A Note on Attributive Adjectives, Distributivity, and Comparison Classes

Schwarzschild (2006, 2009) observes that adjectives like *heavy* are obligatorily distributive when attributive, but not when predicative:

- (1) The boxes are heavy
 - $\sqrt{distributive}$ (each box is heavy); $\sqrt{collective}$ (the boxes are heavy as a group)
- (2) The twelve heavy boxes
 - $\sqrt{distributive}$ (each box is heavy); * collective (the boxes are heavy as a group)

His explanation is that a non-monotonicity requirement on attributive modification rules out the collective reading. The dimension of weight is not allowed to be monotonic on the part-whole relation determined by the noun. The collective reading would be monotonic (the smaller a subset of boxes, the less it weighs), therefore, the adjective can receive only a distributive reading, which is non-monotonic on the part structure of the noun (the weight of individual boxes does not vary depending on the size of any subset of boxes).

Proposal: We take non-monotonicity to *follow* from the independently determined distributivity of certain attributive adjectives. In addition to dimension adjectives (e.g. *heavy*, *tall*), evaluative adjectives (e.g. *pretty*) also result in obligatory distributive readings when in attributive position but can be collective when predicative. This is so, we suggest, because, when attributive, dimension and evaluative adjectives compose with a degree head DEG that selects for a covert *for*-phrase, which denotes the comparison class for the adjective. The *for*-phrase contains a type noun which is elided under identity with the head noun, as in (3). The null *for*-phrase determines distributivity:

- (3) The twelve heavy (for a box) boxes.
- $\sqrt{distributive}$ (each box is heavy <u>for a box</u>)
- * collective (the boxes are heavy for a box)

Predicative adjectives do not merge with a syntactic *for*-phrase, and instead have a variable set by context, which allows for the weight of the boxes to be interpreted relative to either *box* or *boxes* (or, for that matter, other entities). Both collective and distributive readings are available.

Evidence: To motivate the syntactic distinction between attributive and predicative dimension and evaluative adjectives, first, we look to the observation that these adjectives are interpreted relative to a comparison class that can be specified in an overt for-phrase (Klein 1980, Kennedy & McNally 2005, Kennedy 2007, a.o.).

- (4) a. John is tall for a man. b. That painting is beautiful for a painting.
- Even when a *for*-phrase is non-overt, a standard observation takes dimension and evaluative adjectives to be interpreted relative to a comparison class (see Kennedy 2007). In the absence of an overt *for*-phrase, both attributive, (5), and predicative adjectives, (6), have an interpretation that is dependent on a comparison class. There is a distinction between the comparison classes with predicative and attributive adjectives, however, where attributive adjectives have an interpretation that is dependent upon the head noun and predicative adjectives have a more 'open' interpretation, more dependent upon context (Higginbotham 1985: 563).
- (5) That is a big butterfly. That is a butterfly, and it is big for a butterfly
- (6) That butterfly is big. That butterfly is big (for an X [not necessarily a butterfly]) We take the for-phrase to be syntactically present (and silent) in the case of attributive dimension and evaluative adjectives. Past proposals argue that for a man modifies the adjective directly, restricting its domain, and then the degree head merges.
- (7) [DEG [big for a man]] (cf. Kennedy 2007; Bale 2008; Schwarz 2010) With this constituent structure, the adjective and for-phrase [tall for a man] shouldn't be incompatible with the degree head containing a Measure phrase, i.e. six feet. Instead, we propose that Measure phrases are introduced by a degree head, MEAS (cf. Kennedy & Svenonius 2007)

that is in complementary distribution with another type of head, DEG, whose presence is marked

by the silent for-phrase: (8) [[DEG for a man] big] (9) [DEG] = $\lambda P_{\langle e,t \rangle}$. $\lambda G_{\langle dt,et \rangle}$. λD . λx : P(x). $\exists D'$ [$G(D')(x) \wedge D' \subseteq D \wedge D \subseteq S_{(P,c)}(G)$] $\llbracket for \ a \ house \rrbracket = \lambda x. \ x \ is a house$ $[big] = \lambda D_{\leq d}$, λx , x's size $\in D$

Evidence for this constituent structure comes from the observation that, in addition to forphrases, as in (10), modification by measure phrases, as in) John is tall for a man. (11), permissible. However, these two types of adjective modification cannot co-occur, (11):

(10)John is tall for a man. (11) John is six feet tall. (12) *John is six feet tall for a man.

Now, when looking at plural nouns such as those in (1) and (2), the for-phrase takes a noun which sets the comparison class and derives the effect seen with GAA. More specifically, we propose that the adjective merges underneath the plural phrase (#P, cf. Borer 2005), and so, the identity condition on ellipsis resolution dictates that the silent noun in the for-phrase is not structurally specified for number. Then, if a plural phrase merges higher, we can obtain the plural noun. The structure is as follows:

(13) [Plural Plural NP AP DEG for a box heavy box]

We further observe that higher syntactic placement of the attributive adjective results in the return of the collective/distributive ambiguity (Ouwayda 2011).

The heavy twelve boxes $\sqrt{distributive}$; $\sqrt{collective}$

On the collective reading, (13) does not meet the non-monotonicity requirement, which fits better the view that this requirement is a consequence of the specific syntax and semantics of attributive modification rather than a constraint that rules out an otherwise potentially available reading. To account for the return of collective readings with higher placement of the attributive adjective (cf. (3)), we propose that [[DEG [for N]] heavy] moves above the plural phrase, and the noun is elided under identity with either a type noun (not specified for number) or a noun specified for number. Ellipsis of the plural noun in the for-phrase is licensed based on the assumption that the antecedent should not contain the ellipsis site, and so [DEG for boxes heavy] moves outside of the Plural head. Attachment outside of the Plural operator allows for the collective reading (see 14), and attachment inside of the Plural operator allows for the distributive reading (as in 13).

(15) [[AP [DEG for boxes] heavy] [Plural Plural [NP box]]

Evaluative adjectives like *pretty* similarly do not fit the view that non-monotonicity derives the requisite distributivity. In (15), a collective reading of pretty would meet the non-monotonicity requirement and yet such a reading is not allowed:

(16) Context: ugly pieces of gravel come together to form a beautiful mosaic #The pretty rocks formed a mosaic.

We propose that the requisite distributive reading with attributive adjectives stems *independently* of non-monotonicity, derived from the presence/absence of a for-phrase, as above, and that nonmonotonicity of is a consequence of distributivity.

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