The Onliest NP: Non-definite Definites

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> Onliest: Intensive form of "only". Used to indicate that someone or something that is truly the "only", or "only" in a special way.
>
> *Jesus is the onliest who can save you.*
>
> by erielhonan December 13, 2008
> www.urbandictionary.com

1. Introduction

DPs such as *the tallest boy*, whose head noun is preceded by a superlative adjective – henceforth, *the A-est NP*s – and DPs such as *the only boy*, whose head noun is preceded by *only* – henceforth, *the only NP*s – are definite in the morpho-syntactic sense because their determiner is *the* (and not some indefinite determiner such as *a* or *some*). But as is well-known (at least since Higgins 1973), *the A-est NP*s and *the only NP*s are sometimes semantically non-definite. The following contrasts illustrate this: unlike *the tall boy*, *the tallest boy* need not imply existence of a unique boy who is taller than all the other boys; and unlike *the boy*, *the only boy* need not imply existence of a unique boy.

(1) a. John is not the tallest boy I talked to. I also talked to Bill, who is just as tall.
b. John is not the tall boy I talked to. #I also talked to Bill, who is just as tall.
(2) a. John is not the only boy I talked to. I talked to three boys.
b. John is not the boy I talked to. #I talked to three boys.

This is intriguing especially in view of the fact that (1a) does not have the same meaning as (3), and (2a) does not have the same meaning as (4), despite the naïve intuition that *tallest boy* and *who is the tallest boy* are (almost) equivalent, and *only boy* and *who is the only boy* are (almost) equivalent.

(3) John is not the child who is the tallest boy I talked to. #I also talked to Bill, who is just as tall.
(4) John is not the child who is the only boy I talked to. #I talked to three boys.

On such naïve assumptions, we would expect (1a) and (3) to be very close in meaning, and (2a) and (4) to be very close in meaning, but this is clearly not the case.

This paper accounts for the facts in (1)-(4) by adopting the movement analysis of superlatives proposed in Heim (1999), and by proposing that *only* and *-est* are phonetic realizations of the same abstract morpheme. The idea that *only* = *-est* has its roots in Bhatt (2002, 2006); this paper is an attempt to solidify Bhatt's proposal and provide new evidence for it. Our rendition of Bhatt's idea rests

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on the idea that nouns take degree arguments just like gradable adjectives do. The degree argument of a noun or an adjective may be bound by *-est* (phonetically realized as *only* in the former case). We show that the idea that *only* = *-est* receives further support from the fact that the non-definite flavor of *the only/A-est NP*s is not confined to predicate positions (e.g., the post-copular position); it is also found in non-predicate positions (of copular as well as non-copular sentences).

(5) a. The campus was almost empty. The only student we saw was Bill.
b. The campus was almost empty. #The student we saw was Bill.

(6) a. I don't know if they have any cheap clothes in this store, but the cheapest dress I bought here got good reviews.
b. #I don't know if they have any cheap clothes in this store, but the cheap dress I bought here got good reviews.

The paper has nothing new to say about why *the* in (1a) and (2a) cannot be replaced with *a/some* (for some relevant discussion, see Heim 1991, Herdan & Sharvit 2006, Coppock & Beaver 2012 and others). Also, the paper has very little to say about the semantic non-definiteness of role-DPs such as *the president*, which are morpho-syntactically definite (as in *John is not the president*; see Fodor 1970, Higgins 1973, Partee 1986, Coppock & Beaver 2012 and others).

2. Background: *-est*-Movement and *the*-Deletion

A well-known theory that provides a partially unified analysis of *the only NP*s and *the A-est NP*s is Bhatt's (2002, 2006) rendition of Heim (1999, 2000) (itself inspired by Szabolcsi 1986). We adopt a slightly modified version of this theory, which we refer to as M-D ("Movement and Deletion"). In this section and in Section 3 we illustrate how M-D accounts for some of the properties that *the A-est NP*s and *the only NPs* have in common; in subsequent sections we propose an extension of M-D that provides a fully unified analysis of them.

Starting with *the A-est NP*s, M-D consists of the following premises. *Tall*, *boy*, *the* and *be* have the meanings in (7); *-est* has the meaning in (8). (D_t = {True, False}, D_e is the domain of individuals, D_d is the domain of degrees, and g is a variable assignment.)

(7) a. For any $d \in D_d$ and $x \in D_e$, $[\![tall]\!]^g(d)(x)$ = True iff TALLNESS(x) ≥ d.
b. For any $x \in D_e$, $[\![boy]\!]^g(x)$ = True iff x is a boy.
c. For any $P \in D_{<e,t>}$, $[\![the]\!]^g(P)$ is the unique relevant $y \in D_e$ such that P(y) = True, if there is one (otherwise, $[\![the]\!]^g(P)$ is undefined).
d. For any $P \in D_{<e,t>}$, $[\![be]\!]^g(P) = P$.

(8) For any $REL \subseteq D_e$, $R \in D_{<d,<e,t>>}$ and $x \in D_e$, $[\![-est]\!]^g(REL)(R)(x)$ is defined only if: (i) $x \in REL$; (ii) for all $y \in REL$, there is a $d \in D_d$ such that R(d)(y) is defined; and (iii) there is a $d \in D_d$ such that R(d)(x) = True.
When defined, $[\![-est]\!]^g(REL)(R)(x)$ = True iff there is a $d \in D_d$ such that $\{y \in REL | R(d)(y) = True\} = \{x\}$.[1]

REL is a contextually-supplied comparison set. Accordingly, $[\![-est]\!]^g(REL)([\![tall]\!]^g)(John)$ = True if and only if John is tallest in the comparison set REL, but not necessarily tallest in D_e. Notice that only x is required by (8) to have some degree of R; we assume that a pragmatic principle – Avoid Vacuous Comparisons – guarantees that other individuals in REL have some degree of R (though see Heim 1999, Gajewski 2010 and Tomaszewicz 2015 for other approaches to the formation of REL).

Crucially, *-est* moves either DP-internally ((9(i))) or DP-externally ((9(ii))), and *the* may "delete" (i.e., may be replaced by an indefinite determiner, which has no meaning and is represented as ~~*the*~~).

[1] Heim (1999) considers two versions of *-est*, a 3-place-predicate version and a 2-place-predicate version. We use the former here. For discussion of some considerations that may favor one version over the other, see Howard (2012), Pancheva & Tomaszewicz (2012) and Tomaszewicz (2015), among others.

Movement results in trace-binding by a movement-index, as in Heim & Kratzer (1998). The silent pronoun C_5, whose value is determined by the contextually-supplied variable assignment, denotes REL. For reasons not very well understood, *the* may delete only when the DP contains *-est*; see (10).

(9) (i) DP-internal movement:
$[_{DP}$ *the* $[_{\alpha} \ldots [$*-est* $C_5] \ldots]] \rightarrow [_{DP}$ *the* $[$*-est* $C_5]$ $[1$ $[_{\alpha} \ldots d_1 \ldots.]]]$
(ii) DP-external movement:
$[_{\beta} \ldots [_{DP}$ *the* $[_{\alpha} \ldots [$*-est* $C_5] \ldots]] \ldots] \rightarrow [_{\beta} \ldots [$*-est* $C_5]$ $[1$ $[\ldots [_{DP}$ ~~*the*~~ $[_{\alpha} \ldots d_1 \ldots]]]] \ldots]$

(10) An occurrence O of ~~*the*~~ is licensed only if there is an E such that: (i) E is an *-est*-chain, (ii) O c-commands some element of E, and (iii) every DP node that dominates the tail of E dominates O.

For reasons we do not discuss here, *-est*-movement is mandatory, and *the*-deletion is mandatory whenever *-est* moves DP-externally (this is why $[_{\beta} \ldots [$*-est* $C_5]$ $[1$ $[\ldots [_{DP}$ *the* $[_{\alpha} \ldots d_1 \ldots]]]] \ldots]$ is missing from (9(ii))). Notice that (10) does not forbid $[_{DP}$ ~~*the*~~ $[$*-est* $C_5]$ $[1$ $[_{\alpha} \ldots d_1 \ldots]]]$, which is missing from (9(i)), but we do not exploit this option until Section 5.

Thus, *John is not the tallest boy* has the identity LF in (11a) and the predicative LF in (11b). *IDENT* in (11a) denotes the type-lifting operator [λxλy. y = x] from Partee (1986). (Every binary-branching node is interpreted by Functional Application, Intensional Functional Application, Predicate Modification or Predicate Abstraction; see, for example, Heim & Kratzer 1998.)

(11) John is not the tallest boy. (Bill is just as tall / #There are no boys.) (cf. (1a))
a. Identity LF
not John be [*IDENT the* [*-est* C_5] [1 [[*tall* d_1] *boy*]]] (9(i))
John ≠ (the x such that there is a d such that {y ∈ REL| y is an at least d-tall boy} = {x})
(Presupposition: there is a <x, d> such that {y ∈ REL| y is an at least d-tall boy} = {x})
More simply: Some boy is taller than any other boy, but that boy is not John
b. Predicative LF
not John [*-est* C_5] [1 [*be* $[_{DP}$ ~~*the*~~ [[*tall* d_1] *boy*]]]] (9(ii))
For all degrees d, {y ∈ REL| y is an at least d-tall boy} ≠ {John}
(Presupposition: John is a boy in REL with some degree of tallness)
More simply: John is a boy, but some other boy is at least as tall as John

Note that in (11a) (unlike (11b)), John is not required to be in REL, but if it is known that John is not in REL, (11a) is uninformative.

The contrasts in (1) and (3) are accounted for because, by (10), only (1a) has an LF that is purely predicative (where all occurrences of *the* are deleted); (1b) and (3) do not. (The value of the free degree variable in (12) is determined, by convention, as the contextually-relevant "tallness" standard.[2])

(12) John is not the tall boy. (#Bill is just as tall / #There are no boys.) (cf. (1b))
a. *not John be* [*IDENT the* [[*tall* d_1] *boy*]]
b. **not John be* ~~*the*~~ [[*tall* d_1] *boy*]

(13) John is not the child who is the tallest boy. (#Bill is just as tall / #There are no boys.) (cf. (3))
a. *not John be* [*IDENT the child* [*who* 2 [t_2 *be* [*IDENT the* [*-est* C_5] [1 [[*tall* d_1] *boy*]]]]]]
b. *not John be* [*IDENT the child* [*who* 2 [t_2 [*-est* C_5] [1 [*be* $[_{DP}$ ~~*the*~~ [*tall* d_1] *boy*]]]]]]
c. **not John be* ~~*the*~~ *child* [*who* 2 [t_2 *be* [*IDENT* $[_{DP}$ *the* [*-est* C_5] [1 [[*tall* d_1] *boy*]]]]]]
d. **not John be* ~~*the*~~ *child* [*who* 2 [t_2 [*-est* C_5] [1 [*be* $[_{DP}$ ~~*the*~~ [*tall* d_1] *boy*]]]]]
e. **not John* [*-est* C_5] [1 [*be* ~~*the*~~ *child* [*who* 2 [t_2 *be* $[_{DP}$ ~~*the*~~ [*tall* d_1] *boy*]]]]]

M-D also accounts straightforwardly for the distinction between absolute and comparative readings of *the A-est NP*s in object position (observed in Ross 1964 and Szabolcsi 1986). On the comparative reading of *John didn't climb the highest mountain* (= 'John is not the best mountain-

[2] This somewhat simplistic treatment of "bare" gradable adjectives will suffice for current purposes.

climber'), existence of a highest mountain is not presupposed (see also Coppock & Beaver 2014), though existence of some mountain climbed by John is, or seems to be, presupposed.

(14) John didn't climb the highest mountain.
   a. Absolute: *not John climbed the* [*-est* C_5] [1 [[*high* d_1] *mountain*]] (cf. (11a))
   Some mountain in REL is higher than all the other mountains in REL, but John didn't climb that mountain.
   b. Comparative: *not John* [*-est* C_5] [1 [[*INC climb*] [$_{DP}$ ~~*the*~~ [[*high* d_1] *mountain*]]]] (cf. (11b))
   John climbed some mountain, but there is no degree d such that {y ∈ REL| y climbed some d-high mountain} = {John}.[3]

Similarly, M-D accounts straightforwardly for non-definite readings of *the A-est NP*s in complement position of relational *have* (see Szabolcsi 1986), readings that *a (A) NP*s have but *the (A) NP*s lack.

(15) a. (i) John doesn't have the tallest sister; many people have a sister taller than any of John's sisters.
   not John [*-est* C_5] [1 [*have* [$_{DP}$ ~~*the*~~ [*tall* d_1] *sister*]]] (cf. (11b)/(14b))
   'John has a sister but someone else has a sister at least as tall as some sister of John's'
   (ii) John doesn't have a tall sister; but many people do.
   b. *John doesn't have the tall sister; but many people do. (cf. (12))

Like other cases of movement, *-est*-movement obeys island constraints. Consequently, (16b) is not generated; more generally, there are no comparative readings of *the A-est NP*s in adjunct position.[4]

(16) a. Anna didn't cry after giving the best talk.
   b. **not Anna* [*-est* C_5] [2 […. [$_{AdvP}$…. [*INC giving*] ~~*the*~~ [*good* d_2] *talk*]]]
   'Anna cried after giving a talk, but someone else cried after giving at least as good a talk'

The strongest argument for *-est*-movement seems to come from Split Scope cases; i.e., cases where *-est* itself – and not the DP that contains it – scopes above an intensional operator (while the rest of the DP scopes below it). This is illustrated by *the A-est NP*s in intensional environments as in (17) (see Szabolcsi 1986 and others).

(17) John needs to climb the highest mountain.
   Trainer, to John: "If you want to participate in the competition, you have to climb a 6000 ft mountain."
   Trainer, to Bill: "If you want to participate in the competition, you have to climb a 5000 ft mountain."
   Trainer, to Jeff: "If you want to participate in the competition, you have to climb a 4000 ft mountain."

In the scenario described in (17), the relevant reading of *John needs to climb the highest mountain* is neither the 'de re' reading where *the highest mountain* scopes above *need* (as there is no particular mountain that John needs to climb), nor the pure 'de dicto' reading where *the highest mountain* scopes below *need* (as John's needs can be satisfied even if the others climb higher mountains). An adequate paraphrase of the relevant reading is something along the lines of 'John's mountain-climbing needs are the most demanding'. It is straightforwardly accounted for within M-D, as (18) shows.

(18) *John -est* C_5 [1 [*need to* [*INC climb*] [$_{DP}$ ~~*the*~~ [*high* d_1] *mountain*]]] (cf. (14b))
   There is a degree d such that {y ∈ REL| the needs of y are satisfied only if y climbs some mountain that is at least d-high} = {John}

[3] *INC* denotes the "incorporation" operation $\lambda Q \in D_{<e, <e, t>>}. \lambda P \in D_{<e, t>}. \lambda x \in D_e. \{y \in D_e | Q(y)(x) \& P(y)\} \neq \emptyset$.
[4] (13e), which as we saw is banned by (10), is also banned by island constraints (like (16b)).

In addition, if M-D is enriched with principles of ellipsis resolution, the ambiguity in (19), where *spy* is preceded by *possible* (see Larson 2000, Schwarz 2005, and Romero 2011, 2013), is accounted for as in (20). The regular modifier reading comes from an absolute LF (and maybe also a comparative LF). In the modal superlative LF *-est* and *possible* move DP-externally, *possible*-movement (with ellipsis resolution) provides the comparison set REL, and '∃' (defined in (21)) is inserted above *-est*.[5]

(19) John met the smartest possible spy.
  a. Regular modifier reading: John met the smartest among the possible spies.
  b. Modal superlative reading: John met as smart a spy as was possible for him to meet.

(20) a. (i) *John meet the* [*-est* C_5] [1 [[*smart* d_1] *possible spy*]] (cf. (14a))
  (ii) *John* [*-est* C_5] [1 [[*INC meet*] ~~*the*~~ [*smart* d_1] *possible spy*]] (cf. (14b))
  b. ∃ [*-est* [3 [*POSSIBLE John meet* t_3]]] [2 [[$_{DP}$ ~~*the*~~ [*smart* d_2] *spy*][3 [*John meet* t_3]]]] (cf. (14b))
  There is a <x, d> such that {y ∈ REL| y is an at least d-smart spy and John met y} = {x}
  (where REL ⊆ {y| it is possible for John to meet y})

(21) For any $X \in D_{<e,t>}$, $[\![\exists]\!](X)$ is defined only if {y| X(y) is defined} ≠ ø.
  When defined, $[\![\exists]\!](X)$ = True iff there is a z ∈ {y| X(y) is defined} such that X(z) = True.

The idea that adjectival *only* may undergo movement accounts for many similarities between *the only NP*s and *the A-est NP*s, as we now show.

3. *Only*-movement and *the*-Deletion

Adopting the idea (Bhatt 2002, 2006) that adjectival *only* may undergo movement accompanied by *the*-deletion, together with the assumption (Bhatt 2002, Sharvit 2011, Coppock & Beaver 2012 and others) that *only* and *-est* have similar meanings as implied by (22) – and the assumption that *the* deletes in similar circumstances – (2a) is also accounted for within M-D.

(22) For any REL ⊆ D_e, P ∈ $D_{<e,t>}$ and x ∈ D_e, $[\![only]\!]^g$(REL)(P)(x) is defined only if: (i) x ∈ REL; (ii) for all y ∈ REL, P(y) is defined; and (iii) P(x) = True.
When defined, $[\![only]\!]^g$(REL)(P)(x) = True iff {y ∈ REL| P(y) = True} = {x}.

(23) John is not the only boy. (There are three boys / #There are no boys.) (cf. (2a)/(11))
  a. Identity LF
  not John be [*IDENT the* [*only* C_5] *boy*]
  John ≠ (the x such that {y ∈ REL| y is a boy} = {x})
  (Presupposition: there is a unique boy in REL)
  b. Predicative LF
  not John [*only* C_5] [*be* ~~*the*~~ *boy*]
  {y ∈ REL| y is a boy} ≠ {John}
  (Presupposition: John is a boy in REL)

It is also correctly predicted that *the only NP*s in object position support "comparative" readings (see Sharvit 2011 and Coppock & Beaver 2012 among others), and that *the only NP*s have non-definite readings in the complement position of relational *have*.[6]

(24) a. Anna didn't give the only good talk at SALT; many people gave good talks. (cf. (14b))
  b. *not Anna* [*only* C_5] [[*INC give*] ~~*the*~~ [*good* d_3] *talk at SALT*]
  'Not only Anna gave a good talk at SALT'

[5] (20b) is massively simplified. For a more detailed and rigorous analysis, see Romero (2011, 2013).
[6] Note that we also make the seemingly unwelcome prediction that when Anna gives two good talks, *Anna gave the only good talk* may be felicitous and true. We come back to this issue in Section 5.

(25) a. (i) John doesn't have the only sister; many people here have sisters. (cf. (15a))
not John [*only* C_5] [*have* ~~*the*~~ *sister*]
'Not only John has a female sibling'
(ii) John doesn't have a sister, but many people here do.
b. *John doesn't have the sister, but many people here do. (cf. (15b))

Since *only*-movement obeys island constraints, there are no "comparative" readings of *the only NP*s in adjuncts.

(26) a. Anna didn't cry after giving the only good talk. (cf. (16))
b. **not Anna* [*only* C_5] […. [$_{AdvP}$ ... [*INC giving*] ~~*the*~~ [*good* d_3] *talk*]]
'Not only Anna cried after giving a good talk'

Since the strongest argument for M-D comes from Split Scope, we expect *the only NP*s to demonstrate it too (if M-D is indeed the right analysis of *the only NP*s). However, *John needs to climb the only mountain* does not have the expected reading, paraphrased "Only John needs to climb some mountain or other". This suggests that *only* cannot move in all environments in which *-est* moves.[7] Interestingly, though, Split Scope of *the only NP*s is possible with some intensional DP-taking verbs, such as *require* and *recommend*.[8] Notice, first, that such readings are available with *the A-est NP*s.

(27) Prof. Smith recommended the longest book.
Prof. Smith: Why don't you read a 600 pg long book.
Prof. Jones: Why don't you read a 500 pg long book
Prof. Charles: Why don't you read a 300 pg long book

The relevant reading of (27) is neither the 'de re' reading (as there need not be a specific book longer than the other books, which Prof. Smith wants his students to read), nor the pure 'de dicto' reading (as Prof. Smith need not care whether his students end up reading a book that is longer than any other book, whatever the length of such a book might be). In addition, the relevant reading is not available in the absence of *-est*.

(28) a. Prof. Smith didn't recommend the longest book. Prof. Jones recommended an equally long book.
b. Prof. Smith didn't recommend the long book. Prof. Jones recommended it / #Prof. Jones recommended an equally long book.

Now consider (29)-(30), with *the only NP*s and the intensional *require* and *recommend*.

(29) Prof. Smith requires the only term paper.

Prof. Smith's requirements:	at least one term paper and one class presentation.
Prof. Jones's requirements:	at least one class presentation.
Prof. Charles's requirements:	at least one class presentation and 50 hours of fieldwork.

(30) Mary recommended the only book.
Mary: "The best way for you to learn about the topic is by reading a book."
Sally: "The best way for you to learn about the topic is by interviewing an expert."
Fred: "The best way for you to learn about the topic is by watching TV."

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[7] Another contrast that makes the same point is between (i) and (ii). (i) implies that I look fatter in all the other jeans; but (ii) does not imply that I don't look like a dork in the other jeans.
(i) These jeans make me look the skinniest.
(ii) These jeans make me look like the only dork.

[8] For discussion of the intensionality of certain DP-taking verbs, see Zimmermann (1993), Moltmann (2008), Bervoets (2012) and others.

Under negation, the Split Scope reading seems even easier to process.

(31) a. Mary didn't imagine the only ghost. John imagined one too.
=> Not only Mary imagined a ghost.
b. Prof. Smith didn't suggest the only make-up exam. Prof. Jones suggested one too.
=> Not only Prof. Smith suggested a make-up exam.

And, not unexpectedly, this reading is not available without the presence of *only/-est*.

(32) a. John didn't imagine the ghost. Mary imagined it / #Mary imagined one too.
b. Sally didn't recommend the book. Fred recommended it / #Fred recommended one too.

These facts are predicted within M-D, both for *the A-est NP*s and *the only NP*s.[9]

(33) a. Prof. Smith recommended the longest book (cf. (18))
Prof. Smith -est C_5 [1 [*recommend* ~~*the*~~ [*long* d_1] *book*]]
b. Prof. Smith recommended the only book.
Prof. Smith only C_5 [*recommend* ~~*the*~~ *book*]

Finally, as predicted by M-D, modal superlative readings are also possible with *only*.

(34) John met the only possible spy.
a. Regular modifier reading: John met the unique possible spy.
b. Modal superlative reading: John met only one spy that it was possible for him to meet.

(35) a. (i) *John meet the* [*only* C_5] [*possible spy*] (cf. (20a))
(ii) *John* [*only* C_5] [[*INC meet*] ~~*the*~~ [*possible spy*]]
b. ∃ [*only* [1 [*POSSIBLE* [*John meet* t_1]]]] [~~*the*~~ *spy* [1 [*John meet* t_1]]] (cf. (20b))
There is an x such that {y ∈ REL| y is a spy and John met y} = {x}
(where REL ⊆ {y| it is possible for John to meet y})

While it is far from clear why Split Scope with adjectival *only* is more constrained than it is with the "real" superlative, the fact that *the only/A-est NP*s may, in principle, be non-definite justifies a unified analysis of them. But how "unified"? (22), as opposed to (8), does not involve quantification over degrees and so, *only*-movement does not leave a trace. If *the*-deletion is always constrained by (10), we indeed expect (36b) to be illicit (explaining the contrast in (2)), but we also expect (23b), for example, to be illicit. Conversely, if *only*-movement obeys island constraints but overrides (10), it is clear why (37e) is illicit, but it is not obvious why (37d) is illicit, leaving the contrast between (2a) and (4) unexplained (as we will see in Section 5, ~~*the*~~ need not be c-commanded by *only*).

(36) John is not the boy. (#There are three boys / no boys). (cf. (12))
a. *not John be* [*IDENT the boy*]
b. **not John be* ~~*the*~~ *boy*

(37) John is not the child who is the only boy. (#There are three boys / no boys). (cf. (13))
a. *not John be* [*IDENT the child* [*who* 2 [t_2 *be* [*IDENT* [*the* [*only* C_5] *boy*]]]]]
b. *not John be* [*IDENT the child* [*who* 2 [t_2 [*only* C_5] [*be* ~~*the*~~ *boy*]]]]
c. **not John be* ~~*the*~~ *child* [*who* 2 [t_2 *be* [*IDENT the* [*only* C_5] *boy*]]]
d. **not John be* ~~*the*~~ *child* [*who* 2 [t_2 [*only* C_5] [*be* ~~*the*~~ *boy*]]]
e. **not John* [*only* C_5] *be* ~~*the*~~ *child* [*who* 2 [t_2 *be* ~~*the*~~ *boy*]]

To solve this problem, in Section 4 we propose that adjectival *only* is the phonetic spell-out of *-est* and, as such, it always leaves behind a degree-trace when it moves (and thus *the*-deletion is always subject to (10)). In Section 5 we provide some independent empirical motivation for this fully unified analysis.

[9] The LF in (33b) may over-generate unless some pragmatic constraints restrict the value of C_5 (the comparison set of *only*), so that the recommendations do not conflict.

4. Adjectival *Only* as *-est*

Adopting some ideas in Cresswell (1976), Krifka (1989) and Hackl (2000), we propose that all nouns obligatorily take a degree argument. Accordingly, *boy* has the meaning in (38) (where CARD is the cardinality function).

(38) For any $n \in D_d$ and $x \in D_e$, $[\![boy]\!]^g(n)(x)$ = True iff CARD({x}) = n and x is a boy.

Since {x} is a singleton, only n = 1 yields 'CARD({x}) = n', but the assumption that *boy* takes a degree argument is precisely what allows *boy* itself to serve as an argument of *-est* (when it is pronounced *only*). We propose, then, that (8) is the meaning of the superlative morpheme in all its occurrences (and we assume that LF-PF mapping rules dictate that *-est* is pronounced *only* when it "binds" a noun). Accordingly, *John is the tallest boy* and *John is the only boy* have the LFs in (39) and (40) respectively (the presuppositions of (39a,b) can be met only if $[\![n_3]\!]^g = 1$).

(39) John is the tallest boy
- a. Identity LF: *John be* [*IDENT the* [*-est* C_5] [1 [[*tall* d_1] [n_3 *boy*]]]] (cf. (11a))
  John = (the tallest boy in REL) (Presupposition: there is a tallest boy in REL)
- b. Predicative LF: *John* [*-est* C_5] [1 [*be* [$_{DP}$ ~~*the*~~ [[*tall* d_1] [n_3 *boy*]]]]] (cf. (11b))
  Every boy x in REL s.t. x≠John is shorter than John (Presupposition: John is a boy in REL)

(40) John is the only boy
- a. Identity LF: *John be* [*IDENT the* [*-est* C_5] *boy*] (cf. (23a)/(11a))
  John = (the x such that {y ∈ REL| y is a boy and CARD({y}) = 1} = {x})
  (Presupposition: there is a unique y in REL such that y is a boy and CARD({y}) = 1)
- b. Predicative LF: *John* [*-est* C_5] [1 [*be* [$_{DP}$ ~~*the*~~ [n_1 *boy*]]]] (cf. (23b)/(11b))
  {y ∈ REL| y is a boy and CARD({y}) = 1} = {John}
  (Presupposition: John is a boy in REL and CARD({John}) = 1)

Avoid Vacuous Comparisons (mentioned in Section 2 in connection with (8)) guarantees that REL contains other boys besides John in the case of (39), and that REL is not a singleton in the case of (40). *The*-deletion is always constrained by (10), and the parallelism between *the only NP*s and *the A-est NP*s is now fully explained. All other constructions involving *only*-movement are now analyzed in this way, as illustrated in (41)-(45).

(41) Anna didn't give the only good talk at SALT.
not Anna [*-est* C_5] [2 [[*INC give*] [$_{DP}$ ~~*the*~~ [[*good* d_3][n_2 *talk*] *at SALT*]]]] (cf. (14b)/(24b))

(42) John doesn't have the only sister.
not John [*-est* C_5] [2 [*have* [$_{DP}$ ~~*the*~~ [n_2 *sister*]]]] (cf. (15a)/(25a))

(43) Prof. Smith recommended the only book.
Prof. Smith [*-est* C_5] [1 [*recommend* [$_{DP}$ ~~*the*~~ [n_1 *book*]]]] (cf. (33a,b))

(44) John met the only possible spy.
∃ [*-est* [3 [*POSSIBLE* [*John met* t_3]]]] [2 [[$_{DP}$ ~~*the*~~ [n_2 *spy*]][3 [*John meet* t_3]]]] (cf. (20b)/(35b))

(45) John is not the child who is the only boy.
**John be* ~~*the*~~ *child* [*who* 2 [t_2 [*-est* C_5] [1 [*be* [$_{DP}$ ~~*the*~~ [n_1 *boy*]]]]]] (cf. (13d)/(37d))

Plural *the only/A-est NPs* seem to have what we might also call "non-definite readings", as shown by the fact that (46a,b) are well-formed just like their singular counterparts.

(46) a. John and Bill are not the tallest boys. Fred is as tall as they are.
b. John and Bill are not the only boys. Fred is a boy too.

It may seem tempting to say that *John and Bill are not the tallest boys* means '{John, Bill} ≠ (the greatest set S of boys taller than any boy that is not in S)'. This would certainly account for (46a) without resorting to *the*-deletion (i.e., without treating *the tallest boys* in (46) as non-definite).

However, *John and Bill are the tallest boys*, without *not*, may be true even when Fred is a boy shorter than John and shorter than Bill, suggesting that '{John, Bill} = (the greatest set S of boys taller than any boy that is not in S)' is not its only meaning (see Stateva 2005 and Fitzgibbons et al. 2009).

To account for the facts while providing a unified analysis of *the only/A-est NP*s, we maintain *the*-deletion, but we assume (see (47)) that D_e contains singularities (singleton sets of simplex objects) as well as pluralities (non-empty non-singleton sets of simplex objects).[10] Slightly adjusting the proposal in Fitzgibbons et al. (2009), we assume two "pluralizing" operators – *pl* and *pll* in (48a,b) – and the meanings for *boy*, *tall* and *the* in (48c,d,e), and we propose (49) as the meaning of *-est*.

(47) D_e = {{John}, {Bill}, {Fred}, {Jane}, …, {John, Bill}, {Bill, Fred}, …, {John, Bill, Jane}, {John, Fred, Jane}, …, {John, Bill, Fred, Jane}, …}

(48) a. $[\![pl]\!]^g(P^{<d,<e,t>>})(x)$ = True iff for all singularities y ⊆ x, P(1)(y) = True
cf. the distributivity operator in Link (1983).

b. $[\![pll]\!]^g(R^{<d,<e,t>>})(d)(x)$ is defined only if:
for all singularities y ⊆ x, R(d)(y) = False; or for all singularities y ⊆ x, R(d)(y) = True.
When defined, $[\![pll]\!]^g(R^{<d,<e,t>>})(d)(x)$ = True iff there is a singularity y ⊆ x such that R(d)(y) = True cf. Fitzgibbons et al. (2009).

c. $[\![boy]\!]^g(n)(x)$ is defined only if x is a singularity. When defined, $[\![boy]\!]^g(n)(x)$ = True iff CARD(x) = n and the unique y ∈ x is a boy.

d. $[\![tall]\!]^g(d)(x)$ is defined only if x is a singularity. When defined, $[\![tall]\!]^g(d)(x)$ = True iff TALLNESS(the unique y ∈ x) ≥ d.

e. $[\![the]\!]^g(X^{<e,t>})$ is the greatest relevant y ∈ D_e such that X(y) = True, if there is one (otherwise, $[\![the]\!]^g(X^{<e,t>})$ is undefined) Sharvy (1980).

(49) $[\![\text{-}est]\!]^g(REL)(R)(x)$ is defined only if: (i) x ∈ REL; (ii) for all y ∈ REL, there is a degree d such that R(d)(y) is defined; and (iii) there is a degree d such that R(d)(x) = True.
When defined: (a) $[\![\text{-}est]\!]^g(REL)(R)(x)$ = True if there is a degree d such that: (i) R(d)(x) = True, and (ii) for all y ∈ REL such that y ≠ x, R(d)(y) = False; and (b) $[\![\text{-}est]\!]^g(REL)(R)(x)$ = False if for all degrees d: (i) R(d)(x) is undefined, or (ii) R(d)(x) = False, or (iii) there is a y ∈ REL such that y ≠ x, and R(d)(y) is undefined or R(d)(y) = True cf. Fitzgibbons et al. (2009).

Bearing in mind that, in this system, there is no distinction between a singularity x and the unique y ∈ x (see Quine 1969 and Schwarzschild 1996), the consequences are these: (i) the LFs of *John is the tallest/only boy* remain as in (39)-(40), yielding the same meanings (with REL restricted to singularities by the presuppositions of *boy*, *tall* and *-est*); and (ii) the LFs of *John and Bill are the tallest/only boys* are as in (50)-(51), accounting for the data in (46) and allowing *John and Bill are the tallest boys* to be true when there is a boy shorter than both John and Bill.[11]

(50) John and Bill are the tallest boys.

a. Identity LF: [*John and Bill*] *be* [*IDENT the* [*-est* C_5] [1 [[[*pll tall*] d_1] [*pl boy*]]]]
{John, Bill} = (the x ∈ REL such that for all y ∈ x: y is a boy, and for all u ∈ REL such that u ≠ x and all v ∈ u such that v is a boy, v is shorter than y).

b. Predicative LF: [*John and Bill*] [*-est* C_5] [1 [*be* ~~*the*~~ [[[*pll tall*] d_1] [*pl boy*]]]]
John is a boy, Bill is a boy, {John, Bill} ∈ REL, and for all u ∈ REL such that u ≠ {John, Bill} and all v ∈ u such that v is a boy: v is shorter than John and shorter than Bill.

[10] There may be reasons to attribute to D_e a more complex structure than what (47) implies (see Schwarzschild 1996 for discussion), but this has no bearing on the current discussion.

[11] Three things should be noted. First, Fitzgibbons et al. (2009) assume that $[\![\text{-}est]\!]^g(REL)(R)(x)$ also presupposes that for all y in REL distinct from x, y and x do not overlap. This non-overlap may alternatively be a consequence of Avoid Vacuous Comparisons. Secondly, the more fine-grained semantics for *-est* in Fitzgibbons et al. (2009) makes explicit reference to a contextually supplied "cut-off" point on the relevant scale, reflecting the context-dependence of plural superlatives. Reference to such a "cut-off" point can easily be incorporated into (49). Thirdly, $[\![pl]\!]^g(P)$ and $[\![pll]\!]^g(R)(d)$ in (48) are not defined strictly for pluralities (they are also defined for singularities). This is potentially problematic, but the concern arises independently of the facts discussed here.

(51) John and Bill are the only boys.
   a. Identity LF: [*John and Bill*] *be* [*IDENT the* [*-est* C_5] [*pll boy*]]
   {John, Bill} = (the x ∈ REL such that for all y ∈ x, y is a boy, and for all u ∈ REL such that u ≠ x and all v ∈ u, v is not a boy).
   b. Predicative LF: [*John and Bill*] [*-est* C_5] [1 [*be* ~~*the*~~ [[*pll boy*] n_1]]]
   John is a boy, Bill is a boy, {John, Bill} ∈ REL, and for all u ∈ REL such that u ≠ {John, Bill} and all v ∈ u, v is not a boy.

Taking stock: enriching M-D with the assumption that adjectival *only* has the semantics of *-est* affords a fully unified analysis of *the only/A-est NP*s.[12] As we show in Section 5, this assumption also affords a unified account of a certain subject-object asymmetry exhibited by *the only/A-est NP*s. That asymmetry suggests that (8)/(49) is not appropriate even for singular *the only/A-est NP*s. We replace (8)/(49) with a semantics of *-est* that resembles the semantics of non-adjectival *only*.

5. A Puzzling Asymmetry

Our theory correctly predicts *the only/A-est NP*s to sometimes be non-definite (i.e., not to have a uniqueness implication), but the semantics in (8)/(49) does impose on *the only/A-est NP*s an existence presupposition of an *NP*. As we will now see (and as noticed in Higgins 1973), the presuppositions of *the only/A-est NP*s are, in fact, much weaker. We will also see that this "weakness" disappears in Y-N (Yes-No) questions, and that subjects and objects differ regarding uniqueness implications in such questions. We account for these facts exploiting the idea that adjectival *only* has a meaning very similar to that of non-adjectival *only*, as proposed in Ippolito (2008). Since adjectival *only* is *-est*, this effectively means that *-est* itself has a meaning similar to that of non-adjectival *only*.

Affirmative sentences with *the only NP* in subject or object position do not, in fact, presuppose existence of an *NP* (i.e., of an individual fitting the description corresponding to *NP*), as shown by the fact that such sentences may serve as answers to a question that has no such presupposition ((52) and (53)); their *only*-less counterparts do presuppose existence of a unique *NP*. However, in the presence of *not* ((54)), and in Y-N questions ((55)), *the only NP* is incompatible with there being no *NP*, but only in subject position is *the only NP* also incompatible with there being two *NP*s.

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[12] Notice that both (i), where *heaviest* precedes *two*, and (ii), where *two* precedes *heaviest*, may be used to describe a situation where John and Bill are, individually, heavier than any boy outside {John, Bill}. But only (i) may be used to describe a situation where Bill weighs less than Fred, yet Bill and John, as a twosome, weigh more than any other twosome of boys (see Matushansky & Ruys 2006 for related French data).

(i) John and Bill are the heaviest two boys. — individual / twosome
(ii) John and Bill are the two heaviest boys. — individual

This may be accounted for within M-D as follows. (iii), the individual predicative LF of both (i) and (ii), is well-formed: *two*, which is a <e, t>-modifier, moves without leaving a trace and modifies [*-est* C_5 [1 [*be* ~~*the*~~ [[*pll heavy* d_1] [*pl boy*]]]]]. (iv), the twosome predicative LF of (i), is also well-formed (as is the twosome identity LF of (i)). But both (v(a)), the twosome predicative LF of (ii), and (v(b)), the twosome identity LF of (ii), involve illicit *-est*-movement because, by assumption, *PG* is a barrier for movement. ($[\![\uparrow]\!]^g$ forms an "impure" singularity – a group, in the sense of Landman 1989 – from a "pure" plurality, and *PG* forms properties of "impure" singularities from elements of $D_{<e,t>}$; D_e contains "pure" and "impure" singularities and pluralities.)

(iii) [*John and Bill*] [*two -est* C_5 [1 [*be* ~~*the*~~ [[*pll heavy* d_1] [*pl boy*]]]]] — (i)/(ii), ind pred, √
(iv) ↑[*John and Bill*] *-est* C_5 [1 [*be* ~~*the*~~ [[*heavy* d_1] [*PG* [*two* [*pl boy*]]]]]] — (i), tws pred, √
(v) a. ↑[*John and Bill*] *-est* C_5 [1 [*be* ~~*the*~~ [*PG* [*two* [[[*pll heavy*] d_1] [*pl boy*]]]]]] — (ii), tws pred, *
   b. ↑[*John and Bill*] *be IDENT the -est* C_5 [1 [*PG* [*two* [[[*pll heavy*] d_1] [*pl boy*]]]]] — (ii), tws idnt, *
(vi) a. $[\![PG]\!]^g(P)(x)$ = True iff there is a y ∈ D_e such that y is a "pure" plurality, P(y) = True, and x = $[\![\uparrow]\!]^g(y)$.
   b. $[\![two]\!]^g(x)$ = True iff CARD(x) = 2.

John and Bill are the only two boys has an LF similar to (iv). However, the relative oddity of *John and Bill are the two only boys* is unexpected (given (iii)). We currently have no explanation for this.

(52) Did any students vote?
Expected answers: *The only student who voted was Bill*
Bill was the only student who voted
No student voted / There were no students
Somewhat odd answers: *The student who voted was Bill / Bill was the student who voted*

(53) How was SALT? Any good talks on polarity?
Expected answers: *The only good talk on polarity came from Anna's lab*
Anna gave the only good talk on polarity
There were no (good) talks on polarity
Somewhat odd answers: *The good talk on polarity came from Anna's lab / Anna gave the good talk on polarity*

(54) a. Anna didn't give the only good talk on polarity. There were many good talks on polarity / #There were no good talks on polarity. (existence)
b. The only good talk on polarity didn't come from Anna's lab. #There were many good talks on polarity / #There were no good talks on polarity. (existence-uniqueness)

(55) a. Did Anna give the only good talk?
Expected answers: *No, Fred did*
No, there were many good talks
Unexpected answer: *No, there were no good talks* (existence)
b. Did the only good talk come from Anna's lab?
Expected answer: *No, from Fred's*.
Unexpected answers: *No, there were many good talks*
No, there were no good talks (existence-uniqueness)

*The A-est NP*s exhibit a similar pattern regarding existence of a *NP* with some degree of *A*-ness (i.e., an individual fitting the description '*NP*'): (56)-(59) parallel (52)-(55).

(56) Did any rich students from NY vote?
Expected answers: *The richest student from NY who voted was Bill*
Bill was the richest student from NY who voted
No students voted / There were no students from NY
Somewhat odd answers: *The (rich) student from NY who voted was Bill / Bill was the (rich) student from NY who voted*

(57) How was SALT? Any good talks on polarity?
Expected answers: *The best talk on polarity came from Anna's lab*
Anna gave the best talk on polarity

(58) a. Anna didn't give the best talk on polarity. All the talks on polarity were of the same quality / #There were no talks on polarity.
b. The best talk on polarity didn't come from Anna's lab. #All the talks on polarity were of the same quality / #There were no talks on polarity.

(59) a. Did Anna give the best talk on polarity?
Expected answers: *No, Fred did*
No, all the talks were equally good
Unexpected answer: *No, there were no talks on polarity*
b. Did the best talk come from Anna's lab?
Expected answer: *No, from Fred's*
Unexpected answers: *No, all the talks were equally good*
No, there were no talks at all

Given our assumption that *the* cannot delete in the absence of *-est/only*, it is not surprising that the *-est/only*-less answers in (52), (53) and (56) are not in the "expected" category. But why do *the only/A-est NP*s not presuppose existence? And how do they acquire an existence implication in non-affirmative sentences, and an additional uniqueness implication in subject position of non-affirmative sentences? There are no obvious answers to these questions, given what we have proposed so far.

The theory we now entertain consists of the familiar assumption that *only* = *-est*, the familiar assumption that *the* may delete, and a new assumption, namely, that $[\![only/\text{-}est]\!]^g(R)(x)$ asserts – rather than presupposes – that R(d)(x) = True for some degree d; the latter idea is borrowed from the analysis of non-adjectival *only* in Ippolito (2008). We show that it follows from these assumptions that ~~*the*~~ *only/A-est NP* in subject position must scope above *not* (while ~~*the*~~ *only/A-est NP* in object position need not). As a result, the pattern illustrated in (52)-(55) and (56)-(59) is predicted.

The basis of the proposal is the analysis of non-adjectival *only* in Ippolito (2008), which is motivated by Horn's (1996) observation that non-adjectival *only* has very weak presuppositions, as illustrated in (60). (Note the similarity between (60) and (52).)

(60) Q: Did any students vote?
A: Only John.

Ippolito accounts for the fact that A is a good answer to Q in (60) by assuming that the presupposition of *only*$^{non\text{-}adj}$ *John P* is 'if someone P, John P', and not 'John P' or even 'someone P', as is often assumed. More concretely, *only*$^{non\text{-}adj}$ has the meaning in (61) (where the contextual restrictor is omitted for simplicity; but P is presupposed to be defined for all relevant individuals).

(61) $[\![only^{non\text{-}adj}]\!]^g(x)(P)$ is defined only if: {y| P(y) = True} = ø, or P(x) = True.
When defined, $[\![only^{non\text{-}adj}]\!]^g(x)(P)$ = True iff {y| y ≠ x and P(y) = True} = ø.

In addition, Ippolito assumes that ALT(*only*$^{non\text{-}adj}$ *John*) – the set of scalar alternatives to *only*$^{non\text{-}adj}$ *John* – is $\{[\![only^{non\text{-}adj}\ John]\!]^g, [\![no\ one]\!]^g\}$; and that the scalar implicature associated with it is non-cancellable: that is to say, the proposition resulting from replacing *only*$^{non\text{-}adj}$ *John* with *no one* is always false. We adopt Ippolito (2008), utilizing the exhaustifying operator *exh* (e.g., Fox 2007) to account for the scalar implicature of *only*$^{non\text{-}adj}$. *Exh* is inserted in the local domain of *only*$^{non\text{-}adj}$.

(62) For any LF α of type t, $[\![exh\ \alpha]\!]^g$ is defined only if $[\![\alpha]\!]^g$ is defined.
When defined, $[\![exh\ \alpha]\!]^g$ = True iff $[\![\alpha]\!]^g$ = True and for all q ∈ ALT(α) such that ~q is consistent with $[\![\alpha]\!]^g$: q = False.[13]

That the scalar implicature of *only*$^{non\text{-}adj}$ is non-cancellable means, in this system, that *exh*-insertion is obligatory.[14] Assuming that ALT(*only*$^{non\text{-}adj}$ *John voted*) = {'that only John voted', 'that no one voted'}, the derivation of *exh only*$^{non\text{-}adj}$ *John voted* proceeds as follows.

(63) a. *only*$^{non\text{-}adj}$ *John voted* — Presupposition: if someone voted, John voted. Assertion: no x ≠ John voted.
b. *exh* [*only*$^{non\text{-}adj}$ *John voted*] — As in a., PLUS strengthening: No x ≠ John voted and someone voted (=> John voted).

Thus, the surface string *Only John voted* means that John voted and no one else voted. Since it does not presuppose that anyone voted, it is a good answer to *Did any students vote?* in (60).

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[13] More accurately, for any world w and p ∈ $D_{<s,t>}$: $[\![exh]\!]^{w,g}(p)$ is defined only if for all q ∈ ALT(p), q(w) is defined; when defined, $[\![exh]\!]^{w,g}(p)$ = True iff p(w) = True and for all q ∈ ALT(p) such that that ~q is consistent with p, q(w) = False.

[14] This is not generally the case. Some scalar items (famously, *or* and *some*) have cancellable implicatures. In the current system, this follows from the assumption that in those cases, *exh*-insertion is optional, so the grammar generates at least one *exh*-less LF for each string with such a scalar item. But the theory allows there to be scalar items with non-cancellable implicatures. The idea that such items exist in natural language goes back at least to Landman (1998), where *exactly* is analyzed along those lines (though without a covert *exh*).

Exh-insertion in *not only*$^{\text{non-adj}}$ *John voted* is also obligatory and proceeds in the following way: (i) *exh* may be inserted above *not* ((64b)), but exhaustification is vacuous in this case, because negating the alternative – *not no one voted* – is inconsistent with the assertion of the *exh*-less (64a); (ii) *exh* may not be inserted below *not* ((64c)) for the following reason: the resulting assertion is weaker than that of the *exh*-less (64a) (crucially, (64b) is not weaker than (64a)).[15] Like its positive counterpart (63b), (64b) does not presuppose that John voted; this explains why *Not only John* may be a felicitous answer to *Did any students/anyone vote?*.[16]

(64)	a.	*not only*$^{\text{non-adj}}$ *John voted*	Presupposition: if someone voted, John voted. Assertion: some x ≠ John voted. (=> John voted)
	b.	*exh not* [*only*$^{\text{non-adj}}$ *John voted*]	As in a.: some x ≠ John voted and John voted.
	c.	**not exh* [*only*$^{\text{non-adj}}$ *John voted*]	Presupposition: as in a. Assertion: Some x ≠ John voted or John didn't vote.

(65) Mary: John may have voted.
Sally: OK, but did anyone vote at all?
Jim: Not only/ONLY John.

Interestingly, the inference 'John voted' – which *Only John voted* and *Not only John voted* share – "survives" in the Y-N question corresponding to *Only John voted* (namely, *Did only John vote?*).

(66) Q: Did only John vote?
A1: No, Bill voted too.
A2: #No. No one did.

This is not easy to predict, though, within standard theories of questions (e.g., Karttunen 1977), according to which a Y-N question denotes a two-membered set: the question nucleus (i.e., the surface complement of the question operator) and its negation. Accordingly, for *Did only John vote?* (whose nucleus is *exh only*$^{\text{non-adj}}$ *John voted*), we get either (67) (if we illegally omit *exh* from the nucleus), or (68) (if we do not omit *exh* from the nucleus), with the illicit (64c) as one of the possible answers.

(67) {⟦*only*$^{\text{non-adj}}$ *John voted*⟧^{g}, ⟦*not only*$^{\text{non-adj}}$ *John voted*⟧^{g}} =
{'that no x ≠ John voted', 'that some x ≠ John voted'}
(68) {⟦*exh only*$^{\text{non-adj}}$ *John voted*⟧^{g}, ⟦*not exh only*$^{\text{non-adj}}$ *John voted*⟧^{g}} =
{'that John voted and no x ≠ John voted', 'that John didn't vote or some x ≠ John voted'}

Neither (67) nor (68) implies that John voted; thus, they both fail to capture the intuition that *Did only John vote* implies that John voted. Suppose, then, that we could replace the denotation in (68) with {⟦*exh only*$^{\text{non-adj}}$ *John voted*⟧^{g}, ⟦*exh not only*$^{\text{non-adj}}$ *John voted*⟧^{g}}, where *exh* scopes above *not* (as in (64b)). This would correctly predict A2 to be an odd answer to Q in (66). As shown in (69), both members of the question denotation would have 'John voted' as an inference.

(69) {⟦*exh* [*only*$^{\text{non-adj}}$ *John voted*] ⟧^{g}, ⟦*exh* [*not only*$^{\text{non-adj}}$ *John voted*] ⟧^{g}} =
{'that John voted and no x ≠ John voted', 'that John voted and some x ≠ John voted'}

How can we legitimately replace (68) with (69) (without appealing to an ad-hoc rule)? As it turns out, such "replacement" is predicted within Guerzoni & Sharvit (2014), according to which all Y-N

[15] *Exh* insertion is, in principle, optional but must sometimes be blocked, as in (64c), and sometimes forced (see Fn. 14). The general problem of forcing and blocking *exh* insertion is fairly complex; for some discussion, see Chierchia (2013), Meyer (2013), Fox (2014), Bowler (2014) and others.

[16] As the readers can easily verify, if Sally asks her question in (65) out of the blue (i.e., without Mary's preceding statement), Jim's answer is somewhat odd. It is beyond the scope of this paper to account for this fact (which has to do with the pragmatics of negation and its interaction with focus; see, for example, Rooth 1996); for current purposes, all that matters is that (64b) is grammatical (and in principle a possible answer to *Did anyone vote?*), while (64c) is ungrammatical.

questions contain disjunction and negation at LF. For example, the question pronounced *Did any student vote?* is, underlyingly, as in (70) (where the NPI *any* is licensed by *not*).[17]

(70) [[*whether* [1 ? [[*sm student voted*] *or*$_1$ [*not any student voted*]]]]]^g =
{'that {x| x is a student who voted} ≠ ø', 'that {x| x is a student who voted} = ø'}

Applying this analysis to *Did only John vote?*, together with the assumption that *only*$^{non\text{-}adj}$ is obligatorily exhaustified, yields (71), whose denotation is (69) (= {'that John voted and no x ≠ John voted', 'that John voted and some x ≠ John voted'}).

(71) *whether* [2 ? [[*exh* [*only*$^{non\text{-}adj}$ *John voted*]] *or*$_2$ [*exh* [*not only*$^{non\text{-}adj}$ *John voted*]]]]

To sum up so far, the assumption that non-adjectival *only* has a conditional presupposition and a non-cancellable scalar implicature, coupled with the assumption that all Y-N questions are underlyingly disjunctions, accounts for the pattern illustrated by (60), (65) and (66).

To extend this analysis to *the only NP*s and *the A-est NP*s we have to amend M-D as follows. Adjectival *only*, which we assume to be *-est*, resembles non-adjectival *only* in that it has a conditional presupposition and is obligatorily (and locally) exhaustified. Since the discussion is confined (for simplicity) to singular *the only/A-est NP*s, we use the amended version of (8) in (72) (which can easily be adjusted to handle plural *the only/A-est NP*s along the lines of (49)). We illustrate how the theory works only for *the only NPs*, but similar predictions obtain with *the A-est NP*s.

(72) a. [[*-est*]]^g(REL)(R)(x) is defined only if:
(i) x ∈ REL; (ii) for all y ∈ REL, there is a degree d such that R(d)(y) is defined; and (iii) {y ∈ REL| there is a degree d such that R(d)(y) = True} = ø, or there is a degree d such that R(d)(x) = True.
When defined, [[*-est*]]^g(REL)(R)(x) = True iff: {y ∈ REL| there is a degree d such that R(d)(y) = True} = ø, or there is a degree d such that {y ∈ REL| R(d)(y) = True} = {x}.
b. ALT([β [[*-est* C_j] α]]) = {[[*-est*]]^g(REL)([[α]]^g)([[β]]^g), [[*nothing/no one*]]^g(REL)(λz. there is a degree d such that [[α]]^g(d)(z) = True)}.

First, we predict that *the only good talk* in object position (as in *Anna gave the only good talk at SALT*; cf. (53)) need not presuppose existence of a good talk, but in the presence of *not* it acquires an implication regarding existence (but not uniqueness) of a good talk (cf. (54a)). Here is why: (73a,b) both presuppose existence of a unique good talk at SALT (t_1 is an individual-denoting trace in a headless relative clause), but (74a) asserts existence of a unique good talk and (74b(i)) asserts existence of at least two good talks. Importantly, (74b(ii)) is ungrammatical, as it is weaker than its *exh*-less counterpart; on the other hand, (73b) and (74b(i)) are both grammatical, as they are not weaker than their *exh*-less counterparts. (All free variables/pronouns are omitted here for simplicity.)

(73) Absolute LFs of *Anna gave / didn't give the only good talk at SALT*
a. *Anna give the* [*wh* 1 [*exh* t_1 *-est* [2 [*good* [n_2 *talk*] *at SALT*]]]] (cf. (63b))
Anna gave the x such that: (i) if something is a good talk at SALT, x is a good talk at SALT; (ii) something is a good talk at SALT; and (iii) no y ≠ x is a good talk at SALT.
b. *not Anna give the* [*wh* 1 [*exh* t_1 *-est* [2 [*good* [n_2 *talk*] *at SALT*]]]] (cf. (64b))
Anna did not give the x such that: (i) if something is a good talk at SALT, x is a good talk at SALT; (ii) something is a good talk at SALT; and (iii) no y ≠ x is a good talk at SALT.
Presupposition of a. and b.: there is an x such that: (i) if something is a good talk at SALT, x is a good talk at SALT; (ii) something is a good talk at SALT (=> x is a good talk at SALT); and (iii) no y ≠ x is a good talk at SALT.

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[17] a. [[?]]^{w,g} = λq ∈ $D_{<s,t>}$. λp ∈ $D_{<s,t>}$. p = q (Karttunen 1977)
b. [[*whether*]]^{w,g} = λQ ∈ $D_{<st,<st,t>>}$. λq ∈ D_{st}. {r ∈ D_{st}: Q(r)(q) = q(w) = True} ≠ ø (Guerzoni & Sharvit 2014)
c. [[or_j]]^{w,g} = λP ∈ $D_{<\sigma,t>}$. λQ ∈ $D_{<\sigma,t>}$. λz ∈ D_σ. (g(j) = P ∨ g(j) = Q) ∧ g(j)(z) = True (Rooth & Partee 1982)
d. [[*sm*]]^{w,g} = [[*any*]]^{w,g} = λP ∈ $D_{<e,t>}$. λQ ∈ $D_{<e,t>}$. {x ∈ D_e: P(x) = Q(x) = True} ≠ ø (Ladusaw 1979)

(74) Comparative LFs of *Anna gave / didn't give the only good talk at SALT*

a. *exh Anna -est* [2 [[*INC give*] ~~*the*~~ [*good* [n_2 *talk*] *at SALT*]]] (cf. (63b))
If someone gave a good talk at SALT, then Anna gave a good talk at SALT, and every x ≠ Anna did not give a good talk at SALT, and someone gave a good talk at SALT.
=> No x ≠ Anna gave a good talk at SALT, and Anna gave a good talk at SALT.

b. (i) *exh not Anna -est* [2 [[*INC give*] ~~*the*~~ [*good* [n_2 *talk*] *at SALT*]]] (cf. (64b))
If someone gave a good talk at SALT then Anna gave a good talk at SALT, and some x ≠ Anna gave a good talk at SALT.
=> Some x ≠ Anna gave a good talk at SALT, and Anna gave a good talk at SALT.

(ii) **not exh Anna -est* [2 [[*INC give*] ~~*the*~~ [*good* [n_2 *talk*] *at SALT*]]] (cf. (64c))

Next, we predict that *the only good talk* in subject position (as in *The only good talk came from Anna's lab*, see (53)) need not presuppose existence of a good talk, but in the presence of *not* it acquires an implication regarding existence of a unique good talk (see (54b)). When *the* does not delete ((75)), *The only good talk came from Anna's lab* presupposes existence of a unique good talk. When *the* deletes, *-est* cannot move DP-externally ((76a)), since subjects are islands for movement.

(75) [*the wh* 1 *exh* t_1 *-est* [2 [*good* [n_2 *talk*] *at SALT*]]] [*come from Anna's lab*] (cf. (73a))

(76) a. **exh Anna -est* [1 2 [∃ [[~~*the*~~ [*good* [n_1 *talk*] *at SALT*]] *come from* t_2*'s lab*]]] (cf. (74a))

b. (i) If a good talk came from someone's lab, a good talk came from Anna's lab, (ii) a good talk came from someone's lab (=> a good talk came from Anna's lab), and (iii) for every x ≠ Anna, no good talk came from x's lab.

But recall from Section 2 (see (10)) that M-D does not ban *the*-deletion when *-est* moves DP-internally (though so far we have not exploited this option). Accordingly, (77a), where *-est* moves DP-internally and *exh* is inserted below ~~*the*~~, is well-formed. Like (74a) (where *-est* moves DP-externally without violating any island constraints), (77a) does not presuppose existence of a good talk at SALT. Thus, (74a) and (77a) are LFs of felicitous answers to *How was SALT? Any good talks?*.

(77) a. ∃ [[$_{DP}$ ~~*the*~~ *wh* 1 [*exh* t_1 *-est* [2 [*good* [n_2 *talk*] *at SALT*]]]] [*come from Anna's lab*]]

b. There is an x ∈ {z| if something is a good talk, z is a good talk at SALT} such that: (i) for every y ≠ x, y is not a good talk at SALT, (ii) something is a good talk at SALT (=> x is a good talk at SALT), and (iii) x came from Anna's lab.

Not interacts with *-est* in subject position in the following way. When *the* does not delete, as in (78), existence and uniqueness are presupposed. When *the* deletes, (79a), like (76a), involves illegal movement, and (79b), like (74b(ii)), is weaker than its *exh*-less alternative, and is therefore ungrammatical. But (79c), like (74b(i)) and (77a), is not weaker than its *exh*-less alternative and does not involve illegal movement; it is a grammatical "negative" LF with no existence presuppositions.

(78) *not* [[*the wh* 1 *exh* t_1 *-est* [2 [*good* [n_2 *talk*] *at SALT*]]] [*come from Anna's lab*]] (cf. (73b))

(79) a. **not exh Anna -est* [1 2 [∃ [[~~*the*~~ [*good* [n_1 *talk*] *at SALT*]] *come from* t_2*'s lab*]]]

b. **not* ∃ [[~~*the*~~ *wh* 1 *exh* t_1 *-est* [2 [*good* [n_2 *talk*] *at SALT*]]] [*come from Anna's lab*]]

c. ∃ [[$_{DP}$ ~~*the*~~ *wh* 1 *exh* t_1 *-est* [2 [*good* [n_2 *talk*] *at SALT*]]] [1 [*not* t_1 *come from Anna's lab*]]]

This means that *The only good talk didn't come from Anna's lab* need not presuppose existence of a unique good talk and may be a felicitous answer to Sally's question in (80) (cf. (65)).

(80) Mary: Someone from Anna's lab may have given a good talk.
Sally: Yes, but were there any good talks at all?
Jim: The only good talk did not come from Anna's lab. (79c)

What about the interaction of *the only good talk* with other "negative" operators? The predictions vary, because unlike *not*, some of these operators have presuppositions (see, for example, the discussion of *if* in von Fintel 1999) that guarantee that the LF with *exh* is not weaker than the *exh*-less LF.

Next, the disjunction+negation analysis of questions that we have adopted (see (70) and (71)) explains why the questions in (55) preserve the "negative" pattern of (54) regarding existence and uniqueness of a good talk. (81a), where *the only good talk* is in subject position, denotes either the Y-N pair {(75), (78)} (see (81b)), or the Y-N pair {(77a), (79c)} (see (81d)); both pairs imply that there was exactly one good talk. Crucially, (81c) – which does not imply that – is ungrammatical, like (76a) and (79a), because of illegal movement. We assume that (81e) is ungrammatical too, because it contains the ungrammatical (79b), though (81e) as a whole is not weaker than its *exh*-less counterpart (but see Bowler 2014 for a different approach to exhaustification in questions, based on data from Warlpiri). Thus, neither *There were many good talks* nor *There were no good talks at all* is a good answer.[18]

(81) a. Did the only good talk at SALT come from Anna's lab? (55b)
b. *whether* [3 ? [[[*the wh* 1 *exh* t_1 *-est* [2 [*good* [n_2 *talk*]]]] [*come from Anna's lab*]] *or*$_3$ [*not* [[*the wh* 1 *exh* t_1 *-est* [2 [*good* [n_2 *talk*]]]] [*come from Anna's lab*]]]]]
c. **whether* [3 ? [[*exh Anna -est* [1 2 [∃ [[~~*the*~~ [*good* [n_1 *talk*]]] *come from* t_2*'s lab*]]]] *or*$_3$ [*exh not* [*Anna -est* [1 2 [∃ [[~~*the*~~ [*good* [n_1 *talk*]]] *come from* t_2*'s lab*]]]]]]]
d. *whether* [3 ? [[∃ [[~~*the*~~ *wh* 1 *exh* t_1 *-est* [2 [*good* [n_2 *talk*]]]] [*come from Anna's lab*]]] *or*$_3$ [∃ [[~~*the*~~ *wh* 1 *exh* t_1 *-est* [2 [*good* [n_2 *talk*]]]] [1 [*not* t_1 *come from Anna's lab*]]]]]]
e. **whether* [3 ? [[∃ [[~~*the*~~ *wh* 1 *exh* t_1 *-est* [2 [*good* [n_2 *talk*]]]] [*come from Anna's lab*]]] *or*$_3$ [*not* ∃ [[~~*the*~~ *wh* 1 *exh* t_1 *-est* [2 [*good* [n_2 *talk*]]]] [*come from Anna's lab*]]]]]

On the other hand, (82a), where *the only good talk* is in object position, may denote the Y-N pair {(73a), (73b)} (see (82b)), which implies that there was exactly one good talk, but it may also denote the Y-N pair {(74a), (74b(i))} (see (82c)), which merely implies that there was a good talk. As a result, (82a) may be answered with *No, there were many good talks*. Crucially, (82a) does not have (82e) (which mimics the structure of the ungrammatical (81e)) as a possible LF (even if it has (82d) as a possible LF), so it may not be answered with *No, there were no good talks at all*.[19]

(82) a. Did Anna give the only good talk at SALT? (55a)
b. *whether* [3 ? [[*Anna give* [*the wh* 1 *exh* t_1 *-est* [2 [*good* [n_2 *talk*]]]]] *or*$_3$ [*not* [*Anna give* [*the wh* 1 *exh* t_1 *-est* [2 [*good* [n_2 *talk*]]]]]]]
c. *whether* [3 ? [[*exh Anna -est* [1 [[*INC give*] ~~*the*~~ [*good* [n_1 *talk*]]]]] *or*$_3$ [*exh not* [*Anna -est* [1 [[*INC give*] ~~*the*~~ [*good* [n_1 *talk*]]]]]]]
d. *whether* [3 ? [[∃ [[~~*the*~~ *wh* 1 *exh* t_1 *-est* [2 [*good* [n_2 *talk*]]]] [3 [*Anna give* t_3]]]] *or*$_3$ [∃ [[~~*the*~~ *wh* 1 *exh* t_1 *-est* [2 [*good* [n_2 *talk*]]]] [3 [*not Anna give* t_3]]]]]
e. **whether* [3 ? [[∃ [[~~*the*~~ *wh* 1 *exh* t_1 *-est* [2 [*good* [n_2 *talk*]]]] [3 [*Anna give* t_3]]]] *or*$_3$ [*not* ∃ [[~~*the*~~ *wh* 1 *exh* t_1 *-est* [2 [*good* [n_2 *talk*]]]] [3 [*Anna give* t_3]]]]]

We are now in a somewhat better position to address the following concern (see Fn. 6). We predict that *Anna didn't give the only good talk* may be acceptable when Anna gives two good talks; similarly for *Anna gave the only good talk*. The former prediction is unobjectionable; the latter prediction seems worrisome. However, the same prediction seems less worrisome in view of (83)-(85).

(83) Q: Did Anna give exactly one good talk at SALT?
A: She sure did. #In fact, she gave two good talks.
(84) Q: Did Anna give a good talk at SALT?
A: She sure did. In fact, she gave two good talks.
(85) Q: Did Anna give the only good talk at SALT?
A: She sure did. In fact, she gave two good talks.

[18] Some speakers report that the copular *Was the only student who voted Bill?* can be answered with *Two students voted* (and not as a presupposition correction). Such speakers, it seems, allow movement out of subjects in copular constructions (consistently with Kotek et al. 2011). We currently see no obvious explanation for this (even if we assume an "inversion" structure for *The only student who voted was Bill*, along the lines of Moro 1997).

[19] (81d) and (82d) may be ruled out as well, on independent grounds: in the "negative" disjunct of a Y-N question, no element (other than *exh*) can be higher than negation (as is clearly the case in *Did someone vote?*).

Our hope is that a rich enough pragmatic theory will ultimately explain why the "bare" *Anna gave the only good talk* tends to have an 'exactly-one' reading.

Finally, the proposal predicts an additional property that *the only NP*s and *the A-est NP*s have in common. As observed in Bhatt (2002), when *NP* contains an intensional clause-taking verb (such as *say*), the verb shows scope interaction with *only/-est*.

(86) The longest book John said Tolstoy had written was Anna Karenina.
longest << *say*: Of the books written by Tolstoy according to what John said, AK is longest.
say << *longest*: According to what John said, of the books written by Tolstoy, AK is longest.

(87) The only book John said Tolstoy had written was Anna Karenina.
only << *say*: John said about AK that Tolstoy had written it; he didn't say about any other book that Tolstoy had written it.
say << *only* According to what John said, Tolstoy wrote AK and no other book.

Bhatt's (2002) analysis consists of enriching M-D with optional lowering of *-est* (see also Bhatt & Sharvit 2005, Hulsey & Sauerland 2006). Adding *exh* yields (88a,b) for (87) (and similar LFs for (86)).

(88) a. [*the wh* 2 *exh* t_2 *-est* [1 [[n_1 *book*][4 [*John said Tolstoy wrote* t_4]]]]] *be IDENT AK*
(the x such that {y| y is a book and John said 'Tolstoy wrote y'} = {x}) = AK
b. [*the wh* 2 [*John said exh* t_2 *-est* [3 [[n_3 *book*][4 [*Tolstoy wrote* t_4]]]]]] *be IDENT AK*
(the x such that John said '{y| y is a book and Tolstoy wrote y} = {x}') = AK

Both LFs in (88) come with an existence presupposition imposed by *the*. But given our version of M-D, we expect *the*-deletion to be possible here. Indeed, Q1 in (89) does not presuppose existence of an actual book such that John said Tolstoy wrote it, and Q2 in (90) does not presuppose that John said that Tolstoy wrote a book, yet the string *The only book John said Tolstoy wrote / had written was Anna Karenina* is a good answer to both.

(89) Q1: Are there any books that, according to John, were written by Tolstoy?
A: The only book John said Tolstoy wrote was Anna Karenina.
LF1: ∃ [~~*the*~~ *wh* 2 [*exh* t_2 *-est* [1 [[n_1 *book*][4 [*John said Tolstoy wrote* t_4]]]]] *be IDENT AK*
There is a x such that {y| y is a book and John said 'Tolstoy wrote y'} = {x}, and x = AK

(90) Q2: According to what John said, did Tolstoy write any books?
A: The only book John said Tolstoy wrote was Anna Karenina.
LF2: ∃ [~~*the*~~ *wh* 2 [*John said exh* t_2 *-est* [3 [[n_3 *book*][4 [*Tolstoy wrote* t_4]]]]] *be IDENT AK*
There is a x such that John said '{y| y is a book and Tolstoy wrote y} = {x}', and x = AK

To sum up: on the assumption that adjectival *only* is *-est*, and that adjectival *only* and non-adjectival *only* are semantic kin, it is natural to attribute to *-est* the same semantic and pragmatic properties that non-adjectival *only* has. This affords an account of the fact that *the only NP*s and *the A-est NP*s do not presuppose *NP*-existence, and exhibit a subject-object asymmetry regarding existence and uniqueness inferences in the presence of *not* and in Y-N questions.

6. Unsolved Problems and Other Loose Ends

As we saw, an extended version of M-D affords a fully unified analysis of some superficially different types of non-definite DPs headed by *the*. There are problems with this version of M-D that arise from the assumption that *-est* may move, and there are problems that arise from the claim that non-definiteness is the result of the presence of *-est* and deletion of *the*. The brief discussion below is not intended to provide an exhaustive list of concerns.

We have already seen some cases of over-generation due to the hypothesis that *only/-est* moves DP-externally. Another instance of such over-generation has to do with the interaction of *only/-est* with negation. For example, when Paul and Mary each give a good talk and Anna gives no talk (or

only bad talks), *Anna didn't give the only good talk* is not judged true, but if *not* is allowed to scope below *-est*, we do not predict that.

(91) a. *exh not Anna -est* C_5 [3 [[*INC give*] ~~*the*~~ [*good* n_3 *talk*]]]
b. *exh Anna -est* C_5 [3 [*not* [*INC give*] ~~*the*~~ [*good* n_3 *talk*]]]

There is no obvious way to block (91b), which comes out true in this scenario. Furthermore, forcing *not* to scope above *-est* would conflict with facts regarding "negative" superlatives such as *least*. To see this, consider *Bill climbed the least high mountain*. It is judged true when Bill climbs a mountain that is lower than all the mountains climbed by anyone else. (92a), which is presumably equivalent to (92b), accounts for this fact. This suggests that *not* is not forced to scope above *-est*.

(92) a. *exh Bill least* C_5 [1 [[*INC climb*] ~~*the*~~ [*high* d_1] [n_3 *mountain*]]]
b. *exh Bill -est* C_5 [1 [*not* [*INC climb*] ~~*the*~~ [*high* d_1] [n_3 *mountain*]]]

But as observed in Sharvit & Stateva (2002), (92a) does not account for the fact that when Bill climbs a mountain that is lower than one of the mountains that John climbs but higher than another mountain that John climbs, the same sentence is not judged true. According to Sharvit & Stateva, the problem is solved if *least/-est* never moves DP-externally, and the so-called comparative reading is just a special case of the absolute reading. That analysis was already explored and rejected in Heim (1999) because of Split Scope, leaving the problem unsolved (see discussion of (14); for some additional relevant discussion, see Heim 2000, Aihara 2009, Pancheva and Tomaszewicz 2012, and Tomaszewicz 2015).

A different problem concerns the general approach to (non-)definiteness. If all cases of semantic non-definiteness of morpho-syntactically definite DPs are due to *the*-deletion, and *the*-deletion is constrained by (10), it follows that all such DPs contain a hidden superlative morpheme. Due to space limitations, we mention only two of the cases that seem problematic for such a view.

It is tempting to analyze *the first NP*s as containing a covert *-est*, because: (i) they can be non-definite in the complement position of relational *have* as in (93), (ii) they interact scopally with *say* as in (94) (see Bhatt 2002), (iii) they show the same subject-object asymmetry that *the only/-est NP*s do (*No, there were parallel sessions so three talks opened the conference* is an expected answer only to (95a)), and (iv) they support modal superlative readings as in (96).

(93) Mary had the first boyfriend.
Possible reading, roughly: Mary became part of a couple before anyone else did.
(94) The first book that John said Tolstoy had written was Anna Karenina.
1st << *say*: John said 'Anna Karenina was written by Tolstoy' before John said about any other book that it was written by Tolstoy.
say << 1st: John said 'Tolstoy wrote Anna Karenina before he wrote any of his other books'.
(95) a. Did Anna give the first talk at WCCFL?
b. Did the first talk at WCCFL come from Anna's lab?
(96) John met the first possible spy.
Possible reading, roughly: John met the first spy that it was possible for him to meet.

In addition, while *John needed to climb the first mountain* cannot mean 'John needed to climb a mountain before anyone else needed to climb a mountain' (see Bylinina et al. 2014), some intensional DP-taking verbs (see Section 3) seem to support Split Scope readings.

(97) Mary didn't imagine the first ghost; John imagined one at exactly the same time.

But as noticed in Bylinina et al. (2014), while the non-modal object DP in (98a) forces a temporal-ordering interpretation, the modal object DP in (98b) is compatible with a non-temporal ordering interpretation. It is hard to see how this difference follows from the presence of a hidden superlative.

(98) a. John read the first book to be published in 2013.
b. John read the first book to be assigned in my class next year.

It is also tempting to account for the behavior of role-DPs such as *the president* and *the mayor*, which do not contain any overt "adjectival" material, by positing a covert superlative-like operator – call it *-EST* – in the lexical entry of the noun, and an optional covert operator – *IL* – in constructions where the noun is preceded by *only/-est*.

(99) John is not the president. We don't even have a president / #We have two presidents.
exh not John be ~~the~~ [-EST C_5 president] (cf. (74))

(100) The president is not John. #We don't even have a president / #We have two presidents.
(i) ∃ [[*~~the~~ wh* 1 [*exh* t_1 *-EST* C_5 *president*]] [1 [*not* t_1 *be IDENT John*]]] (cf. (79))
(ii) *not* [[*the wh* 1 [*exh* t_1 *-EST* C_5 *president*]] [*be IDENT John*]] (cf. (78))

(101) a. John is not the only president at this conference. Two presidents are giving talks / #There are no presidents at this conference.
exh not John -est C_5 [4 [*be ~~the~~* [*IL* [3 [∃ 2 *exh* pro_3 [*-EST* C_2 *president*]]] n_4]]] (cf. (40b))
b. $[\![IL]\!]^g(P^{<e,t>})(n)(x)$ = True iff P(x) = True and CARD(x) = n

Such a theory of role-DPs depends on the (somewhat problematic) stipulation that *-EST* and *-est* are not exactly the same. More concretely, we would have to say that while they have the same assertion (as in (72)), and the same set of alternatives, they have different presuppositions: $[\![\text{-}EST]\!]^g$(REL)(R)(x) presupposes that there is at most one y in REL that has some degree of R, while $[\![\text{-}est]\!]^g$(REL)(R)(x) has the presupposition in (72).

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