ is delicious for α in w, defined iff the kernel of $[\![$ α $]\!]^{c,i}$ in w at t directly settles whether o is delicious for α in w

(42) a. The puerh is delicious to me.

  b. $[\![$ the puerh is delicious to me $]\!]^{c,\langle w,j,K_{j,w}\rangle}$
      is defined iff $K_{spkr(c),w}$ directly settles whether puerh is delicious for *speaker*(c) in w.
      If defined, 1 iff puerh is delicious for *speaker*(c) in w.

Overt tasters: Proposal II

1. Unmarked cases: the same as bare uses (modulo the taster)
2. Modification with obviators:
   - indirect markers do not update the kernel coordinate of the taster DP
   - contradictory requirements with 1-person, fine otherwise

(43) a. ✓The puerh must be delicious to Mo.

b. $[\![$ must [the puerh is delicious to Mo] $]\!]^{\langle ...,K_{sp,w},...\rangle, \langle w,j,K_{j,w}\rangle}$
$= [\![$ must $]\!]^{\langle ...,K_{sp,w},...\rangle, \langle w,j,K_{j,w}\rangle}$
$\quad ([\![$ the puerh is delicious to Mo $]\!]^{c, \langle w,j,\{\bigcap K_{j,w}\}\rangle})$
$= 1$ iff $\bigcap K_{spkr(c),w} \subseteq (puerh.delicious)$, if defined; and
defined iff $K_{Mo,w}$ directly settles whether puerh is
delicious to Mo in w
and $K_{spkr(c),w}$ does not directly settle whether
puerh is delicious to Mo in w.

Conclusion

1. Discussion of previous approaches to the AI
2. Differentiating types of acquaintance content
3. Proposal rooted in the research on (in)directness

   Extension 1 obviation is a diagnostic of indirectness rather than modality (pace Klecha 2014; Ninan 2020; Cariani 2021)

   Extension 2 attitudes are taken to be obviators (cf. Yalcin 2007)

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