Exclusive morphosemantics: *Just* and covert quantification[1]

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1 Overview

1.1 Main goals

- Present a morphosyntactic framework representing the variation among exclusive operators
  - Formalizes these differences as morphological restrictions on the alternative set
  - Use this framework to represent known variations between operators like *merely* and *only*
    - Morphosyntactic operator [M]: present with *merely*, but absent with *only* and *just*
- Introduce some new data for *just* as an exclusive operator:
  - **Unexplanatory *just***

(1) a. I was sitting there and the lamp just broke!
b. Snyder: . . . What happened?
Cordelia: She fell! She, she, we were standing at the top of the stairs and she **just** fell! All by herself! (*Buffy the Vampire Slayer*, S1E11)

  - **'Emphatic'/Extreme Degree Modifier *just***

(2) a. I just love your scarf!
b. That fish was just gigantic!
c. You just don't understand.
d. A: Can just anyone lift Mjolnir?
B: No, only Thor can.

- Argue that uses like (1) and (2) are exclusive
  - *Just* can quantify over alternatives involving covert modifiers
    - Causation, consequence, elaboration, pragmatic slack, etc.
  - Therefore, *just* does not always associate with prosodic focus
- Encode the effects of the Focus Principle (Rooth 1992) as a lexical restriction, [FR], for *only* and *merely*

[1]Special thanks to my committee chairs Mats Rooth and Dorit Abusch, as well as to Sarah Murray and my friends and colleagues in the Cornell Semantics Reading Group for their comments, advice and support at various stages of this project. And thanks to audience members at my related presentation at the LSA earlier this year for their valuable questions and feedback.

  - Argue that *just* is underspecified for both [M] and [FR]
  - Accounts for its wider range of uses without positing fine-grained polysemy in the lexicon

- Conclude that these uses of *just* are further evidence that pragmatic information is available in the compositional semantics (Lasersohn 1999; Morzycki 2011)

- Suggest that the focus machinery from alternative semantics can be generalized to a scale structure and distinguished element

  - This allows the covert quantification to parallel overt association with focus

2 Previous observations & analyses

2.1 Basic meaning & properties of exclusives

- Exclusives can generally be paraphrased by "X and no more than X"

  - The prototypical example usually given is English *only*

  (3) Bill only has 2 dogs. → "Bill has 2 dogs and no more than 2 dogs."

- They exhibit a two-part meaning (Rooth 1985, 1992; Beaver & Clark 2008; Coppock & Beaver 2011a; Orenstein 2015):

  - The prejacent/'positive' meaning: The implication that the sentence (without the exclusive) is true at w, the world of evaluation
    - For (3), this would be 'Bill has 2 dogs'
  - The quantificational/'negative' meaning: The implication that every (stronger) salient alternative proposition is false at w
    - For (3), this is loosely 'for all $x > 2$, it is not true that Bill has x dogs'

- The quantificational part of the meaning is what I'm concerned with here[2]

  - However, defining the prejacent for the 'discourse' uses of *just* will be important, as I posit covert elements in the representation of the prejacent

- I posit the following lexical entry for the quantificational part of exclusives (including *just*), following Rooth 1985, 1992; Beaver & Clark 2008; Chierchia 2013, among others

  (4) $[\![\text{EXCL}]\!] = \lambda C_{\leq}.\lambda p.\lambda w.\forall q[(q \in C_{\leq} \wedge w \in q) \rightarrow p \leq q]$ (Rooth 1992; Chierchia 2013)

- $C_{\leq}$ represents an ordered pair $\langle C, \leq \rangle$ of an alternative set C, along with an ordering $\leq$ on C

  - In this framework, alternative sets always come with an ordering
    - Formally, this can be captured using Church's theory of pairs (Church 1941) in lambda calculus
  - [EXCL] takes both an ordered alternative set and the prejacent proposition as arguments

[2]The status of the prejacent as asserted/presupposed/implicated has been widely discussed in the literature. See Roberts 2011 for relevant discussion.

2.2 Variation in scale type

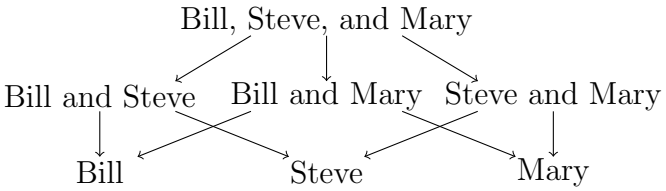
- One source of variation among exclusive operators is the ordering relation on alternative sets (Coppock & Beaver 2011a,b; Beaver & Clark 2008; Orenstein 2015)
  - In English, this can be seen in the distinction between *only* and *merely*
    - *Only* is usually argued to operate over an entailment scale (Rooth 1992); *merely* requires an evaluative ordering (Coppock & Beaver 2011a; Orenstein 2015)
    - Actually, *only* can operate over an evaluative or entailment scale:

- *Only* can be used for two different readings (Beaver & Clark 2008)

(5) It was only Bill on the phone.
  a. Bill was the only person on the phone. (Entailment)
  b. It was not someone more important/relevant on the phone. (Nonentailment)

- A sentence like (5) can be used to assert (5a), where the alternatives are ordered by entailment
  - This results in the typical $\subseteq$ relationship, modeled as an entailment lattice

(6) Entailment Scale for alternatives varying over individuals:



(adapted from (Rooth 1992: 9))

- In (5b) reading, the alternatives are ordered by a normative scale given in the context
  - This is the only reading available to variants of (5) with *merely*

- While the distribution of *only* and *merely* often overlaps, there are places where it comes apart
  - Specifically, when the context values the low end of an otherwise entailment scale

(7) Colleges will only look at people who have fewer than five disciplinary infractions, which is great for me, because I #merely/✓only have two!

(8) Those guys will only let you join their club if you have more than five disciplinary infractions, which is bad for me, because I ✓merely/✓only have two.

- This kind of distinction has been observed cross-linguistically as well
  - (Orenstein 2015; Orenstein & Greenberg 2010) discuss exclusive variability in Hebrew, and among them emerge the distinction between *rak* 'only' and unstressed *stam* 'merely'[3]

- The *merely*-like exclusive, *stam*, resists combination with evaluatively maximal elements

[3]We will come back to Hebrew *stam*, as it also shares some interesting distributional similarities with *just*.

(9) hu rak/#stam zaxa [be-pras Nobel]$_F$
he only/stam won [in.prize Nobel]$_F$
"He only/stam won the Nobel Prize." (Orenstein 2015: 101)

- We can see a similar restriction with *merely* (*#He merely won the Nobel Prize*)
- Note that the Hebrew exclusives do not match up perfectly with the English
  - However, the pattern certainly emerges that some exclusives are restricted to a particular scale while others are more free

- With respect to the scale type parameter, *just* patterns like *only*
  - It may associate with either an entailment or a nonentailment scale

(10) It was just Bill on the phone.
  a. Bill was the only person on the phone. (Entailment)
  b. It was not someone more important/relevant on the phone. (Nonentailment)

- In both interpretations, like *only*, *just* associates with focus

(11) a. Bill only introduced John to [Sue]$_F$. (Rooth 1992)
  b. Bill just introduced John to [Sue]$_F$.
  → Bill did not introduce John to anyone other than Sue.

(12) a. Bill only introduced [John]$_F$ to Sue.
  b. Bill just introduced [John]$_F$ to Sue.
  → Bill did not introduce anyone other than John to Sue.

- *Just* does not resist evaluatively maximal elements

(13) He just won the [Nobel Prize]$_F$. (→ He won nothing/no prize besides the Nobel Prize)

- Main point: some operators are more restricted than others with respect to this scale parameter
  - *Merely* must associate with an evaluative scale
  - *Only* and *just* are not restricted on this axis

3 Framework: Encoding the scale parameter

- The distinctions between *only* and *merely* can be formalized as a morphosemantic constraint on the scale type
  - These presuppositions are present for exclusives that require a particular type of scale
  - E.g., *merely* comes with a presuppositional requirement for an evaluative scale

- We can define what it means to be an evaluative scale:

(14) An ordered alternative set $C_{\leq}$ is an evaluative scale if the set is ordered such that given a relevant question in the context, for every $\psi_1, \psi_2 \in C_{\leq}$ such that $\psi_1 \leq \psi_2$ (where $\psi_1 \neq \psi_2$), ψ_1 is valued as more relevant than ψ_2 according to a normative ordering source in the context, in the sense of Kratzer 2002.

- I posit the following presupposition restricting alternative sets to these scales[4]

  (15) $[\![\text{M}]\!] = \lambda F.\lambda K[F(K) \wedge \partial(\text{K is an evaluative scale})]$

- The lexical entry for *merely* is the result of composing the core [EXCL] meaning with [M]

  (16) *Merely*: Composition of [EXCL] and [M]:

$$\lambda w.\forall q[(q \in C_{\leq} \wedge w \in q) \rightarrow \phi \leq q] \wedge \partial(\text{C}_{\leq} \text{ evaluative scale})]$$

$$\lambda p.\lambda w.\forall q[(q \in C_{\leq} \wedge w \in q) \rightarrow p \leq q] \wedge \partial(\text{C}_{\leq} \text{ evaluative scale})] \quad \phi$$

$$\lambda K.\lambda p.\lambda w.\forall q[(q \in K \wedge w \in q) \rightarrow p \leq q] \wedge \partial(\text{K evaluative scale})] \qquad C_{\leq}(\phi)$$

$$\text{EXCL}{:=}\ \lambda C_{\leq}.\lambda p.\lambda w.\forall q[(q \in C_{\leq} \wedge w \in q) \rightarrow p \leq q] \quad \text{M}{:=}\ \lambda F.\lambda K[F(K) \wedge \partial(\text{K evaluative scale})]$$

- I remain open to the idea that other presuppositional operators on scale type could exist
  - For example, it's possible that we may find an exclusive restricted to entailment scales
  - A candidate for this in English is the exclusive *solely*, which seems to be in a non-overlapping distribution with *merely* (in terms of interpretation)
- Crucially, this kind of analysis requires that the scale $\leq$ be available for modification in the semantic representation
  - So, we at least need an ordered pair $\langle C, \leq \rangle$ provided by the context
  - In the case of *merely* and *only*, at least C is constrained by the Focus Principle to vary according to the element under prosodic focus
    - However, as we will see, *just* and some other operators perform a very similar operation without the structure of focus required for *only* and *merely*

4 Covert sources of alternatives

- Another source of variation among alternatives is the availability of covert elements as the source of variation in the alternative set
  - This has been described in Orenstein 2015 as 'internal' alternatives, and in Wiegand 2017 as lack of required association with a focused element
- The main evidence in Orenstein 2015 is from accented *STAM*
  - Unlike unaccented *stam*, which patterns much like *merely*, accented *stam* has been argued to quantify over 'internal alternatives' (Orenstein 2015)

[4] I use the ∂ notation from (Beaver 2001) to represent presuppositional content.

- Internal alternatives can be thought of as variants of the prejacent

(17) kibalti Saon, ha-beaya hi Se-ze *STAM* Saon!
Got.I watch the.problem she that.it *STAM* watch
"I got a watch. The problem is that it's *STAM* a watch!" (Orenstein 2015: 103)

- Orenstein argues that *STAM* combines with alternatives including covert modifiers of 'watch'
  - Resulting paraphrase: 'it's just a plain watch, and not a better kind of watch'
- Crucially, Orenstein requires a covert 'minimal' or 'standard' modifier in the prejacent
- I have argued that there are uses of *just* that can be analyzed in a very similar way (Wiegand 2017)
  - The clearest of these I have called 'unexplanatory' uses of *just*

4.1 Unexplanatory *just*

- Unexplanatory *just*: Used to distance the speaker from explanation, cause or reason for the eventuality described

(18) Unexplanatory *just*
  a. I was sitting there and the lamp just broke!
  b. I walked into the store, saw the necklace, and just took it. I don't know what came over me.
  c. He just stopped texting me. (I don't know why).

- The intuition here is that for (18a) the speaker does not know what caused the lamp to break
  - This can be used for a variety of effects (suddenness, denial of fault, etc.)
- This use contrasts with 'ordinary' *just*, where it behaves like *only*/*merely*
  - The meaning is significantly different (does not mean "the lamp broke and nothing more")
  - This is shown in the infelicity of *only* and *merely* in these contexts (with same reading)

(19) a. # I was sitting there and the lamp only/merely broke!
  b. # He only/merely stopped texting me (I don't know why).

- Unexplanatory *just* does not associate with prosodic focus the way ordinary exclusives do
  - Focus Principle (Rooth 1992): alternative sets must be subsets of focus alternatives
    - Without the presence of prosodic focus with this use of *just*, it cannot adhere to this principle when generating its alternative set
- Despite these issues I argue that unexplanatory *just* can still be represented as an exclusive
  - Can still be reduced to a quantificational denial via the semantics of [EXCL]

- Consider the simplified sentence in (20)

  (20) The lamp just broke.

- Under the unexplanatory reading, the asserted content of the utterance is that the speaker is unaware of the cause of the lamp breaking
  - This can be seen in the fact that this implication can be targeted with negation
  - Consider the following exchange between, for example, a parent (A) and child (B), where the parent has walked into a room and discovered a broken lamp on the floor

  (21) A: What happened here?
  B: The lamp just broke!
  A: The lamp didn't just break, Timmy. Did you break the lamp?

  - It seems clear that the question this discourse addresses is how/why the lamp broke
  - In the last line, speaker A is negating the implication that the lamp broke for no reason

- If we encode causation/explanation relationships as accessible entities for quantification, unexplanatory *just* can be analyzed as a negation of causes
  - This requires allowing covert internal modification of the prejacent
  - The alternative set for (20) would be triggered by a covert *because*-clause

- Unlike the alternative sets for ordinary exclusives, the causal relationship is often not explicitly denoted in the sentence, much less marked with focus intonation
  - I have argued elsewhere that causation relationships are available for quantification due to the information structure of conversations
  - In particular, when the question of *why* is part of the current question of inquiry
  - This correlates with the felicity of unexplanatory *just* in answers to *why* questions

  (22) a. A: Why did Alison walk backwards all day?
  B: She just did!
  b. A: Why do you like Buffy the Vampire Slayer so much?
  B: I just do! (I don't care to tell you/I don't know)

  - Without the *just*, these responses are quite anomalous, as they are uninformative

  (23) a. A: Why did Alison walk backwards all day?
  B: #She did!
  b. A: Why do you like Buffy the Vampire Slayer so much?
  B: #I do!

  - However, the responses in (22) actually are informative, in that they negatively quantify over reasons for the questioned content

- When they are available, a covert minimal cause, which I label $\textsc{cause}_0$ is filled in as the trigger for the alternative set
  - This minimal cause is necessary to avoid undesirable results like asserting that something has no cause, contrary to most views of how the physical world works
  - (And there is evidence that redundant information can be included in these constructions)

  (24) I'm not just saying this because I'm saying it. There's evidence behind it.

  - So, seems logical to conclude that this cause could be as minimal as the prejacent itself
- The covert modifier approach seems promising for unexplanatory *just*
- However, some modification required: quantification not a flat denial of a cause existing
  - Utterances using unexplanatory *just* can be followed up with proposed causes

  (25) He just stopped texting me. Maybe it's because I made that quip about his mother.

- Importantly, it does seem that modalized answers like (25) are better than pure assertions

  (26) He just stopped texting me. ??It's because I made that quip about his mother.

- So, I propose that the causation relationships are modalized with an epistemic necessity modal
  - So the alternative set for (20) would look like the following:

  (27) $C = \{$The lamp broke $\Box\textsc{cause}_0$, The lamp broke $\Box$(because the cat knocked it down), The lamp broke $\Box$(because the wind knocked it over), $\dots\}$

  - Again, I remain agnostic about whether the $\leq$ is entailment or evaluative
  - Either ordering would result in the correct truth conditions here
    - Furthermore, *just* can associate with either in other environments, so it is possible that there would be some ambiguity here that we could tease apart
- So, given an utterance of (20), we get the following derivation and resulting paraphrase

  (28) Utterance: The lamp just broke.
  e: the event of the lamp breaking
  $C = \{e$ $\Box$because $x \mid x$ is a contextually salient potential cause for $e\}$
  $\phi = e$ $\Box$because $\textsc{cause}_0$, where $\textsc{cause}_0$ is some "minimal cause"
  $[\![\textsc{excl}(\phi)]\!] = \lambda w.\forall q(q \in C \ \wedge \ w \in q) \rightarrow \phi \leq q]$
  Resulting Paraphrase: "For all explanations q=*The lamp broke necessarily because* x that are not entailed by ϕ=*The lamp broke necessarily because* $\textsc{cause}_0$, $q \notin w$."

- This phenomenon of covert modification seems much broader than causes
  - There are times when the covert element could be analyzed as a consequence

(29) You can't just hit someone.

- Unexplanatory reading: could be paraphrased 'You can't just hit someone for no reason'
- However, could also be used for, e.g., 'You can't just hit someone and get away with it'
  - Either follow-up felicitous; the second would require different kind of covert modifier

- There are also a host of uses of *just* that have been previously addressed in the literature, which I will argue can be captured in this framework of covert quantification

4.2 Beyond unexplanatory *just*

- While unexplanatory *just* can be fairly easily seen as exclusive when viewed as a quantification over causes, there are very similar uses that do not carry a clearly exclusive meaning
  - One such use has been called 'emphatic' *just* (Lee 1987, 1991; Kishner & Gibbs 1996)
  - It has also been analyzed as an extreme degree modifier, alongside *flat-out*, *downright*, *simply*, etc. (Morzycki 2012; Beltrama 2016)

- Examples are shown below

(30) Emphatic/EDM *just*
  a. It was just impossible!
  b. That fish was just gigantic!
  c. That roller coaster was just incredible!

- This use is generally restricted to extreme predicates
  - We can see this in the following contrast

(31) a. That fish was just gigantic!
  b. # That fish was just big![5]

- Uses like this one have been classified as emphatic, yet there is evidence that it does not pattern with other intensifiers like *very*
  - In fact, they seem to often be in complementary distribution

(32) a. # Godzilla is very gigantic.
  b. Godzilla is very big.

(Beltrama 2016: 80)

- The behavior of this use of *just* (and other EDMs) has been analyzed as a metalinguistic intensification (Beltrama 2016)
  - Interestingly, the analysis of *just* as an EDM involves alternatives and quantification over those alternatives

[5]There actually is a reading where this *just* is felicitous, but it is more difficult to get than with the extreme predicates.

  - Alternatives in such a framework are either lexical or pragmatic alternatives to the word choice in the prejacent

- I argue that we can capture this intuition in a manner parallel to the treatment of unexplanatory *just*
  - Rather than covert minimal causes, emphatic/EDM uses of *just* quantify over covert minimal degrees of deviation
- This can account for the pragmatic effect resulting in the paraphrase "x and that's all I need to say" observed in Beltrama 2016
- Utilizing covert modifiers allows us to capture the similarities between ordinary exclusives and quantification over these more pragmatic alternatives
- Another reason to extend the covert modifier analysis to EDM *just* is that the line is blurry between this use and the unexplanatory use

(33) I just love your necklace!

  - (33) could be used to express lack of (knowable/accessible) cause for the love
  - But it also results in the pragmatic emphatic effect of EDM *just*

- The fact that there is such a gradient here is evidence that these uses may be the result of an underlying structural similarity
- I propose that this use involves a covert slack regulator (Lasersohn 1999) over which *just* quantifies
  - In Lasersohn's framework, every expression has a pragmatic halo, or degree of acceptable variation from the literal meaning
    - Slack regulators restrict or widen that halo
- So, given such a framework, we can say that EDM *just* behaves much like a slack regulator in that it restricts the pragmatic halo to some minimal degree of deviation SLACK_0
  - This might explain the restriction to extreme predicates, since the exclusive would require some precise value that it could restrict the slack to
  - However, with the right context and prosody, almost every non-extreme predicate example can be used with this *just*
- Once we introduce these kinds of covert degrees, it is also possible that we will be able to capture the remaining categories of polysemous meanings of *just*
  - Some examples of these are shown below:

(34) Specificatory (Spacial/Temporal) *just*
  a. I'm just finishing my homework.
  b. I've just heard that you are leaving us. (Lee 1987: 390, ex. 72–73)

c. You have something just below your eye.

(35) Exact *just*

a. Just where do you think you're going? (Kishner & Gibbs 1996: 19, ex. 5)

b. I want to know just how he got in here.

(36) Comparative *just*

a. I love cookies, just as you love cake. (Kishner & Gibbs 1996: 19, ex. 6)

b. Just like the previous example, this is an example of comparative *just*.

- In particular, the examples in (34) could easily be captured if we encode covert temporal and spacial degree modifiers

5 Encoding covert quantification

- Allowing for quantification over alternatives derived from cover modifiers can account for the range of uses of operators like *just* with a common core exclusivity
  - However, generalizing to this extent has ramifications on standard views of alternative semantics and association with focus
- There is a robust distinction in the distribution of *just* compared to *only* and *merely*
  - It seems that *only* and *merely* (and likely other exclusives) are restricted to contexts where the alternative set is derived via focus association
  - I.e., *only* requires the trigger for the alternative set to be overt (and under focus)
- We can capture this distinction by positing another morphosyntactic restriction like [M] which requires overt alternative set triggers/association with focus
  - The simplest way to encode this is to leave the focus machinery alone, but reformulate the Focus Principle as a lexical requirement of words like *only*
  - This is shown below in (37) as a focus restriction (FR) constraint

(37) $[\![\text{FR}]\!] = \lambda F.\lambda K.\lambda q[F(K)(q) \wedge \partial(K \subseteq [\![q]\!]^F)]$

- So we get the following morphosyntactic representations of *only* and *merely*, respectively

(38) *Only*: Composition of [EXCL] and [FR]:

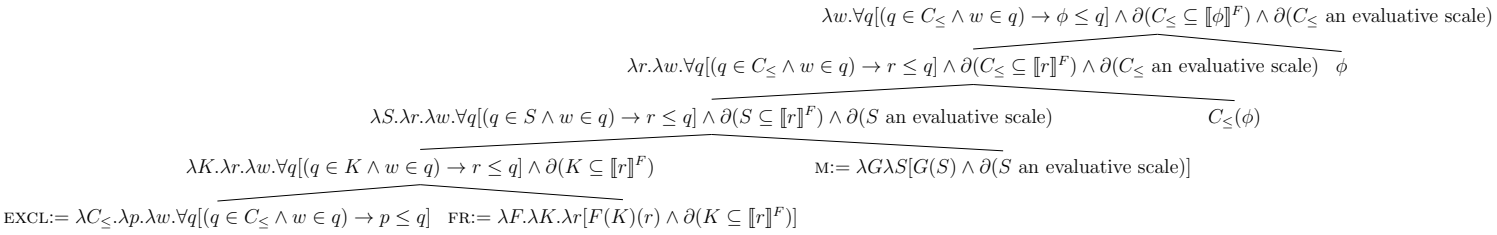
$\lambda w.\forall q[(q \in C_{\leq} \wedge w \in q) \rightarrow \phi \leq q] \wedge \partial(C_{\leq} \subseteq [\![\phi]\!]^F)]$

$\lambda r.\lambda w.\forall q[(q \in C_{\leq} \wedge w \in q) \rightarrow r \leq q] \wedge \partial(C_{\leq} \subseteq [\![r]\!]^F)]$ ϕ

$\lambda K.\lambda r.\lambda w.\forall q[(q \in K \wedge w \in q) \rightarrow r \leq q] \wedge \partial(K \subseteq [\![r]\!]^F)]$ $C_{\leq}(\phi)$

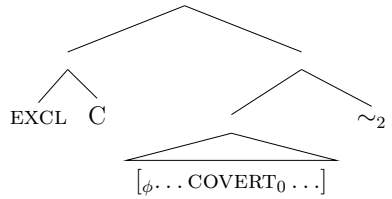
EXCL:= $\lambda C_{\leq}.\lambda p.\lambda w.\forall q[(q \in C_{\leq} \wedge w \in q) \rightarrow p \leq q]$ FR:= $\lambda F.\lambda K.\lambda r[F(K)(r) \wedge \partial(K \subseteq [\![r]\!]^F)]$

(39) *Merely*: Composition of *only* and [M]:



- This alone is not sufficient to account for the behavior of uses like unexplanatory *just*, however
  - Without the focus semantic machinery, we have no way of associating the covert elements with the variation in the alternative set
  - To accomplish this, I propose a generalization of what it means to be an alternative set for exclusive operators
    - Essentially, exclusive operators require three components in addition to their prejacent: a set of propositions, an ordering over that set, and an a distinguished syntactic element that varies with other elements of the same semantic type
  - In the case of ordinary association with focus, the distinguished syntactic element is the focused element
    - The restriction to focused elements is covered by the [FR] morpheme
    - However, I will argue that ∼ is better thought of as an operator that constructs an alternative set, rather than enforcing an anaphoric relationship
      - This relationship will need to be re-encoded for the purposes of general focus semantics and discourse coherence
  - When the distinguished element is a covert modifier, then a corollary to the ∼ operator in Rooth 1992 is introduced
    - This operator, $\sim_2$, builds the alternative set C based on the distinguished element

(40) Schema for introduction of covert modifiers



- In sum, *just* remains underspecified for the [FR] constraint, leaving it free to associate with covertly triggered alternative sets
  - This, along with the discussion of [M] in §3 results in *just* being the least morphosyntactically complex of the exclusives discussed

6 Consequences and remaining issues

6.1 Interaction with quantifiers

- One additional reason to analyze EDM *just* as an exclusive comes from the interaction of *just* with quantifier *any*
  - It seems that *just* can be used to force a low scope universal with respect to other operators

(41) a. He can't lift anything. $\neg\exists = \forall\neg$
b. He can't lift just anything. $\neg\forall$

- Again, this behavior is not available to other exclusives like *only*

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

- However, it is available with *simply* and other intensifiers/slack regulators like *absolutely*

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

- This scope-blocking behavior actually fits nicely with the analysis of these uses of *just* as exclusive
  - It has been noted that exclusive operators can block certain scopal relationships (Erlewine 2011)
  - In Japanese, *dake* 'only' blocks distributive readings of possessors

(44) a. taro to hanako-no inu-o mi-ta
Taro and Hanako-GEN dog-ACC see-PAST
'I saw Taro and Hanako's dog(s)'
'I saw Taro's dog(s) and Hanako's dog(s)'

b. taro to hanako-**dake**-no inu-o mi-ta
Taro and Hanako-DAKE-GEN dog-ACC see-PAST
'I saw the dog(s) that belong only to Taro and Hanako.'
* 'I saw the dog(s) that belong only to Taro and the dog(s) that belong only to Hanako.'

(Erlewine 2011)

- This can also be seen with *only* and quantifier raising in English

(45) a. Someone wants to meet every boy.
'There's one person who wants to meet every boy.'
'For every boy x, there's someone who wants to meet x.'

b. Someone wants to only meet every $[\text{boy}]_F$.
'There's one person who wants to **only** meet every $[\text{boy}]_F$.'
* For every $[\text{boy}]_F$ x, there's someone who **only** wants to meet x.'

(Erlewine 2011)

- The benefit of this analysis is that the exclusive semantics of *just* explains why the universal *any* must take low scope with respect to negation, as quantifiers cannot scope out of the focus semantic value (which can be generalized to the distinguished element) of exclusive operators
- It also explains why *just* patterns so closely with emphatic adverbs like *absolutely* and *utterly*, since they have been analyzed as slack regulators.

7 Metalinguistics and expressivity

- My framework for the contribution of *just* has been truth-conditional
  - However, it seems clear that *just* is also contributing some expressive content
  - This can be seen in examples where it behaves like a discourse marker
    - It can exhibit concord behavior, as in (46)

(46) The legislators didn't just_1 change the word because they just_2 felt like it.[6]

- Here $just_1$ and $just_2$ contribute the same truth-conditional content
  - In fact, if we tried to compose (46) with two instances of *just*, we would get the wrong truth-conditions
- This is fairly common for discourse markers, where the expressive content can be repeated or reinforced
- *Just* has also been analyzed as a metalinguistic device
- Despite my compositional treatment of *just*, I do think that it can be used in non-truth-conditional ways
  - However, its expressive content follows the semantic structure of [EXCL]
- It is possible that this can give us insight into the diachronic development of discourse markers as extensions of semantic content to the pragmatic domain

8 Concluding remarks

- I have proposed a morphosyntactic representation of exclusive operator variation
  - This framework allows us to describe all exclusives in terms of their common meaning
  - Also explains their distributional restrictions in terms of morphological presuppositions

[6]This example was produced in a graduate research workshop presentation at Cornell (topic of ambiguitiy in a perjury statute), given by Sarah D'Antonio on 3/8/2016, and reproduced here with her permission.

- I have also demonstrated some broader uses of *just* as an exclusive operator
  - Shows that the (prosodically-oriented) Focus Principle may not apply to all exclusives
  - There is reason to believe that prosodic focus as described in the Focus Principle is a reflex of a larger constraint on alternative sets
- The extension to pragmatic slack regulators raises questions about the line between semantics and pragmatics, as it requires encoding pragmatic inferences in the formal semantics.
  - This encoding is quite crucial to derive the correct scope for quantifiers, and is therefore essential for determining the truth-conditional semantics.
  - The presence of pragmatic information in the compositional semantics can explain the rhetorical effects (emphasis, surprisal, distancing) that *just* often indexes.
- Future work on this topic will include some other uses of *just*, as well as exclusives cross-linguistically, within this framework
  - Other parameters have been posited (Orenstein & Greenberg 2010; Orenstein 2015), and I am interested in how many of them we can encode in a framework like this
  - Other exclusives in English could also shed light on these parameters:
    - *Simply* occurs in the same places as the 'discourse-sensitive' *just* I have described
    - It is possible that *simply* is constrained to only occur with 'internal' alternatives
  - Furthermore, we will see if any typological patterns emerge between these parameters
    - E.g., could an operator be restricted to internal alternatives ordered by entailment?
- Additionally, once we have further researched the kinds of uses of exclusives that occur, we will need to go further in constraining the availability of covert elements for quantification
- The reanalysis of $\sim$ as producing a structured alternative set rather than enforcing an anaphoric relationship will require re-introducing that relationship when dealing with focus semantics outside of exclusive operators

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