

On the adverbial reading of infrequency adjectives and the structure of the DP

1. As has been observed in the literature (Bolinger 1967, Stump 1981, Larson 1999, Zimmermann 2003, Schäfer 2007), in English certain adjectives modifying event nominals are ambiguous between an attributive reading (1a) and an ‘external’/adverbial reading (1b). As in (1b) the adjective has clausal scope, we have a mismatch between the overt syntactic structure and the semantic structure:

- (1) [DP The / An occasional sailor] strolled by.
 a. Someone who sails occasionally strolled by. = attributive reading
 b. Occasionally, a sailor strolled by. = external (adverbial) reading

The external reading is found with other adjectives of ‘infrequency’, e.g. *sporadic*, *infrequent*, *rare*, and *odd*. Such adjectives occur in singular noun phrases virtually always with the indefinite article, and even if the definite article or a bleached 2nd singular possessive pronoun are used, they are interpreted indefinitely (Stump 1981). Cardinal quantifiers, strong quantifiers and demonstratives are out (Larson 1999). This suggests that such readings involve weak DPs. An influential line of analysis of (1b) (cf. Stump 1981, Larson 1999 and Zimmermann 2003, though details differ) suggests that the adverbial reading involves complex quantifier formation, where the article and the adjective combine to form a complex quantifier. As Zimmermann convincingly argues, this is pluractional. As the adverbial reading involves QR, Zimmermann further argues that it is available with all DP arguments only in languages like English that allow inverse scope of non-subject QPs (2). Thus in e.g. German (3b) is out, as non subject QPs cannot take inverse scope at LF. This is generally attributed to the absence of QR to sentence-initial position in German (4) (German is a scope rigid language cf. Frey 1993, Pafel 1993, Krifka 1998). Call this the inverse scope parameter, (2-4 from Zimmermann 2003):

- (2) PAGAD blows up [the occasional building].
 ‘Occasionally, PAGAD blows up a building.’
- (3) a. [Ein gelegentlicher Kunde] betrat den Laden. (SUBJ)
 an occasional customer entered the shop
 ‘Occasionally, a customer entered the shop.’
 b. # PAGADzerstörte [das gelegentliche Gebäude]. (DO)
 PAGAD destroyed the occasional building
- (4) Ein Verehrer schickte jeder Frau Blumen.
 a/some admirer sent every woman flowers
 NOT: ‘For every woman y, there is an admirer x, who sent y flowers.’

2. In this paper we investigate the properties that enable the availability of an adverbial reading for these adjectives across languages by comparing the English cases to their Italian and Greek counterparts and by revisiting the German data. Unlike English, German and Greek lack such readings altogether; like English, Italian permits them but only with a single determiner, which, however, is not the indefinite article, but *qualche* ‘some’. Since, as we show, there is no strict correlation between the inverse scope parameter and the adverbial reading, we focus on the properties of determiners that are found in such readings. We propose that the adverbial reading is linked to a particular position in a split DP structure and languages differ as to (i) whether they have determiners/quantifiers to realize this position and as to (ii) which determiners will do so. Specifically, the adverbial reading will be present in a language, if weak NPs in this language involve determiners/quantifiers that can be merged at a low level in a split DP structure (Heycock & Zamparelli (H&Z) 2005; cf. Borer 2005). We identify this with the level of PIP, the projection that generates a plural denotation in H&Z’s system.

3. As known, there are a number of environments in which an inverse scope interpretation is possible in German, including the use of rise-fall intonation in examples such as (4) and constructions in which overt movement has applied, see Wurmbrand (2008) for a recent discussion. The inverse scope parameter predicts that in exactly these environments where inverse scope is possible the adverbial reading should also be available. However, this is not borne out. Overt object movement or the use of different intonation in (4) do not yield an adverbial reading for native speakers, contra Zimmermann (2003). We conclude with Schäfer (2007) that German lacks the adverbial reading altogether.

- (5) Den/einen gelegentlichen Kunden sah Maria
 the/a occasional customer-acc saw Maria

4. Turning to Italian and Greek, note that in these languages adjectives can appear both in pre- and post-nominal position. In Italian, prenominal placement of ambiguous adjectives correlates with a strictly unambiguous interpretation (adverbial), and post-nominal placement correlates with ambiguity

(adverbial and intersective, from Cinque 2007); in Greek the postnominal placement of the adjective is strictly intersective, and obligatorily preceded by a determiner in definite NPS, while the prenominal one is ambiguous between the two readings (from Campos & Stavrou 2004; cf. Kolliakou 2004):

- (6) Un **buon** attaccante non farebbe mai una cosa del genere (unambiguous)
 i. 'A forward good at playing forward would never do such a thing' (nonintersective)
 ii. '#A good-hearted forward would never do such a thing' (intersective)
- (7) Un attaccante **buono** non farebbe mai una cosa del genere (ambiguous; both i & ii)
- (8) a. i **orea** horeftria 'the beautiful dancer' (ambiguous; both i & ii)
 i. the dancer is beautiful. ii. the dancing is beautiful.
 b. i horeftria **i orea** 'the dancer the beautiful' (unambiguous, only i)

Greek and Italian differ from one another in that Italian has been argued to clearly allow inverse scope (Frascarelli 2008 for a recent discussion), while the status of Greek is controversial. For some speakers it is scope-rigid, for others not (cf. Alexiadou & Anagnostopoulou 1998, Baltazani 2002). The inverse scope parameter predicts that Italian should be like English, and Greek either like English for some speakers or like German in Zimmermann's analysis for others. But, the adverbial reading is completely out in Greek, even for those speakers that allow inverse scope of non-subject QPs. In Italian, the adverbial reading is available, but only when two structural conditions are met: i) the adjective is in prenominal position and adjacent to N (the string NAdj has no external reading) and (ii) the determiner is *qualche* 'some', which is not specified for gender and selects a singular NP, but can be plural in meaning (see Zamparelli 2008).

(9)a. Solo qualche occasionale cliente entrava nel suo negozio.

Only the/a/some occasional customer entered the shop.

Occasionally, a customer entered the shop. (attributive reading also available)

b. Sara in genere non ama agghindarsi, ma a volte indossa qualche raro gioiello.

Sara doesn't usually doll up, but sometimes she wears the/a/some rare jewel.

Sara rarely wears a jewel / some jewels. (attributive reading also available)

(9a-b) lose the adverbial reading, when definite articles (singular and plural), indefinite articles and the singular meaning of *qualche* are used. *Qualche* can be preceded by the indefinite article in (9), *un-qualche*, but again its interpretation changes. It shifts to a singular meaning and the adjective loses the adverbial reading. Zamparelli (2008) argued that *qualche* + N sequences are weak DPs; for instance, they can occur in existential sentences, which are in with weak DPs but out with strong DPs (10):

(10) a. C'è un grosso problema. b. C'è qualche grosso problema c. # Ci sono tutti i grossi problemi

There is a big problem. There are (gramm: is) some big problem(s). There are all big problems

5. The empirical domain raises three questions. (i) Why is the adverbial interpretation limited to certain determiners? (ii) Why do English and Italian differ with respect to the determiner that is used to license these readings? (iii) Why do German and Greek lack the adverbial reading? We argue that the answer to all these questions lies in the (complex) determiner/quantifier structure of the languages under investigation. Building on H&Z (2005), cf. Borer (2005) and others, we assume that different determiners/quantifiers are introduced in different positions in a structure like (11):

(11) [DP definite articles/demonstratives/universal quantifiers [NumP numerals [PIP operators [NP]]]]

We propose that a language will allow adverbial readings, if its determiners can be first merged at the level of PIP. PIP is an operator projection that allows a plural denotation to be constructed. Zamparelli (2008) argued in detail that *qualche* is introduced in PIP and then raises to D^o via Num^o. But its English counterpart 'some' is introduced in D. Cardinal numerals in English as well as the indefinite article in Italian are introduced in NumP (Berstein 1993, Borer 2005). Following H&Z (2005), the English indefinite article can spell out Pl^o, and so can the definite article which is feature-neutral. Demonstratives are generally merged in DP (cf. Alexiadou Haegeman & Stavrou (AHS) 2007). This explains the restrictions on the determiners. Low merging of determiners enables the complex predicate formation, as non-restrictive/adverbial modifiers are introduced between NumP and PIP in Zamparelli (2008). The quantifier in Pl^o combines with the adjective, analysed as occupying a head position (Abney 1987, Bernstein 1993, Larson 1999) and they both move to D. Greek and German differ from English and Italian in that they lack determiners that can be merged in PIP (see Giannakidou 2004 for Greek). The indefinite article is a cardinal numeral, and the definite article realizes D^o (or Agr^o) in both languages (AHS 2007, Cinque 2007). Thus the pluractionality observed in Zimmermann arises as the result of combining a 'plural' quantifier with an infrequency adjective.