'I just know it':
Intensification as evidence for non-presuppositional factivity*

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1   Overview

- This talk addresses the construction of *just know* and the implications this has for factivity, exclusivity, and intensification

  (1)   a.   I just know that it's going to rain.
         b.   She just knew that Hillary was going to win.
         c.   Adam just knew that Steve forgot the keys.

- This is not limited to English: Serbian has a similar construction that also makes use of an exclusive operator

  (2)   Prosto/jednostavno znam   da   će   večeras padati kiša.
         Simply/simply   know.1.s COMP will tonight fall   rain
         'I just know that it will rain tonight.'

- There are two interesting observations about utterances like (1):

  – *Just* seems to serve an intensifying function, rather than its 'typical' exclusive function
  – *Know* does not contribute its usual factive inference (i.e., the complement proposition need not be true)

- The combination of these facts is quite puzzling:

  – Why should intensifying/emphasizing a factive predicate result in nonfactivity?

- I argue that the intensification effects of *just* in (1) can be derived from exclusive semantics

  – Here, *just* serves as a pragmatic restrictor to a core semantic value of the predicate it modifies

- Furthermore, the lack of factive inference in these cases indicates that *know* should not be analyzed as a standard factive predicate

  – The factivity of *know* is better understood as a conventional implicature

- *Just* quantifies over alternatives involving these implicatures, resulting in the core semantics of *know*, which does not include the factive inference

2   Background

2.1   FACTIVITY

- Propositional attitude verbs can be separated into two broad categories: **factive** and **nonfactive** (Kiparsky & Kiparsky, 1970; Karttunen, 1971).

  (3)

Factive		Nonfactive	
love	resent	assume	think
(be) aware	(be) odd	(be) anxious	(be) true
know		believe	

- *Know* has generally been analyzed as a factive

- Factive verbs presuppose the truth of their clausal complements, while nonfactives do not

  – Consider the following pairs of sentences, contrasting (strong) factive *regret* and nonfactive *think* in (4)

  (4)   a.   Andrew regrets that Faith ate the last Hot Pocket.
              → Faith ate the last Hot Pocket.
         b.   Andrew thinks that Faith ate the last Hot Pocket.
              no factive presupposition

- In parallel cases, *know* patterns with the factives over the nonfactives:

  (5)   Andrew knows that Faith ate the last Hot Pocket.
         → Faith ate the last Hot Pocket

- This presupposition is evident, as it projects through negation:

  (6)   Andrew doesn't know that Faith ate the last Hot Pocket.
         → Faith ate the last Hot Pocket

- Similarly, following up with a negation of the presupposed content is infelicitous.

  (7)   Andrew knows that Faith ate the last Hot Pocket. #But she didn't—Dawn did.
  (8)   Andrew believes that Faith ate the last Hot Pocket. But she didn't—Dawn did.

- So, in most ordinary instances, *know* patterns with the factives, and its factive inference passes tests for presuppositions

- However, it has also been observed that *know* appears to lose its factivity in some cases:

(9)   John suspects Mary is having an affair. He doesn't know she is.   (Abusch, 2002: 2)

- Note: contrastive focus on *know* is required for nonfactivity; ordinary clause-final stress results in the usual factive inference

(10)   A: Putin is a straightforward, trustworthy guy.
        B: Why do you say that?
        A: George Bush said so.
        B: Yes, but Bush didn't KNOW he was a straightforward, trustworthy guy...
        He just BELIEVED it, or maybe HOPED he was.   (Simons *et al.*, 2016)

- However, as shown above, this presupposition-canceling usually coincides with negation and contrast with alternative intensions

  - So, this cancellation of factivity is less unexpected than in the intensification cases, as it is used to contrast with nonfactive predicates

- This also contrasts with 'strong' factives (e.g., *regret*, *resent*, *hate*)

(11)   Andrew doesn't KNOW that Faith ate the bagel. In fact, she didn't eat it!

(12)   # Andrew doesn't RESENT that Faith ate the bagel. In fact, she didn't eat it!

- We also see cases like (13), where a change of information licenses past tense *know* even when the complement is now deemed false.

(13)   Everyone knew that stress caused ulcers, before two Australian doctors in the early 80s proved that ulcers are actually caused by bacterial infection.   (Hazlett, 2010)

- These factivity-cancelling environments indicate already that *know* should not be analyzed as always truth-conditionally factive

  - Additionally, the contrastive data may indicate that the cancellation of the factive inference is related to focus or exclusivity on *know* (as both make use of alternatives)

2.2   EXCLUSIVITY

- *Just* is generally put in the category of exclusive operator, along with *only*, *merely*, etc.

- Exclusives can generally be paraphrased by "X and no more than X"/"X and nothing more"

(14)   Bill only has $[2]_F$ dogs.
        → "Bill has 2 dogs and no more than 2 dogs."   (Rooth, 1992)

- Meaning has two components:

  - Prejacent: usually assumed to be presupposed
  - Quantificational negation of stronger alternatives: asserted

- In previous work (Wiegand, 2018, In press), I have argued that *just* acts as an exclusive according to this schema even when it does not associate with a focused element

- In particular, *just* can quantify over causes, as well as potentially other objects, like degrees, or even 'usual social expectations'

(15)   I was sitting there and the lamp just broke! (I don't know what happened)
(16)   I just feel like it's going to rain.
(17)   You can't just hit someone!
(18)   John got a phone call in the middle of the meeting and he just got up and left!
(19)   The priest gave Charlotte her communion wafer and she just ate it![1]

- These kinds of uses are clearly quantificational, in the sense that they deny alternatives

  - Many potential follow-ups start with *without...*

2.3   INTENSIFICATION

- As mentioned, the data this talk is concerned with involve an intensifying use of *just*

(20)   I just know that it's going to rain.

- The intuitive meaning of a sentence like (20) is that the speaker believes strongly that it is going to rain

  - This is similar to what has been called the 'emphatic' use of *just* (Lee, 1987) or the 'extreme degree modifier' use (Beltrama, 2016)

(21)   a. Godzilla is just gigantic!   (Beltrama, 2016)
        b. I just love your necklace!

- As noted in (Morzycki, 2012; Beltrama, 2016), this use of *just*, along with other EDMs like *simply*, *flat-out*, *downright* are restricted to extreme predicates

(22)   a. ? Godzilla is just big!
        b. ? I just like your necklace!

- (Morzycki, 2012) argues that EDMs encode a domain widening operator that broadens the set of salient degrees

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[1] Thanks to Todd Snider for discussion of this example.

– Under such an analysis, *know* can be viewed as the extreme end of a scale

– Based on the interpretation of sentences like (20), we could say that this is a scale of strength of belief

Strength of belief scale:
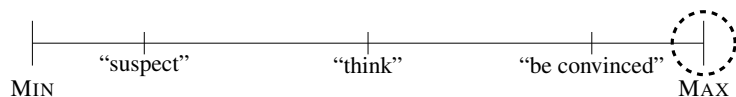
- This would fit into the standard EDM account and correctly predicts the 'strong belief' interpretation of the phrase *just know*

  – However, it does not account for the alternation between factivity in ordinary circumstances and nonfactivity in certain other constructions

  – Additionally, it does not connect this use of *just* to exclusivity

- A different account for EDMs comes from (Beltrama, 2016), who argues that they are metalinguistic expressions operating over alternative expressions

  – This account essentially parallels exclusive semantics; however, rather than saying that the prejacent is the strongest true proposition, it says that the prejacent is the strongest *possible* proposition in the alternative set

    ∗ This amounts to flipping the scale around, and loses the parallels with other very similar uses of *just*

- Ultimately, it seems to me that both of these accounts are on to something, but neither captures the full scope of the issue

3 Analysis

- As an exclusive operator on proposition ϕ, *just* yields "ϕ and no more than ϕ."

- I argue that even in these intensification uses, *just* maintains this general exclusive schema

  – Specifically, it constrains the asserted content to the literal meaning of its predicate, negating conventional implicatures

  – This exclusion occurs in the pragmatics, but it nonetheless requires access to a core value for the semantics of *know* sans factivity

- I argue that *know* is semantically equivalent to a strong version of *believe*

  – Factivity is in the CIs (23b), calculated and bound alongside asserted content (23a)

(23) a. $[\![know]\!] = \lambda p \lambda x \lambda w [\forall w'. w' \in Dox(w,x) \to w' \in p]$
      b. CI(know): $\{w \in p, x$ has evidence for $p, \dots\}$

- This requires the added assumption that the conventional implicatures associated with an element β are applied in default contexts, formalized here as an exhaustification rule for CIs

(24)   Exhaustification rule for CIs: $\mathrm{ASSERT}(\phi) \Rightarrow \mathrm{ASSERT}(\beta), \forall \beta \in \mathrm{CI}(\phi)$
       (Only applies at matrix level/spell-out, i.e., does not apply in the case of *just*)

- I analyze intensifying *just* as an operator at the speech act level (Cohen & Krifka, 2011), which has accessible a set of CIs calculated with the ordinary semantic value.

  – (This is in the spirit of the Beltrama account)

(25) $[\![just(\mathrm{ASSERT}(\phi))]\!] = \mathrm{ASSERT}(\phi) \wedge \forall \beta \in \mathrm{CI}(\phi). \mathrm{ASSERT}(\beta) \to \phi \subseteq \beta$

- There is evidence for a speech act analysis, as implicature/speaker commitment seems targetable with *just*

(26)   A: My boss always approaches me at the end of the day with work for me to do. It's very frustrating.
       B: That's too bad. But maybe she's been really busy lately and other stuff has distracted her.
       A: Well, that's no excuse!
       B: I know, I'm just saying.   (Lee-Goldman, 2011: 77)

(27)   A: John said Mary owns 2 apartments.
       B: No, that's wrong. She owns 3.
       A: He just said she owned 2. (He wasn't implying she didn't own more.)[2]

- SUMMARY: The *just know* construction excludes the CIs (like truth, evidence, etc.)

4 Further data

- As mentioned, there is cross-linguistic support for this phenomenon in Serbian

(28)   Prosto znam   da   će Marko doći na vreme.
       Simply know.1.S COMP will Marko come on time
       'I just know that Marko will show up on time.'

(29)   Prosto/jednostavno znam   da   će sve   bitu u redu
       Simply/simply   know.1.S COMP will everything be   in order.ACC
       'I just know that everything will be all right.'

(30)   Prosto znam   da   će večeras padati kiša.
       Simply know.1.S COMP will tonight fall   rain
       'I just know that it will rain tonight.'

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[2]Thanks to Mats Rooth for this example.

- According to speaker judgments, these can be paraphrased with 'I am certain that…but don't ask me for any evidence,' and lack a factive inference in the same way as English

- There are also non-factive versions of *know* reported in other languages, including Korean, Turkish, and Hungarian[3]

- Intensification without *just* can also result in nonfactive readings of *know*: when under 'emphatic'/sarcastic intonation, *know* loses its presupposition.

  (31) Andrew knows that Faith took the bagel. #But she didn't. Dawn did.
  (32) Andrew KNOWS that Faith took the bagel. But she didn't. Dawn did.

- This seems related to the discussion about contrastive examples, where *know* could behave as a nonfactive when negated and contrasted with another predicate

  – However, this data will need a similar story to the *just know* analysis, as it also comes with the 'strong belief' inference

- The link between exclusivity and intonational prominence is widespread: aside from the obvious focus/exclusive connection, *just* exhibits a similar effect to prosodic emphasis when it intensifies *any*

  – It seems that *just* and bare prosody can be used to force a low scope universal with respect to other operators

  (33) Bill can't lift anything   ($\forall\neg$)   (34) Bill can't lift just anything   ($\neg\forall$)

  (35) Bill can't lift ANYthing   ($\neg\forall$)

  – This behavior is not available to other exclusives like *only*

  (36)   # He can't lift only anything.

  (37)   A: Can just anyone lift Mjolnir?
         B: No, only Thor can.[4]

  – However, it is available with *simply* and other intensifiers like *absolutely*

  (38)   a. He can't lift absolutely anything $\neg\forall$
         b. He can't lift simply anything $\neg\forall$

  – An exclusive semantics for *just* could explain why the universal *any* must take low scope with respect to negation, as quantifiers cannot scope out of the focus semantic value of exclusive operators (Erlewine, 2011)

- Unifying these uses of *just* will likely involve broadening the availability of pragmatic objects in the quantification of *just*

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[3](Chungmin Lee, *Languages with non-factive knowledge verbs of 'know'* slides via personal communication)
[4]Thanks to Todd Snider for this example

5   Conclusions

- *Know*'s factive inference is demonstrably not as strong as ordinary presuppositions, and analyzing it as a CI provides insight into how *just* can intensify and weaken simultaneously.

- Regardless, there is clearly an interaction between intensification and this nonfactivity of *know*, where *know* is interpreted as 'strongly believe'

  – This is evidence that *know* should be analyzed as simply a stronger version of *believe*, with the factivity coming in pragmatically

- One difference between my approach and those of (Morzycki, 2012; Beltrama, 2016) is that I do not want to posit a special lexical entry for EDM *just*

  – Rather, I want to argue that the emphatic interpretation of *just* when it modifies extreme predicates is a result of the particulars of how *just* combines with those kinds of predicates

- The argument that *know* is not semantically factive is not specific to English, and may shed light on how knowledge and belief are structured at a more abstract level in language

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