

## On degree identification superlative NPs and intrinsic scales

In this paper, I will identify and analyze two types of superlative NPs in European Portuguese, distinguished by their denotation and, as we will see below, other formal conditions: on the one hand, NPs like “a montanha mais alta” (‘the highest mountain’); on the other hand, NPs like “a temperatura mais alta” (‘the highest temperature’). The first case is the most common and better described type of superlative NPs. In these NPs, the superlative establishes a function between a group of world entities (e.g. mountains) and a scale of a given property (e.g. height), in order to pinpoint the one which has (or the ones which have) the highest (or lowest) degree of that property (cf. e.g. Heim 1985; Stateva 2005). In the second case, the entity identified by the NP is itself a degree, since the head noun of the superlative NP is a scalar noun, like ‘temperature’, ‘altitude’, ‘age’, ‘volume’, ‘weight’, involving an intrinsic scale (i.e. an intrinsically ordered set of degrees). For the sake of simplicity, we will refer to these two types as “common superlative NPs” and “degree identification superlative NPs”, respectively.

In both cases, the comparison set (Szabolcsi 1986; Gawron 1995; Scheible 2009) includes entities of the type denoted by the NP head, but the scalar adjective does not play the same role in the two types of NP. In the first case, the adjective “high” identifies the property in consideration, and the structure with the superlative operator “-est” (“mais”, in Portuguese) ascribes the maximum degree of the scale to the relevant entity. In the second case, this adjective can be analyzed as merely identifying the scale intrinsic to the noun, and the relevant orientation (e.g. ascending, with “alto”/“high”, descending with “baixo”/“low”), with the superlative operator “mais”/“-est” having a similar role as in the first NP-type.

The following examples show a crucial difference between the two cases. In a predicative structure, with identifying copulatives, a degree nominal expression like “35°” may be the internal argument with degree identification superlative NPs (cf. (1a)), but a degree nominal expression like “2350m” could not be such an argument with common superlative NPs (cf. (1b)). Only a common entity denoting expression like “Aconcagua” could play that role (cf. (1c)).

- (1) a. A temperatura mais alta deste ano foi 35° (Celsius).  
‘The highest temperature this year was 35° (Celsius).’
- b. #A montanha mais alta de Portugal é 2350m.  
‘#The highest mountain in Portugal is 2350m.’
- c. A montanha mais alta da América é o Aconcagua.  
‘The highest mountain in America is Aconcagua.’

In a DRT formalization like the one proposed in Yee (2010) for superlatives, the difference between the two cases would be that the DRS involving an NP like “the highest mountain” would contain a binary predicate condition [high (x, d)], where [d=2350m], while in the DRS involving an NP like “the highest temperature” the superlative relation would be expressed by the condition [high (d', d)], where – crucially and distinctively – [d'=d] (an identity condition possible since the whole NP identifies a degree).

It must be noted that there are some cases, though, where scalar nouns like “temperature” generate NPs of the first type. In other words, the type of noun is not the sole factor determining the subclass of superlative NP. For example, in NPs like “a temperatura mais inesperada” (‘the most unexpected temperature’), the adjective “unexpected” is not redundant as “high” is in (1a), since it establishes a function between temperatures (which correspond to degrees) and some scale of unexpectedness concerning temperature, which is not an intrinsic scale. The superlative relation would, therefore, be formalized as [unexpected (d, d')], but crucially without the supplementary condition [d'=d] (which approximates these structures with the mountain examples mentioned so far, except that the first argument is already a degree d, not a common entity x).

In addition to these data, I will analyze a specific case of common superlative NPs containing scalar nouns like “número” (‘number’) or “quantidade” (‘amount’), and try to correlate them with the binary distinction mentioned above:

- (2) a montanha com o maior número de telescópios  
‘the mountain with the highest number of telescopes’

Superficially, the inner NP “o maior número de telescópios” (‘the highest number of telescopes’), is similar to a superlative NP, inasmuch as it contains a definite article, a noun, an adjective and a superlative operator. However, we can argue that the true superlative NP is actually the outer one (i.e. the whole sequence in (2)), since it could be paraphrased by “a montanha com mais telescópios” / ‘the mountain with the most telescopes’. This NP is of the first type, though it contains within it a noun of the class that generates the second NP-type (e.g. “number” or “amount”, which are scale denoting nouns like “temperature”).

In conclusion, this paper aims to analyze the behavior of scalarity in superlative NPs, proposing a distinction between two main types of superlatives: those that identify entities (of any type) using scales related to some property, and those that identify degrees in connection with an intrinsic scale. This subclassification, as we will show, has intriguing implications both for the semantics and for the syntax of superlative NPs.

## References

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