Merge Early and Be Weak, Merge Late and Be Strong

The two readings of equatives. Equatives allow a strong ("exactly as") and a weak ("at least as") interpretation (e.g., Horn 1972, 2001, Klein 1980). An utterance such as (1) can be countered by (2a), or confirmed by (2b) illustrating the two readings. It is standard to account for the two readings (which generalize to other scalar items such as numerals, some, or) by assigning scalar items weak semantics and deriving the strong interpretation after the calculation of the semantic content of the utterance, through reasoning about the pragmatics of conversations. Assuming that speakers make the most informative contribution possible (Grice 1968’s Maxim of Quantity), and utilizing the fact that the two readings are scalarly ordered, the strong reading comes out as a scalar implicature (Horn 1972, 2001, Klein 1980). The essence of the standard approach to the interpretation of scalar items - weak semantic content coupled with a pragmatic inference - is preserved in the most recent treatments of scalar phenomena which argue for a local computation of the relevant implicatures followed by subsequent semantic composition (Chierchia 2002, Kratzer 2003). Fox (2003) approaches the issue from a different perspective. He proposes that the strong interpretation does not have a pragmatic source, i.e., is not an implicature, but is the result of the optional merge of a covert exhaustivity operator, with the weak semantics of the scalar items retained.

The proposal in a nutshell. We propose that the scalar interpretation of equatives is syntactically determined, thus adopting a position similar to Fox’s. However, we explore an alternative that builds the strong interpretation into the semantics of as. Specifically, we propose the following: (i) as means “equals”, i.e., it has strong semantics (see (3)); and (ii) as can be composed with its first argument - the degree clause - in two positions: in-situ or in a post-QR scope position (see (4)).

Our first proposal - that as has strong semantics - has not been explored before, as far as we know. Previous approaches have all posited that as has weak semantic content, i.e. it means “at least equals”. Our second proposal is an extension of Bhatt and Pancheva (2002), who argues that than-clauses in comparatives are always merged countercyclically, after the degree head -er has moved to a scope position. We relate the difference in merger options between as- and than- clauses to the different semantics of the as and -er degree heads. The two proposals, combined with an assumption about the mechanism of interpreting copies of moved expressions (Fox 2001, 2002), lead to the following result: the position of merger of the degree clause determines whether the interpretation of the equative is weak or strong.

Deriving the scalar interpretations. We assume with Fox (2001, 2002), that copies of moved quantificational phrases have to be taken into consideration during the calculation of meaning at LF (rather than being converted to simple variables). This results in the restrictor of the quantificational determiner being interpreted inside the quantifier’s scope. Specifically, Fox proposes that copies of move quantificational phrases are converted to definite descriptions with a free variable (see (5)).

The consequences for equatives are as follows. If the as-clause is merged to the degree head as in-situ, QR would create a structure where the as-clause has to be interpreted twice - once as a restrictor of as (in the head of the A’-chain created by QR) and for a second time inside the second argument of as (see (6)). If, on the other hand, the as-clause is merged late, after the degree head has already undergone QR, there will be no copy of the restrictor of as to interpret inside the second argument of as (see (7)).

Computing the meaning of the two structures - with (cf. (8a)), and without (cf. (8b)), a lower copy of the as-clause - straightforwardly yields the weak and strong readings of equatives, given the meaning of as defined in (3). Assuming a meaning for -er as in (9), a low merger of the than-clause would result in a contradiction as in (10a) (derived after interpreting a copy of the than-clause inside the scope argument), whereas a late merger of the than-clause would result in a contingent statement as in (10b). This confirms that the different semantics of as and -er are behind the different merger options for as- and -er- clauses.

Crosslinguistic support for the proposal. In Slavic, adjectival equatives are formed in two ways: (i) as correlative constructions, i.e., the as-clause is a free relative of degrees, which binds a proform in the main clause (see (11a)); and (ii) by a strategy similar to the one in English (see (11b)). Nominal equatives are only formed as correlatives, the proform being obligatory (see (12)). The correlative option (11a and 12), with no copy of the as-clause inside the main clause, only has a strong “exactly as” reading. This is confirmed by tests such as placement in downward entailing contexts, which are known to suspend the strong reading in English (e.g., Chierchia 2002). In contrast, the option in (11b), where a low merger of the as-clause is available, has the same two interpretations as the English equative.
(1) (I think that) Bill is as tall as Ann is.

(2) a. No he is not, he is taller. ("exactly as")
   b. Yes, in fact I know he is taller. ("at least as")

(3) \(as(A)(B) = 1 \text{ iff } A = B\) where \(A, B\) are sets of degrees e.g.
   \([A] = \lambda d[\text{Ann is } d\text{-tall}],\)
   \([B] = \lambda d[\text{Bill is } d\text{-tall}]\)

(4) a. \([\text{as [Ann is tall]}], \text{ [Bill is } as [\text{Ann is tall}]] \text{, tall}\)
   (early merger (to the in-situ as))
   b. \([\text{as [Ann is tall]}], \text{ [Bill is } as_{i} \text{ tall}]\)
   (late merger (to the QR-ed as))

(5) \(\text{Det Predicate } \rightarrow \text{ Det [Predicate } \lambda y(y = x)] \rightarrow \text{ the [Pred } \lambda y(y = x)]\)

(6) a. \([\text{as [Ann is tall]}], \text{ [Bill is } as [\text{Ann is tall}]] \text{, tall}\)
   b. \(\text{as (A) } [\lambda d \text{ [Bill is } \text{ the [A } \lambda d_{i} (d_{i} = d)] \text{ tall}]]\)
   c. \(\text{as (A) (A } \cap \text{ B)}\)

(7) a. \([\text{as [Ann is tall]}], \text{ [Bill is } as_{i} \text{ tall]}\)
   b. \(\text{as (A) } [\lambda d \text{ [Bill is } d\text{-tall}]]\)
   c. \(\text{as (A) (B)}\)

(8) a. \(\text{as (A)(A } \cap \text{ B) } = 1 \text{ iff } A = A \cap B \text{ iff } A \subseteq B\)
   ("at least as" reading)
   b. \(\text{as (A)(B) } = 1 \text{ iff } A = B\)
   ("exactly as" reading)

(9) \(-er(A)(B) = 1 \text{ iff } A \cap B\)

(10) a. \(-er(A)(A \cap B) = 1 \text{ iff } A \subseteq A \cap B\)
    b. \(-er(A)(B) = 1 \text{ iff } A \subseteq B\)

(11) a. Boris e tolkova visok [kolkoto e i Ana]. (Bulgarian)
        Boris is that-much tall how-much-the is and Ana
        ‘Boris is exactly as tall as Ana is.’
    b. Boris e visok [kolkoto e i Ana]. (Bulgarian)
        Boris is tall how-much-the is and Ana
        ‘Boris is as tall as Ana is.’

(12) Boris ima *(tolkova) deca [kolkoto i Ana]. (Bulgarian)
    Boris has that-many children how-much-the and Ana
    ‘Boris has exactly as many children as Ana does.’