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Additivity, scalarity and the interactions between them: Beyond 'also' and 'even'

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Abstract

ADDITIVITY and SCALARITY, linguistically encoded by alternative-sensitive operators, are in principle independent of each other: There are additives which are not scalars (e.g. *also / too*), as well as scalars which are not additives (e.g. *only*-like particles).

In this course, we intend to focus on two types of expressions where additivity and scalarity co-exist (sometimes referred to as 'scalar additives'). The first is illustrated by English *even*, and the second by English additive *more*.

We will introduce observations, analyses, and debates in the literature, regarding similarities and differences between these types of expressions with respect to, e.g., types of scales, 'norm-related' effects, accentuation patterns, anaphoricity, and discourse structure. We will take a cross-linguistic stance including, e.g., data from Hebrew, German, Chinese, Russian and African languages. Finally, we will broaden the picture beyond the domain of alternative-sensitive operators considering additivity in the context of expressions of sameness, similarity and difference.

Motivation and description

ADITIVITY and SCALARITY are two features which have been long reported in the semantic-pragmatic literature to be encoded in natural language by alternative (focus and topic) sensitive operators. In principle, these two features are independent of each other: There are expressions which were identified as being additive without being scalar (e.g. English *also / too,* German *auch,* conjunctive additives, etc. (e.g., Horn 1969, Rooth 1992, Krifka 1999, Umbach 2009, 2012, Jasinskaja & Zeevat 2008, Grubic 2018, Szabolcsi 2018), as well as those which have been argued to be scalar without being additive, for example *only*-like particles (e.g.,van Rooij & Schultz 2007, Klinedinst 2005, Beaver & Clark 2008, , Alxatib 2013, Coppock & Beaver 2014, Liu 2017,) or *at least* type expressions (e.g. Grosz 2011, Nakanishi & Rullmann 2009, Biezma 2013). Thorough examinations of the typology of additive and scalar expressions – both within and across languages – revealed rich and fine grained distinctions and interactions with discourse and information structure.

In this course we want to explore the way additivity and scalarity are manifested in natural language by examining expressions for which the two features are claimed to co-exist. Such expressions are referred to in the literature as *scalar additives*. In particular, we will examine two main types (and their variants both within and across languages). The first is illustrated by English *even,* as in (1a) and the second by English additive *more,* or German *noch*, as in (1b, c):

(1)   Last year John published 4 papers
   a.   and this year he even published 5 papers.
   b.   and this year he published 5 more papers.
   c.   und in diesem Jahr publizierte er noch 5 Artikel.

The two types of 'scalar additives' are similar in some senses. For example, in both (a) and (b) above the, prejacent (*John published 5 papers*) is asserted and the salient alternative is presupposed to be true. In both a scale of, e.g., cardinality or spatial length plays an important role in the interpretation.

Another illustration of the similarity between *even*-like and *noch*-like particles is their semantic and pragmatic effects when combined with comparatives, as in (2):

(2) a. Berta is even taller than Adam
     b. Berta ist noch größer als Adam

As noted by Umbach (2009) (2b) with *noch* has a strong norm-related effect, indicating that both Berta and Adam are tall. As noted by Greenberg (2015, 2016) a similar effect is induced by *even* in (2a). However the two types of scalar additives received completely different semantic analyses in the literature. *Even* and its cross linguistic variants was taken to have two presuppositions, namely an additive one, requiring the truth of at least one distinct alternative in C (the contextually supplied set of focus alternatives (though the necessary presence of this presupposition was debated, cf. Kay 1990, Rullmann 1997, Greenberg 20016), and a scalar presupposition, requiring p to be stronger than all other alternatives in C on a relevant scale (the nature of the scale, and the universal quantification are debated as well).

In contrast, *noch /* more was argued to indicate that its prejacent is anaphoric to a salient alternative, and to denote a growth (e.g. of eventualities) along dimensions such as cardinality, spatial length, spatial path, etc. and / or to indicate order of mention (cf. Umbach 2009, 2012, Greenberg 2009, 2010a, 2010b, 2011, Thomas 2010, 2011a, 2011b). A more recent analysis (Thomas 2018) analyzes additive *noch* as indicating the existence of a rising scale segment (in the sense of Schwarzschild 2013)

In the course we will show that despite similarities between *noch* and *even*, there are also important semantic and distributional differences between them. Examining both these similarities and differences in light of the existing theories analyzing these two types of particles will sharpen and deepen our understanding of the way scalarity and additivity are precisely encoded in natural language.

Moreover, the notion of additivity and scalarity raises questions into the more general concepts of sameness, distinctness and similarity, and the way they are encoded in natural language. In general, constructing alternatives to a prejacent *p* requires alternatives to be, on the one hand, distinct from *p*, but on the other hand, similar enough (cf. Umbach 2004 on contrast, as well as Katzir's 2014 algorithm for constructing alternatives). From the perspective of similarity and sameness, it seems that similarity markers are not homogeneous regarding their interactions with additivity and scalarity. For example, some similarity expressions (e.g., *similar* and *same,* but not *such*) are inherently additive (Umbach 2014). Moreover, some similarity expressions (e.g., *similar*, but not *same* and *such*) are gradable (Umbach & Gust to appear). Thus, looking at the interactions with similarity markers deepens our understanding of additivity and scalarity and shows the centrality of additivity and scalarity to wider semantic-pragmatic phenomena in natural language, beyond the meaning and use of well-studied particles like *also, even* and *noch*.

(3) (Otto drives a Mercedes Benz – what about Anna?)
     a. Anna hat auch so ein Auto. / Anna has such a car, too.
     b. #Anna hat auch ein ähnliches / dasselbe Auto. / ?? Anna has a similar / the same car, too.'

In the course, we will introduce empirical observations, analyses, debates and open questions found in the traditional as well as most recent literature. We will take a cross-linguistic perspective taking

into account parametric variations across languages and make use of the large number of results on scalar as well as additive particles in various languages available in the literature (cf. Gast & van der Auwera 2011, Giannakidou 2007, Greenberg 2012, to appear, Miashkur 2017, Grubic 2012, Zimmermann 2014). We will also refer to experimental results supporting the discussion (e.g. Dimroth et al. 2010, Eckard 2011) although this will not be a topic of its own.

Questions to be addressed include
- In what precise sense is each type of expression scalar? What is the nature of the scale involved in each case? Which alternatives are ranked on the scale with these expressions?
- In what precise sense is each type of expression additive? What is 'added' to what in each case? Are the alternatives 'added' with each expressions the same as those ranked on the two types of scales?
- Are additivity and scalarity independent of each other with both expressions? Or perhaps with only one of them?
- Both types of particles were observed to give rise to 'norm-related' / mirative effects. Are these effects the same for both? Are they hardwired into their lexical semantics or derived?
- What is the nature of the interaction with information and discourse structure that the two types of particles have? For example, which of them require an antecedent in the context? What does accentuation of such particles indicate?
- How do expressions of sameness and similarity interact with additivity and scalarity? What does that tell us about the role of additivity and scalarity beyond the field of focus-sensitive operators?

(for references see separate file)