This talk concerns the superlative morpheme -est and its ability to license Negative Polarity Items (NPIs) such as any and ever, and addresses the puzzle posed by utterances such as (1).

(1) John read the most books anyone ever read.

Hackl 2009, developing on Heim 1999, analyses most in (2) as composed of -est and many, arguing that it only has a meaning where -est takes scope at VP, as opposed to ambiguous examples such as (3) where -est can take scope at either VP or NP.

(2) John read the most books. (Hackl 2009)
   “John read a collection of books whose cardinality exceeds that of any collection of books read by any salient alternative to John”

(3) John climbed the highest mountain. (Heim 1999)
   VP scope: “John climbed a mountain whose height exceeds that of any mountain climbed by any salient alternative to John”
   NP scope: “John climbed the mountain whose height exceeds that of any other mountain”

The est-movement analysis has been discussed in recent work (Gajewski 2010, Herdan & Sharvit 2006, i.a.) in light of von Fintel’s (1999) proposal that NPIs are only permitted in Strawson-Downward Entailing (SDE) environments: the superlative licenses NPIs because it licenses the set-to-subset inference in (4) once we assume that the presupposition of the conclusion is satisfied (Strawson Entailment). Thus the NPI is correctly predicted to be licensed in (5).

(4) a. Erin is the quickest athlete.
   b. Erin is a volleyball player. (presupposition of 4c.)
   c. → Erin is the quickest volleyball player.

(5) Erin is the quickest volleyball player I have ever seen. (Gajewski 2010)

A fact which has not been highlighted in the cited works is that when -est takes VP scope, SDE inferences are invalid, e.g. (2) does not Strawson-Entail (6c), as the given scenario illustrates.

(6) a. John read the most books. (= (2))  
   b. John read some travel books. (presupposition of 6c.)  
   c. !→ John read the most travel books.

<table>
<thead>
<tr>
<th></th>
<th>John</th>
<th>Bill</th>
<th>Sue</th>
</tr>
</thead>
<tbody>
<tr>
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<td>15</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>travel books read</td>
<td>3</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
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Given the observation that VP-scope -est is not SDE, to find that in (1) NPIs appear to be licensed in a relative clause modifier of the NP – i.e. within the VP – comes as a surprise.

The construction in (1) presents further puzzles when we consider the minimally-contrasting variants in (7): the oddness of (7a) with Mary suggests that it presupposes that its subject is a boy, whereas replacing read by bought in the embedded clause renders (7b) ungrammatical.

(7) a. \(\neg\) John /#Mary read the most books any boy ever read.
   b. *John read the most books anyone ever bought.

These surprising effects disappear in variations on (7) without the NPIs (a possible scenario for the felicitous use of the utterances in (8) is a book-reading contest with unusual categories):

(8) a. Mary read the most books a boy read.
   b. John read the most books someone bought.

The intuition is that the embedded clauses in (8) act as modifiers restricting the set of books read, while in (1) the embedded clause contributes information about the amount of books read.

I adopt the analysis discussed in Heim 1999 for the superlative as a focus-sensitive operator. The analysis is motivated by examples such as (9a), which is disambiguated by prosodic focus.

(9) a. John is angriest at Mary. (Heim 1999)
   b. “John is angrier at Mary than anyone else is at her” (9a + focus on JOHN)
   c. “John is angrier at Mary than he is at anyone else” (9a + focus on MARY)
According to Heim’s denotation in (10), est takes a degree property P and a set of degree properties C, such that C is constrained to be (a subset of) the focus value of P.

(10) For all C of type \langle \langle d,t \rangle \rangle, P of type \langle d,t \rangle: est(C)(P) is defined only if P \in C \& \exists Q[Q \neq P \& Q \in C]

When defined, est(C)(P) = 1 iff \exists d[P(d) = 1 \& \forall Q \in C[Q \neq P \rightarrow Q(d) = 0]]

In order to derive the meaning in (9c), Heim proposes the LF and the setting for C in (11a,b).

(11) a. \texttt{[est-C]} [\lambda d. \text{John is d-angry at Mary}] 

b. \texttt{C} \subseteq [\lambda d. \text{John is d-angry at x} \mid x \in D_e]

According to (10), (11) is true if \{d \mid \text{John is d-angry at Mary}\} contains a degree d' such that there is no x alternative to Mary such that \{d \mid \text{John is d-angry at x}\} contains d'.

I propose to extend Heim’s analysis to cases such as (1) by interpreting the embedded clause as an overt restrictor for est; it restricts the value of C, and thus denotes a set of degree properties.

(12) John read the most books \{anyone ever read \langle \langle d-many books \rangle \rangle\}

a. \texttt{[est-C]}[\lambda d \langle \text{John read d-many books} \rangle \land t] \quad \text{(partial LF for (12))}

b. \texttt{\{\lambda d'. \langle [x \text{ read d'-many books} \rangle \land t'] \mid x \in D_e \& t \in D_T\}} \quad \text{(denotation of embedded clause)}

The embedded clause in (12) provides the value for C given in (12b), a set of amounts of books individuated by readers and reading-times. Thus (12) returns true if the amount of books read by John at the index time is greater than any amount of books read by anyone else at any other time.

My proposal hinges on the interpretation of the NPI indefinites any, ever as introducing the alternatives which est quantifies over, and exploits independently-required mechanisms for forming Hamblin sets. In the particular technical implementation I adopt, NPIs make much the same contribution as \textit{wh}-elements in a Karttunen (1977)-style compositional semantics of questions, although alternative formulations are possible (e.g. Kratzer & Shimoyama’s (2002) treatment of \textit{irgendein} indefinites). Once we assume that the meaning of e.g. \textit{any boy read} is as in (13a), we see how the definedness condition in Heim’s denotation (10) – that P \in C – triggers the presuppositional effect noted in (7a), see (13b); similarly (7b) is predicted to be uninterpretable, as it is impossible for this condition to be satisfied, see (14).

(13) a. \texttt{[[that any boy read \langle \langle d-many books \rangle \rangle]]} = \{\lambda d. \text{read d-many books} \mid x \text{ is a boy}\}

b. \texttt{est}((13a))[(\lambda d. \text{Mary read d-many books}) \ \text{defined only if} \ P \in C, \ i.e. \ \text{Mary is a boy}]

(14) \texttt{est}((\lambda d. \ x \text{ bought d-many books} \mid x \in D_e))(\lambda d. \text{John read d-many books}) \ \text{undefined:} \ P \notin C

An important result of this analysis is that the position in which the NPIs are interpreted is SDE:

(15) a. John has published the most papers \textit{any linguist} has published.

b. John has published the most papers \textit{any syntactician} has published.

Intuitively, the inference from (15a) to (15b) goes through as long as John is indeed a syntactician, i.e. (15b)’s presupposition is satisfied. This result is predicted by the semantic analysis: if (16) is the largest set in (17a) (i.e. (15a) is true) and (16) is in (17b) (i.e. (15b) is defined), then since (17b) is a subset of (17a), (16) is also the largest set in (17b), i.e. (15b) is true.

(16) \lambda d. \text{John published d-many papers} - \text{est’s P argument in both (15a \& b)}

(17) a. \{\lambda d. \text{published d-many papers} : x \text{ is a linguist}\} - \text{est’s C argument for (15a)}

b. \{\lambda d. \text{published d-many papers} : x \text{ is a syntactician}\} - \text{est’s C argument for (15b)}

I provide additional support for my proposal with syntactic data indicating that the embedded clause is interpreted in construction with -est rather than the NP.