

## Exclusivity, Uniqueness and Definiteness

We offer solutions to two puzzles concerning the interaction between exclusivity and definiteness: (i) the disappearance of the definite article's uniqueness (or 'maximality') presupposition in the presence of exclusive adjectives *sole* and *only*, and (ii) the contrast between *sole* and *only* with respect to the ability to appear with an indefinite determiner: *a sole proprietor* vs. *\*an only proprietor*.

The first puzzle can be illustrated as follows. The sentences *He is the proprietor*; *He is not the proprietor*; *Is he the proprietor?* and *If he is the proprietor, then I want to talk to him*, all imply that there is exactly one proprietor. But the uniqueness inference does not project through negation, questions or conditionals in the presence of *sole* or *only*: Although the sentence *He is the sole/only proprietor* implies that there is exactly one proprietor, this does not follow from *He is not the sole/only proprietor* (which implies in fact that there are more), *Is he the sole/only proprietor?* or *If he is the sole/only proprietor, then I want to talk to him*.

Our solution to this first puzzle is based on the claim that the at-issue meaning contributed by *sole* and *only* entails uniqueness of the referent with respect to the property denoted by the noun. We claim that the uniqueness presupposition of the definite determiner is a condition on felicitous use of it, and that this is satisfied when uniqueness is part of the at-issue meaning, but in this case it does not project, because in general at-issue content does not project (Roberts et al., 2009).

This story must be complicated in order to deal with our second puzzle, viz. the fact that *sole*, but not *only*, can appear with an indefinite determiner.

- (1) This company has a **sole** director.
- (2) \*There was an **only** piece of cake left.

The unacceptability of (2) can be understood under the assumption that *only* contributes uniqueness to the interpretation of the noun phrase, but if the reason for the incompatibility between *only* and the indefinite determiner is its contribution of uniqueness, then why shouldn't the same logic apply to *sole*?

This second puzzle also arises with superlatives such as *best*, which can appear with indefinite determiners despite an apparent contribution of uniqueness, as Herdan and Sharvit (2006) discuss:

- (3) The dean praised some **best** student (or other) [Herdan and Sharvit's 5b]

A felicitous utterance of (3) requires that there are multiple sets of students in the context; the *some*-phrase in (3) picks out a student who is best in one of these sets. Herdan and Sharvit call this set of sets **S**; when **S** contains multiple sets, *best student* does not pick out a unique referent, and the indefinite article is therefore licensed. The definite article is licensed when **S** contains only one set.

According to Herdan and Sharvit, adjectival *only* picks out a unique member of a set **C** of *individuals*, and it is for that reason that *only* cannot take an indefinite determiner. This follows as a consequence of the assumption that *only* is a *discourse exclusive*, and therefore relates to a unique salient set of alternatives (typically the Question Under Discussion), as in the analysis of adverbial *only* proposed by Beaver and Clark (2008). We propose this for adjectival *only* as well. Our proposed lexical entry for adjectival *only* is as follows, where ALT is a salient set of alternatives,  $\text{MAX}(\phi)$  means that  $\phi$  is an upper bound on the true answers in ALT in terms of a strength ranking  $\leq$  given by the context (which in this case will correspond to a boolean lattice of individuals, with stronger answers corresponding to larger sums), and  $\text{MIN}(\phi)$  means that  $\phi$  is a lower bound on the true answers in ALT (glossing over intensionality):

- (4)  $\llbracket \text{only} \rrbracket = \lambda P_{\langle e,t \rangle} . \lambda x_e : \text{MIN}(P(x)) \wedge \text{ALT} \subseteq \{p \mid \exists x \in D_e p = P'(x)\}$   
 $.\text{MAX}(P(x))$

In contrast, we propose that *sole* relates to a set of sets **S**, like superlatives. Formally (where the contextual variable **S** is intentionally left unbound):

- (5)  $\llbracket \text{sole} \rrbracket = \lambda P_{\langle e,t \rangle} . \lambda x_e : \forall x', X [X \in \mathbf{S} \wedge x' \in X \rightarrow P(x)]. \exists X \in \mathbf{S} \text{ s.t. } X = \{x\}$

This allows us to explain the fact that *sole* can take an indefinite determiner and *only* cannot. When **S** contains multiple sets, the indefinite determiner is predicted to be appropriate; when **S** contains only one set, the referent is uniquely identifiable and the definite determiner is predicted to be appropriate.

This also correctly predicts a contrast between definite and indefinite determiners with respect to NPI licensing by *sole*. When **S** contains only one set, a Strawson Downward Entailing environment is created in the scope of the adjective, so NPIs are correctly predicted to be licensed with definite determiners:

(6) John is the **\*(sole)** student who asked **any** questions.

But when **S** contains multiple sets, the environment is not SDE (by an analogous proof to the one Herdan and Sharvit give for superlatives), so negative polarity items are not predicted to be possible with indefinite determiners. Indeed, at least in some cases in which it appears with an indefinite determiner, *sole* does not license NPIs:

(7) \*John is a **sole** student who asked **any** questions.

But the analysis in (5) does not fully account for *sole*'s ability to be accompanied by an indefinite determiner. An utterance of (8) does not seem to require that the context contain several singleton sets of pieces of cake.

(8) There was a **sole** piece of cake left.

In such cases, a *sole* can be paraphrased *only one*, and NPIs are licensed even with indefinite determiners, and even outside the scope of the NP it occurs in:

(9) There was a **sole** student with **any** knowledge of French.

(10) A **sole** employee **ever** complained about the mess.

The two readings are further differentiated by determiner preference. The determiner *some* is acceptable in cases where there is a salient set of sets **S** (cf. (3)):

(11) There was **a/some sole** proprietor at the party.

But *some* cannot replace *a* in (8) without a drastic change in meaning that is difficult to contextualize:

(12) ??There was **some sole** piece of cake left.

A further difference is that when *sole* can be paraphrased *only one*, NP-modifying *not* is possible; compare *Not a sole person came* and *\*Not a sole author came* (on the most common reading of *sole author*).

To account for these facts, we propose that *sole* can also function as a quantifier (type  $\langle\langle e, t \rangle, \langle\langle e, t \rangle, t \rangle\rangle$ ) with roughly the semantics of *only one*:

(13)  $\lambda P_{\langle e, t \rangle} \cdot \lambda Q_{\langle e, t \rangle} \cdot |\{x : P(x) \wedge Q(x)\}| = 1$

We propose further that a noun phrase containing this version of *sole* is indefinite for the same reason that *one* is indefinite, and the indefinite determiner *a* is inserted for syntactic reasons without affecting the interpretation. A genuine determiner like *some* would not be expected to co-occur with it, because the types would be incompatible. And the fact that it is a quantifier means that it takes scope over the entire sentence, which explains why it licenses NPIs outside of its syntactic scope.

In summary, our explanation for *sole*'s ability to take an indefinite determiner is two-pronged: *sole* has one meaning that, like superlatives according to Herdan and Sharvit's analysis, relates to a set of sets **S**, and another meaning as a quantifier. The quantifier never occurs with the definite article, and the **S** version only occurs with the definite article when set of sets is a singleton, in which case the referent can be uniquely identified, so uniqueness is part of its at-issue contribution. Although its lexical entry looks quite different from *sole*'s, *only* makes an at-issue uniqueness contribution as well. But *only* is a *discourse exclusive*, relating to a single salient set of alternatives and concomitantly a single salient set of individuals with the property in question, which limits its use to the definite determiner.

## References

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