Ever free-relative clauses and Maximize Presupposition[*]

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1 Introduction

- In English, free-relative clauses[1] marked with *-ever* (*ever*-FRCs) are definites, (1)-(2) (see also Jacobson 1995, Dayal 1997)

    (1)   FRCs can be used referentially
             Context: Mary bought a book.
             a.   The book she bought is over there on the shelf
             b.   Whatever book she bought is over there on the shelf
             c. ??Every book she bought is over there on the shelf
             d. ??A book she bought is over there on the shelf

    (2)   Singular count *ever*-FRCs require uniqueness
             Context: Mary bought five books.
             a. #The book she bought is over there on the shelf
             b. #Whatever book she bought is over there on the shelf
             c.   Every book she bought is over there on the shelf
             d.   A book she bought is over there on the shelf

- But unlike 'ordinary' definites, they require ignorance about the identity of the referent, (3)[2]

    (3)   *Context: Mary bought War and Peace.*
             a.   The book she bought is over there on the shelf
             b. #Whatever book she bought is over there on the shelf

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[1]A free-relative clause is a constituent that has the internal composition of a WH-clause but the external distribution of a DP, PP, AdvP etc., as in *what Mary bought* in *What Mary bought is over there on the shelf* (cf. *I wonder what Mary bought*).

[2]i.-ii. are other facts that illustrate *ever*-FRCs' ignorance implications/requirements; I will not address them in this talk.

i.   Incompatibility with *namely*-appositives
         a.   The book Mary bought – namely, *War and Peace* – is over there on the shelf
         b. #Whatever book Mary bought – namely, *War and Peace* – is over there on the shelf   (Elliott 1971, Dayal 1997)

ii.   Unacceptability as subjects of specificational sentences
         a.   The book Mary bought {is over there on the shelf, is *War and Peace*}
         b.   Whatever book Mary bought {is over there on the shelf, #is *War and Peace*}   (Elliott 1971, Iatridou & Varlokosta 1998)

- What produces *ever*-FRCs' extra ignorance requirements?

  - Semantics
    By virtue of containing the alternative-evoking expression *ever*, *ever*-FRCs are associated with a set of referentially-equivalent, definite alternatives that carry stronger presuppositions about the identity of the referent

  - Pragmatics
    A principle called Maximize Presupposition (Heim 1991, Sauerland 2008, etc.) dictates that a speaker's utterance is felicitous only if it has the strongest known presupposition among its equally-informative alternatives

- I show how these assumptions explain ignorance and other 'readings', whose availability is correlated with what grammatical environment the *ever*-FRC occurs in

- I contrast the present account with ones that analyze *ever*-FRCs as semantically encoding modality (Dayal 1997, von Fintel 2000, Hirsch 2015, a.o.)

- I situate the proposal more broadly in the literature on ignorance with DPs e.g. epistemic indefinites

2   Proposal: Denotation, alternatives, and ignorance

- I assume a theory definiteness based on uniqueness presuppositions, (4) (see Appendix B for plural *ever*-FRCs)

  (4)   For any $P \in D_{et}, \iota x[P(x)]$ is defined only if there is exactly one x such that $P(x) = 1$. When defined, $\iota x[P(x)]$ is the unique x such that $P(x) = 1$.

- The difference between an ordinary *the*-DP and an *ever*-FRC is that the latter has an extra presupposition, 'the *ever*-presupposition', (5a-b); *ever* denotes some property, which is presuppositionally ascribed to the referent[3]

  (5)   a. $[\![\text{the } \phi_{et}]\!]^c = \iota x[[\![\phi]\!]^c(x)]$
          b. $[\![\text{whatever } \phi_{et}]\!]^c$ is defined only if $[\![\text{ever}]\!]^c(\iota x[[\![\phi]\!]^c(x)]) = 1$.
             When defined, $[\![\text{whatever } \phi]\!]^c = \iota x[[\![\phi]\!]^c(x)]$ (see Appendix A for structure and derivation)

- *Ever* serves to highlight some domain and it is obligatorily associated with a set of contextually-determined alternatives, $\text{ALT}_c(\text{ever})$, which partition the domain, as in (6a-b) (inspired by Krifka 1995, Chierchia 2013 on NPI-*ever* and Condoravdi 2008, 2015 on *ever*-FRCs)

  (6)   a.   For any context c, $\{[\![\phi]\!]^c : \phi \in \text{ALT}_c(\text{ever})\}$ is a partition of $[\![\text{ever}]\!]^c$
          b.   A set of properties $C_{\langle\langle s,et\rangle,t\rangle}$ is a partition of $P_{\langle s,et\rangle}$ iff:
             (i) $\exists Q, Q' \in C[Q \neq Q']$ Non-trivial partitioning
             (ii) $\neg\exists Q \in C[\forall w[Q(w) = \varnothing]]$ Satisfiable properties
             (iii) $\forall w[\forall Q, Q' \in C[Q \neq Q' \rightarrow Q(w) \cap Q'(w) = \varnothing]]$ Non-overlapping properties
             (iv) $\forall w[\bigcup\{Q(w) : Q \in C\} = P(w)]$ Jointly exhaust P

  (7)   Possible values for *ever* and alternatives

          $\lambda w.\lambda x. \; x$ is W&P in $w \vee x$ is AK in $w \vee x$ is R in w $\lambda w.\lambda x. \; x$ is in front of us in w

  $\lambda w.\lambda x. \; x$ is W&P in w $\lambda w.\lambda x. \; x$ is AK in w $\lambda w.\lambda x. \; x$ is R in w $\lambda w.\lambda x. \; x$ is on our left in w $\lambda w.\lambda x. \; x$ is on our right in w

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[3]Expressions are evaluated relative to a context c, which supplies an assignment function and 'common knowledge' i.e., the set of worlds compatible with the mutual public beliefs of the interlocutors in c ($\approx$ Stalnaker's 'context set'). w_c is an object-/meta-language variable for an arbitrary 'common knowledge'-world.

- So *whatever* ϕ denotes the same thing as *the* ϕ, but it presupposes that *the* ϕ is *ever*; it has alternatives that denote *the* ϕ, presupposing that it is something more specific than *ever*

- The felicity of the *ever*-FRC is in part determined by the principle of Maximize Presupposition (Heim 1991, Sauerland 2008, a.o.), as in (8)

(8)   Maximize Presupposition (MP)
         Given two utterances that would be equally informative relative to what is common knowledge in the conversational context, use the presuppositionally stronger one if it would be felicitous (i.e. if its stronger presupposition is common knowledge)

- MP was proposed to explain contrasts between *a* and *the* like (9)

(9)   I will go to the beach because {#a, the} sun is shining today

- Standard assumptions make *a* and *the* equally informative in this context, but *the* has a stronger presupposition, which is common knowledge; MP rules out the use of *a*

- Likewise, according to the proposed semantics, *whatever* ϕ and its alternatives denote the same thing, so MP rules out using *whatever* ϕ when an alternative's stronger presupposition is common knowledge

- The infelicity of the *ever*-FRC in (10) is explained on the assumption that the naming of the book provides a clue as to the contextually-relevant partitioning of books (e.g. (10a-b)); it also provides the information that the referent has an alternative partitioning property, meaning that MP rules out the use of the *ever*-FRC[4][5]

(10)   *Context: Mary bought War and Peace.*
         #Whatever book she bought is over there on the shelf

         a.   Meanings of alternatives: $\{[\lambda w. \lambda x.\ x\ \text{is } War\ and\ Peace\ \text{in } w], \dots\}$
         b.   Meaning of *ever*: $[\lambda w. \lambda x.\ x\ \text{is } War\ and\ Peace\ \text{in } w \vee \dots]$

- Ignorance inferences are context-sensitive because many values for *ever* and its alternatives are consistent with the partitioning requirements, (11a-b) (inspired by Heller & Wolter 2011)

(11)   a.   #Mary bought *War and Peace*, and whatever book she bought is over there on the shelf
         b.   *Context: Two copies of War and Peace, one on the left and one on the right. Mary bought one and Sue bought the other. I like Mary more.*
               Whatever book Mary bought is the one I will read

3   Beyond ignorance

- If an *ever*-FRCs appears in a structure that affects how the *ever*-presupposition 'projects' (i.e. is compositionally integrated into the presupposition of the full utterance), then ignorance is no longer the only way to satisfy MP

- I show a few cases where ignorance is obviated and other requirements emerge, as predicted by the account; they all exemplify the 'universal projection' schema in (12)

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[4]One might appeal to the absence of a salient partitioning to explain the oddness of (10), but i. suggests an independent need for MP.

i   Everyone bought *W&P, AK*, or *R*. Mary bought *W&P*, and #whatever book she bought is over there on the shelf

[5]I remain vague about what should have been said instead (e.g. *the book Mary bought, War and Peace*?); unlike in the traditional Gricean conception of alternatives as other things the speaker could have said, I am viewing alternatives as LFs, and they may not correspond directly to a particular phrase of English (see the conception of alternatives in the NPI literature, e.g. Krifka 1995).

(12) $Op\text{-}\mathrm{Dom}_{\sigma,t}\,[\lambda 7_\sigma \ldots [\text{whatever } [\ldots v_{\sigma,7} \ldots]\,]]_\phi$
            (12) is defined only if $\forall x_\sigma \in [\![\mathrm{Dom}]\!]$, $[\![\phi]\!](x)$ is defined

- Important components of the schema:

  - A quantificational operator, $Op\text{-}\mathrm{Dom}_{\sigma,t}$, 'projects universal presuppositions' (i.e. combines with its sister to produce a constituent that is defined only if every element in its quantificational domain satisfies the presuppositions of its sister)
  - It binds into the restrictor of the *ever*-FRC

- In structures exemplifying the schema, we derive 'universally projected *ever*-presuppositions', and alternatives to the structure exemplifying the schema have 'universally projected alternative-presuppositions', (13a-b)

(13)   a.   For every $x \in [\![\mathrm{Dom}]\!]^c$, $[\![\text{ever}]\!]^c(\iota y[[\![\ldots v_7 \ldots]\!]^{c,g_c[7\to x]}(y)])$
        b.   For every $x \in [\![\mathrm{Dom}]\!]^c$, $[\![\phi]\!]^c(\iota y[[\![\ldots v_7 \ldots]\!]^{c,g_c[7\to x]}(y)])$, where $\phi \in \mathrm{ALT}_c(\text{ever})$

- (13a) will be the strongest known presupposition among alternatives if it is common knowledge that for different values of $x \in [\![\mathrm{Dom}]\!]^c$, the $\phi \in \mathrm{ALT}_c(\text{ever})$ that holds of the (bound-into) referent varies; thus, MP can be satisfied and no ignorance is perceived

3.1   Distributive individual quantifiers (e.g. *every*)

- When an *ever*-FRC is bound into by a distributive quantifier (e.g. *every*), it doesn't necessarily require ignorance; when ignorance is not satisfied, *ever*-FRCs require variation across the domain of the quantifier, (14a-b) (Lauer 2009)

(14)   a.   *Context: Yesterday, A read War and Peace, B read Anna Karenina, and C read Resurrection.*
            Everyone$_7$ enjoyed whatever book they$_7$ read
        b.   *Context: Yesterday, A, B, and C all read the same book, War and Peace.*
            Everyone$_7$ enjoyed {#whatever, the} book they$_7$ read

- According to standard assumptions (Heim 1983, Chemla 2009, a.o.), these examples exemplify the universal projection schema

(15)   Every nation$_7$ cherishes its$_7$ king

        a.   Presupposes: For every nation x, x has a unique king
        b. $[\![\text{every } \phi\,\psi]\!]^c$ is defined only if for all $x \in [\![\phi]\!]^c$, $[\![\psi]\!]^c(x)$ is defined.

- (14a) has the universally projected *ever*-presupposition in (16a); its alternatives have presuppositions like (16b)

(16)   a.   For every person x, $[\![\text{ever-}w_c]\!]^c(\iota y[y$ is a book in w_c and x read y in $w_c])$
        b.   For every person x, $[\![\phi\text{-}w_c]\!]^c(\iota y[y$ is a book in w_c and x read y in $w_c])$, $\phi \in \mathrm{ALT}_c(\text{ever})$

- (16a) is the strongest known presupposition among alternatives when it is known that the individuals quantified over by *everyone* read different books (or when, for at least one individual quantified over by *everyone*, the identity of the book they read is not common knowledge)

- The use of the *ever*-FRC is not MP-compliant when everyone is known to have read the same book, and the book's identity (with respect to the salient partitioning of individuals) is known

3.2 Attitude predicates (e.g. *be convinced*)

- *Ever*-FRCs in the scope of attitudes can be licensed by subject-ignorance, (17a-b) (von Fintel 2000)

  (17) a. *Context: Mary bought War and Peace. Sue knows that Mary bought a book but doesn't know which.*
            Sue is convinced that whatever book Mary bought is over there on the shelf
        b. *Context: Sue knows that Mary bought War and Peace*
            #Sue is convinced that {#whatever, the} book Mary bought is over there on the shelf

- Attitudes like *be convinced* are also assumed to project universal presuppositions, (18) (Karttunen 1973, Heim 1992, a.o.); the de dicto LF in (19a) has the universally projected *ever*-presupposition in (19b), and its alternatives have presuppositions like (19c)

  (18) $\llbracket$is convinced$\rrbracket^c = \lambda w. \lambda p_{st}. \lambda x : \text{DOX}(x,w) \subseteq \{w' : p(w') \text{ is defined}\}. \text{DOX}(x,w) \subseteq \{w' : p(w') = 1\}$
        $\text{DOX}(x,w)$ is the set of worlds compatible with x's beliefs in w

  (19) a. LF: Sue is convinced-w_c [$\lambda 7$ [that [whatever book Mary bought]-w_7 [is on the shelf]-w_7]]
        b. For every Sue-belief-world w, $\llbracket$ever$\rrbracket^c(w)(\iota x[x \text{ is a book in } w \text{ and Mary bought } x \text{ in } w])$
        c. For every Sue-belief-world w, $\llbracket\phi\rrbracket^c(w)(\iota x[x \text{ is a book in } w \text{ and Mary bought } x \text{ in } w])$, $\phi \in \text{ALT}_c(\text{ever})$
        d. (Assertion: For every Sue-belief-world w, the book Mary bought in w is on the shelf in w)

- The universally projected *ever*-presupposition is the strongest known presupposition when it is known that Sue is uncertain of what book Mary bought (or when it is not known, for at least one of Sue's belief worlds, what book Mary bought)

- The sentence is not MP-compliant when Sue is certain of the book's identity, and it is common knowledge what she believes the book to be (i.e. when Sue knows that the book Mary bought is *War and Peace*)

3.3 Agentive predicates (e.g. *grab*)

- *Ever*-FRCs don't require ignorance in the scope of agentive predicates, (e.g. *grab*), (20); but when ignorance is not satisfied, they require agent-indifference, (21a-b)

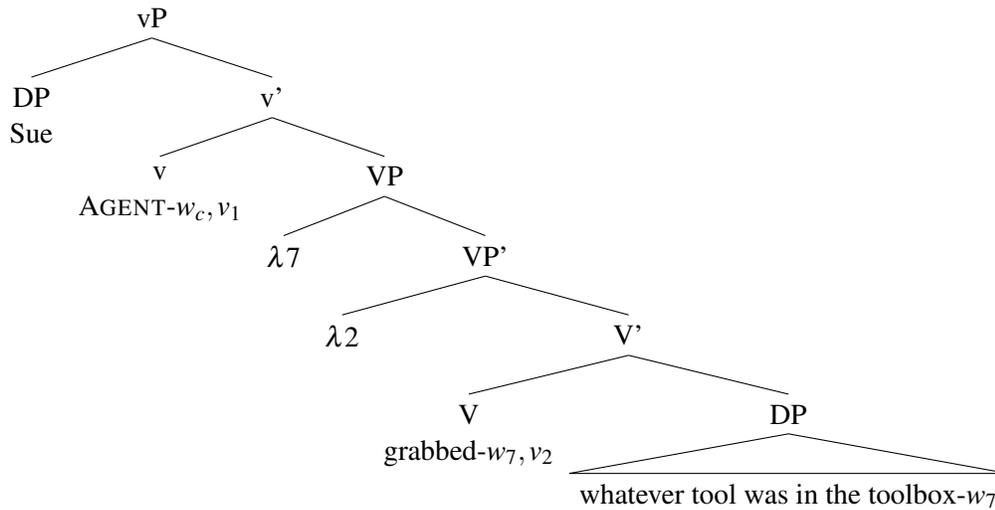 (20) I grabbed whatever tool was handy   (von Fintel 2000)

  (21) a. *Context: The hammer was in the toolbox, and the screwdriver was on the shelf. Sue was assembling the bed in a rush and the toolbox was closer, so. . .*
            Sue grabbed whatever tool was in the toolbox
        b. *Context: The hammer was in the toolbox, and the screwdriver was on the shelf. Sue was assembling the bed carefully and the next step called for a hammer, so. . .*
            Sue grabbed {#whatever tool, the tool that} was in the toolbox

- Following work on the lexical semantics of agentive/transfer-of-possession verbs (Koenig & Davis 2001, Martin & Schäfer 2012, Kratzer 2015, a.o.), I assume that certain verbs introduce a universal agent-oriented modal, AGENT, into the structure, and it projects universal presuppositions

  (22) $\llbracket$AGENT$\rrbracket^c = \lambda w . \lambda e_v . \lambda P_{\langle s,vt \rangle} . \lambda x : \text{GOALS}(x,e,w) \subseteq \{w' : P(w') \text{ is defined}\}. x \text{ is the agent of } e \text{ in } w \wedge \text{GOALS}(x,e,w) \subseteq \{w' : \exists e'_v[P(w',e') = 1 \wedge \text{CAUSE}(w',e,e')]\}$
        $\text{GOALS}(x,e,w)$ is the set of worlds where the goals of x in w during e are realized

- Indifference arises when AGENT binds into the *ever*-FRC, as in (23); we derive the presuppositions in (24)

(23)

$$
\begin{array}{c}
\text{vP} \\
\diagup \quad \diagdown \\
\text{DP} \qquad\qquad \text{v'} \\
\text{Sue} \\
\end{array}
$$

Tree (23):
- vP
  - DP: Sue
  - v'
    - v: AGENT-w_c, v_1
    - VP
      - $\lambda 7$
      - VP'
        - $\lambda 2$
        - V'
          - V: grabbed-w_7, v_2
          - DP: whatever tool was in the toolbox-w_7

(24)   a.   Universally projected *ever*-presupposition

For every Sue-goal-world w, $[\![\text{ever}]\!]^c(w)(\iota y[y$ is a tool in w and y is in the toolbox in $w])$

        b.   Universally projected alternative presupposition

For every Sue-goal-world w, $[\![\phi]\!]^c(w)(\iota y[y$ is a tool in w and y is in the toolbox in $w])$, $\phi \in \text{ALT}_c(\text{ever})$

        c.   (Assertion: Sue was the agent of an event in w_c and for every Sue-goal-world w, her agentive act in w_c causes a grabbing of the tool in w)

- The use of the EFRC-sentence is MP-compliant when it is known that the tool varies in its properties across Sue's goal worlds (i.e. Sue did not need the tool to be of a particular kind)

- In contrast, it is not MP-compliant when it is known that Sue needed the tool to have a particular property, and we know what property that is

4   Previous approaches

4.1   Intrinsically modal accounts

- Dayal 1997 provides the first formal semantic account of the implications of *ever*-FRCs; the empirical generalization to be captured is that *ever*-FRCs imply variation across a modal base

- (25) is the rendition of Dayal's analysis found in von Fintel 2000: 30, 'analysis-N'

(25)   For any world w, any modal base F_{st}, and any property $P_{\langle s,et\rangle}$:

$[\![\text{whatever}]\!]^c(w)(F)(P)$ is defined only if $\exists w', w'' \in F \, [\iota x[P(w')(x)] \neq \iota x[P(w'')(x)]]$

When defined, $[\![\text{whatever}]\!]^c(w)(F)(P) = \iota x[P(w)(x)]$ Analysis-N

- The modal base F is contextually determined; differences in the modal bases selected underlie different readings (the account in Hirsch 2015 is similar in the sort of variation it derives, except that F is supplied by the structure)

- The problems faced by accounts that directly encode modal variation is in explaining the readings of sentences like (26), which imply variation but not across a modal base (a point made in Lauer 2009);[6] (27a-b) establish that

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[6]Abenina-Adar 2019: §3.3.2 considers how different values of F might rescue a modal approach.

enjoy on its own does not license any reading other than ignorance

(26)   Everyone enjoyed whatever book they read ⤳ People read different books

(27)   a.   #Sue enjoyed whatever book was on the shelf – *War and Peace*, as it happened
        b.   Sue grabbed whatever book was on the shelf – *War and Peace*, as it happened

4.2   Issues with indifference

- To account for agent-indifference readings, von Fintel 2000 offers a revision of the modal-presupposition account in Dayal 1997, 'analysis-I'

- *ever*-FRCs presuppose that in the closest accessible worlds where the referent differs from what it actually is, the truth of the sentence remains the same[7]

(28)   For any world w, any modal base F_{st}, and any properties $P_{\langle s,et \rangle}, Q_{\langle s,et \rangle}$:
        $[\![\text{whatever}]\!]^c(w)(F)(P)(Q)$ is defined only if
        $\forall w' \in \text{MIN}_w(F \cap \{w'' : \iota x[P(w'')(x)] \neq \iota x[P(w)(x)]\})$
        $[Q(w')(\iota x[P(w')(x)]) = Q(w)(\iota x[P(w)(x)])]$.
        When defined, $[\![\text{whatever}]\!]^{g,c}(w)(F)(P)(Q) = 1$ iff $Q(w)(\iota x[P(w)(x)])$ Analysis-I

- *Sue grabbed whatever tool was in the toolbox* presupposes that if the tool in the toolbox had been something else, Sue would've grabbed that

- The account does not capture the constraints on the availability of an agent-indifference reading; (29) makes a counterfactual modal base salient and supplies information that satisfies the predicted presupposition (in the closest accessible worlds where the book she bought is *AK*, *AK* is on the shelf over there) but the *ever*-FRC is odd

(29)   *Context: Yesterday, Mary bought War and Peace. If Anna Karenina had been available, she would've bought that instead. She put the book on the shelf where she puts everything.*
        #Whatever book Mary bought yesterday is on the shelf over there

- While it remains to be spelled out which predicates introduce AGENT, the present accounts relates the availability of an agent-indifference reading to the main predicate – seems to be a desirable result (though see Tredinnick 2005 on 'external-indifference' and Abenina-Adar 2019: §3.3.3 for commentary)

- Two open issues for the present account

- Agent-indifference involves evaluating the *ever*-FRC in the agent's goal worlds; how come *Sue grabbed whatever tool was in the toolbox* implies that the tool and its being grabbed are actual?

- The indifference implication has the status of a presuppositional implicature; how come the implication at times appears to be at-issue (e.g. negatable), unlike ignorance? (30a-b) (von Fintel 2000, Rawlins 2015)

(30)   a.   I don't think Mary grabbed whatever tool was in the toolbox (she grabbed the hammer on purpose)
        b.   I don't think whatever book Mary bought is on the shelf (#*War and Peace* is the book she bought)

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[7]Under this version of the meaning of the EFRC, ignorance arises when F is epistemic; non-rigidity across F, which is what Analysis-N required, is derived by assuming that MIN is a partial function, applying only to non-empty sets, thus $F \cap \{w'' : \iota x[P(w'')(x)] \neq \iota x[P(w)(x)]\}$ has to be non-empty.

4.3 Future directions

- I have argued for a semantic-pragmatic account of *ever*-FRCs extra implications; the resulting analysis is much closer to the predominant analyses of epistemic indefinites (Kratzer & Shimoyama 2002, Alonso-Ovalle & Menéndez-Benito 2010, a.o.)

- Spanish: (31b) can follow (31a) with an ordinary *un*-indefinite but not with an epistemic *algún*-indefinite

  (31) a. María se casó   con {un, algún} estudiante del   departamento del lingüística
            Mary SE married with UN ALGUN student   of the department   of linguistics
            'María married a linguistics student'
        b. en concreto con Pedro
            'Namely, Pedro'   (Alonso-Ovalle & Menéndez-Benito 2010: 2)

- Alonso-Ovalle & Menéndez-Benito propose that *algún* is an existential whose domain of quantification is presupposed to be a non-singleton, which evokes alternatives whose domains of quantification are singletons that together exhaust *algún*'s domain

- (32a-b) is a notational variant of their proposal that highlights the similarity to the current account

  (32) a. $[\![algún\ Dom\ \psi]\!]^c(w) = 1$ iff $[\![Dom]\!](w) \cap [\![\psi]\!](w) \neq \varnothing$
        b. For any context c, $\{[\![Dom']\!] : Dom' \in \mathrm{ALT}_c(Dom)\}$ is a singleton-based partition of $[\![Dom]\!]$

- With *ever*-FRCs, the alternative-triggering domain expression is used in a not-at-issue property ascription, and with epistemic indefinites, it is an existential's domain of quantification

- There is also a parallel to analyses of weak NPIs that are based on the assumption that they have roughly the same meaning and alternatives as (32a-b) but are subject to contradiction-inducing strengthening (e.g. Krifka 1995, Chierchia 2013)

- In some languages, we find morphosyntactic similarity in the composition of these expressions – Tagalog WH-free relatives are definites with ignorance when they are in a position that independently signals definiteness and polarity-sensitive indefinites when they are in a position that signals indefiniteness

  (33) a. binili ni Maria   ang anoma-ng   libro-ng nasa-lamesa
            bought GEN Maria SUBJ WH-man-LK book-LK on the table
            'Maria bought whatever book was on the table'
        b. *(hindi) bumili si Maria   ng anoma-ng   libro-ng nasa-lamesa
            not   bought SUBJ Maria GEN WH-man-LK book-LK on the table
            'Maria didn't buy any book that was on the table'   (Collins & Abenina-Adar 2019)

- Are there shared, underlying grammatical ingredients that go into the composition of 'extraordinary' DPs?

5 Conclusion

- I have a proposed semantic-pragmatic account of *ever*-FRCs, based on competition among referentially-equivalent, presuppositionally-ordered alternatives

- Regarding ignorance obviation effects, the present account makes better predictions than previous accounts that directly encode modality

- The resulting account bears a striking resemblance to predominant accounts of epistemic indefinites
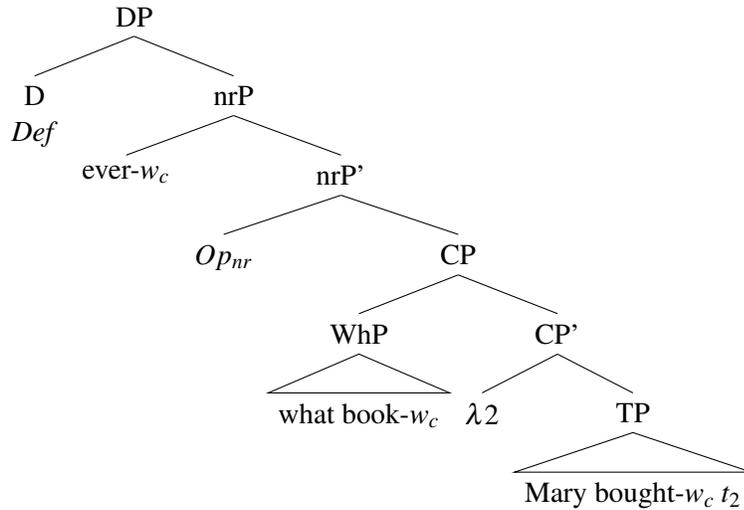
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A   Structure and derivation

- Following Groos & Van Riemsdijk 1981, Caponigro 2003, and others on definite FRCs, an *ever*-FRC has the structure of a definite determiner applying to a property-denoting CP, as in (34)

(34)

```
                    DP
                 /      \
               D          nrP
             Def        /     \
                    ever-w_c    nrP'
                             /      \
                          Op_nr       CP
                                   /      \
                                 WhP        CP'
                                / \        /    \
                        what book-w_c  λ2      TP
                                               /  \
                                          Mary bought-w_c t_2
```

- *Ever* denotes a contextually-salient property (e.g. property-variable, receiving a value from the assignment g_c), which occupies a position of a non-restrictive modifier (cf. *I spent what little money I had left*)

- *Op_{nr}* applies the meaning of *ever* to the maximal entity in the denotation of the CP; it is adapted from Morzycki's (2008) analysis of the non-restrictive readings of (35)-(36)

(35)   Every unsuitable word was deleted

        a.   Restrictive reading: Every word that was unsuitable was deleted

        b.   Nonrestrictive reading: Every word was deleted; they were unsuitable

                                                          (Bolinger 1967, Larson & Marušič 2004, a.o.)

(36)   a.   los amigos sofisticados de María

        b.   los sofisticados amigos de María

             Restrictive reading: Those of Maria's friends who are sophisticated   ✓(36a), *(36b)

             Nonrestrictive reading: Maria's friends, all of whom are sophisticated   ✓(36a), ✓(36b)

                                  (Morzycki 2008: 103, citing Mackenzie 1999; see also Cinque 2010)

(37)   Full derivation of (34)

        a. $[\![\text{CP'}]\!]^c = \lambda x_e.$ Mary bought x in w_c

        b. $[\![\text{WhP}]\!]^c = \lambda P_{et}. \lambda x_e.$ x is inanimate in $w_c \wedge x$ is a book in $w_c \wedge P(x) = 1$

        c. $[\![\text{CP}]\!]^c = \lambda x_e.$ x is inanimate in $w_c \wedge x$ is a book in $w_c \wedge$ Mary bought x in w_c

        d. $[\![Op_{nr}]\!]^c = \lambda Q_{et}. \lambda P_{et} : P(\iota x[Q(x)]).Q$

        e. $[\![\text{nrP'}]\!]^c = \lambda P_{et} : P(\iota x[x$ is inanimate in $w_c \wedge x$ is a book in $w_c \wedge$ Mary bought x in $w_c]). \lambda x_e.$ x is inanimate in $w_c \wedge x$ is a book in $w_c \wedge$ Mary bought x in w_c

        f. $[\![\text{nrP}]\!]^c$ is defined only if $[\![\text{ever-}w_c]\!]^c(\iota x[x$ is inanimate in $w_c \wedge x$ is a book in $w_c \wedge$ Mary bought x in $w_c]$). When defined, $[\![\text{nrP}]\!]^c = \lambda x_e.$ x is inanimate in $w_c \wedge x$ is a book in $w_c \wedge$ Mary bought x in w_c

        g. $[\![Def]\!]^c = \lambda P_{et}.\iota x[P(x)]$

        h. $[\![(34)]\!]^c$ is defined only if $[\![\text{ever-}w_c]\!]^c(\iota x[x$ is inanimate in $w_c \wedge x$ is a book in $w_c \wedge$ Mary bought x in $w_c]$). When defined, $[\![(34)]\!]^c = \iota x[x$ is inanimate in $w_c \wedge x$ is a book in $w_c \wedge$ Mary bought x in $w_c]$

B   Plurals

- Plural *ever*-FRCs do not require ignorance (Dayal 1997: 110, Condoravdi 2015: 225), but when ignorance isn't satisfied, they require the subparts of the plural referent to have distinct, salient properties

(38)   a.   *Context: Mary bought War and Peace and Anna Karenina*
   Whatever books Mary bought are over there on the shelf ($\approx$ the various books Mary bought...)
      b.   *Context: Mary bought two copies of War and Peace*
   {??Whatever, the} books Mary bought are over there on the shelf

- I switch to a Linkian theory of definiteness and modify the meaning of *ever* and its alternatives (in the following, 'part' means 'proper or improper part')

(39)   For any $P \in D_{et}, \sigma x[P(x)]$ is defined only if there is a maximal P-entity (i.e. a P-entity of which every P-entity is a part). When defined, $\sigma x[P(x)]$ is the maximal P-entity.

(40)   a.   For any context c, $\{[\![\phi]\!]^c : \phi \in \text{ALT}_c(\text{ever})\}$ is an atomic-partition of $[\![\text{ever}]\!]^c$
      b.   A set of properties $C_{\langle\langle s,et\rangle,t\rangle}$ is an atomic-partition of $P_{\langle s,et\rangle}$ iff:

(i)	$\exists Q, Q' \in C[Q \neq Q']$	Non-trivial partitioning
(ii)	$\neg\exists Q \in C[\forall w[Q(w) = \varnothing]]$	Satisfiable properties
(iii)	$\forall w[\forall Q, Q' \in C[Q \neq Q' \rightarrow Q(w) \cap Q'(w) = \varnothing]]$	Non-overlapping properties
(iv)	$\forall w[\bigcup\{Atom(Q,w) : Q \in C\} = Atom(P,w)]$	Jointly exhaust the atoms in P
(v)	$\forall w[\forall x \in \bigcup\{Q(w) : Q \in C\}[\exists y \in P(w)[x \text{ is part of } y]]]$	No random sums

For every $P \in D_{s,et}, w \in W : Atom(P,w) = \{x \in P(w) : \forall y \in P(w)[y \text{ is part of } x \rightarrow y = x]\}$

- At any world, the atoms in the alternatives jointly exhaust the atoms in *ever*, but *ever* can have sums that are not in any of the alternatives (e.g. *W&P*-atoms summed with *AK*-atoms)

- Assume (41a-b) as the values of *ever* and alternatives in the evaluation of (39a-b) (*W&P* is the property of *War and Peace*-atoms, *AK* is the property of *Anna Karenina*-atoms)

(41)   a.   Sum-closure of $W\&P \cup AK$
      b.   {Sum-closure of $W\&P$, Sum-closure of AK}

- The *ever*-FRC denotes the maximal sum of books Mary bought, presupposing that it is a sum of *W&P*-or-*AK*-atoms

- The *ever*-FRC is MP-compliant because it is known that the referent is not made up entirely of *W&P*-atoms, nor is it made up of *AK*-atoms

- On these values, the *ever*-FRC is not MP-compliant in the second context, where the maximal sum of books Mary bought is made up entirely of *W&P*-atoms

- But if we assume that different properties partition the value of *ever* (e.g. the property of being the first book Mary bought, vs. the second, a possibility suggested by Condoravdi 2015), then both are MP-compliant