Contents

1. Patrick D. Elliott. #Only zero.
3. Andrew Murphy. A Distinctness Effect in the German Noun Phrase.
In a recent paper, Bylinina and Nouwen (2018) claim that sentences involving the numeral zero are subject to obligatory exhaustification. This claim falls out as a result of two assumptions. First, that the pluralization operator $\times$ yields a full lattice structure, crucially including the bottom element $\perp$, which has cardinality 0. This falls out from the definition of $\times$ given in (1).

$$\times Z = \{\sqcup X \mid X \subseteq Z\} \quad \text{(Bylinina and Nouwen 2018:8)}$$

Second, that numerals give rise to an at least reading basically; the exactly reading is derived via exhaustification relative to excludable alternatives wherever the numeral varies. The sentence Three philosophers attended the talk is therefore mapped to the Logical Form in (2a). When subject to strengthening via exhaustification, the resulting Logical Form is as in (2b).

$$\begin{align*}
\exists x (\#x = 3 \& \times \text{philosopher}(x) \& \times \text{attended-the-talk}(x)) \\
\exists y (\#y > 3 \& \times \text{philosopher}(y) \& \times \text{attended-the-talk}(y))
\end{align*}$$

A consequence of these assumptions is that, prior to exhaustification, sentences involving the numeral zero, such as Zero philosophers attended the talk will always be tautological, as in (3a). This is because every pluralized predicate contains the bottom element $\perp$. In order to express a contingent statement, the sentence must be exhaustified, as in (3b).

$$\begin{align*}
\exists x (\#x = 0 \& \times \text{philosopher}(x) \& \times \text{attended-the-talk}(x)) \\
\exists y (\#y > 0 \& \times \text{philosopher}(y) \& \times \text{attended-the-talk}(y))
\end{align*}$$

In the literature on grammatical exhaustification (see, e.g., Chierchia 2004, Fox 2007, Magri 2009), it is something of a mantra to claim that the exhaustivity operator exh is the covert counterpart of the focus-sensitive operator only. Both exh and only compose with a prejacent $\alpha$ and negate the excludable alternatives to $\phi$ based on the focus-structure of $\phi$. For our purposes, we can take the excludable alternatives to $\phi$ to be those sentences $\psi$ such that $\psi$ is logically non-weaker than $\phi$.

Here we make the novel observation that the numeral zero cannot associate with only, as illustrated by the infelicity of (4a). Other numerals can, however, associate with only, obligatorily giving rise to an exactly reading, as illustrated as in (4b). This is exactly what we expect if only and exh negate excludable alternatives. There are two possible ways to interpret this result. Most straightforwardly, it casts serious doubt on Bylinina and Nouwen’s claim that sentences with zero involve obligatory exhaustification. Alternatively, we could interpret this as yet more evidence that the putative parallel between only and exh breaks down upon further investigation (see, e.g., Alxatib 2013 and Buccola 2018 for related observations), although for Bylinina and Nouwen this would still leave open the question of why only gives rise to an exactly reading with other numerals but apparently not zero.
Furthermore, we observe that there is not an absolute ban on only associating with zero. This seems to be possible when zero doesn’t pick out a scalar endpoint, such as with the scale of degrees of temperature (thanks to an anonymous reviewer for suggesting this characterization of the data). (5a) entails that there is no \( n > 0 \) such that the temperature has risen to \( n \) degrees. When zero does pick out a scalar endpoint, however, as in (5b), the sentence is again infelicitous.

(5) a. The water here has only ever risen to zero\(_F\) degrees.
   b. #The water here has only ever risen by zero\(_F\) centimetres.

It seems natural to assume that the infelicity of only in (4a) is a special case of the generalization that, when zero picks out a scalar endpoint, it may not associate with only; here zero picks out the minimum of the cardinality scale. This does not fall out straightforwardly from Bylinina and Nouwen’s analysis.

References


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