The Functional Category COM(PARISON) and its Double Complement Structure

Introduction and Preliminary Version of Suggestion: As for the structure of the underlined part in (1), at least three views have been suggested, as shown in (2a-c) where X = gradable {A/Adv} or {*many/much*}, and PP* = the *than* phrase. Under (2a) the degree word *more* (Deg) forms a unit with a gradable X(P); under (2b) it forms a unit with PP* which is to be obligatorily extraposed; and under (2c) it is considered to form a unit with X and also with PP* in a certain way, as shown in (2ciii).

(1) Mary is more beautiful [$_{PP*}$ than Judy (is)]. (phrasal or clausal comparative)

(2) a. [$_{ß}$ [*more* X(P)] PP*] (cf. Larson (1988), Abney (1987), Corver (1990,1997), Kennedy (2003),...)

b. (i) [$_{ß}$ [*more* PP*] X(P)]] ==> (ii) [$_{ß}$ [*more* t_i] X(P)]] ... PP*$_i$ (obligatory extraposition)
(cf. Chomsky (1965), Selkirk (1970), Bresnan (1973,1975), Carson (1977), Keenan (1987), Heim (2001), Kennedy (2007), Grosu and Horvath (2006); cf. also Klein (1980), Larson (1991), Izvoraski (1995a), Lechner (2004), ...)

c. (i) [$_{ß}$ *more* X] => (ii) [*more*$_i$ X]... *more*$_i$ (QR of *more*) =>
(iii) [*more*$_i$ X] ... [*more*$_i$ PP*] (late merger of PP*) (cf. Bhatt and Pancheva (2004))

The view in (2a) explains word order with no cost, and also explains (constituency test) data like (3-4), while the views in (2b-c) may not be able to properly explain them where PP* is considered obligatorily separated from the category ß.

(3) a. [Happier than she had ever been before], Sue picked up her suitcase and boarded the plane.
(cf. (48) in Napoli (1983))

b. Bill speaks [more fluently than Mary] but [less fluently than Nichole]. (where X = A or Adv)

(4) a. John gave [more books than he had given to Sue] to his best friend Peter.

b. [How many more records than Sue owns] will he buy? (where X = *many*)
(cf. (20b-c) in Corver (1993); cf. also (6b) and (8c) in Lechner (2001))

Korean data like (5a-b) also suggest that in Korean (a head-final language), the counterpart of the underlined part in (1) forms a unit and should be analysed as [$_{ß}$ PP* {*more/less*} X(P)], as in (2a).

(5) a. ku-nun [con-pota-nun te ppalukey] kulena [bil-pota-nun tel ppalukey] ttuynta
he-Top [John-than-Con more fast] but [Bill-than-Con less fast] run
'He runs [more fast than John] but [less fast than Bill].' (lit.)

b. A. ne-nun nwukwu-pota te ppalukey ttuy-nayo? B. [con-pota te ppalukey]-yo.
you-Top who-than more fast run-Q [John-than more fast]-is
A. 'Than whom do you run more fast?' (lit.) B. (It's) [more fast than John]. (lit.)

However, further Korean constituency test data show that the internal structure of the category ß in (2a) may be considered either (6a) or (6b): Data like (7) suggest that *te* ('more') forms a unit with X(P), as in (6a) (cf. (2a)), but data like (8) suggest that it forms a unit with PP*, as in (6b) (cf. (2bi)).

(6) a. [$_{ß}$ PP* [*te* X]] b. [$_{ß}$ [$_{α}$ PP* *te*] X] c. (6b) ==> ... PP*$_i$ ... [$_{ß}$ [$_{α}$ t_i *te*] X]

(7) con-nun bil-pota [te yuchanghakey] kulena [tel cikselcekulo] malhanta
John-Top Bill-than [more fluently] but [less frankly] says
'John says [more fluently] but [less frankly] than Bill.' (*te* + X(P); (6a))

(8) ku-nun [con-pota-nun (hwelssin) te] kulena [bil-pota-nun (hwelssin) tel] yuchanghakey malhanta
he-Top [John-than-Con far more] but [Bill-than-Con far less] fluently says
'He says [(far) more than John] but [(far) less than Bill] fluently.' (lit.) (PP* + *te*; (6b))

Given that Korean employs scrambling, data like (7) can also be explained under (6b) since PP* can be considered to be scrambled, as shown in (6c), but under (6a), data like (8) may not be explained in terms of scrambling: The string PP*-*more* can function as a unit only when X(P) is scrambled out of ß (cf. (9)), but unless PP* is postposed, X(P) or *te* ('more') can never precede PP* in Korean (cf. (10a-c)).

(9) (6a) ==> * ... X(P)$_i$ ... [$_{ß}$ PP* *te* t_i] (K)

(10) a. *X(P) - **PP*** - *te* (cf. (9)) b. **te* - **PP*** - X(P) c. **te* - X(P) - **PP***

To explain the unacceptable word orders in (10a-c) under (6b), the following can be suggested: *te* and X cannot be scrambled across PP* in Korean simply because they both function as heads, which implies that the projections ß and α in (6b) are the projections of X and *te*(Deg), respectively, and that PP* and DegP are the complements of *te*(Deg) and X, respectively, as shown in (11a-b) where [+g] = [gradable]. Since *more* always precedes X[+g] in English, the approach in (11a-b) can suggest that the *more*(Deg)-to-X[+g] head movement process applies in English, as shown in (11c), and as predicted under (11c), *more*(Deg) and X[+g] form a unit in English, as shown in (12a-b) (cf. also (7) and (6c)).

(11) a. [$_{XP[+g]}$ [$_{DegP}$ PP* *te*] X[+g]] (K; head-final)
b. [$_{XP[+g]}$ X[+g] [$_{DegP}$ *more* PP*]] (E; head-initial) c. [$_{XP[+g]}$ *more*$_i$ X[+g] [$_{DegP}$ t_i PP*]] (E)
(12) a. He speaks [more elegantly] but [less fluently] than John.
b. He is [more intelligent] but [less handsome] than John.

Final Version of Suggestion: Although word order and constituency data discussed so far can be properly explained under the approach in (11), a theoretical and/or empirical problem can be raised since a lexical category X[+g] like gradable A or Adv need be assumed to select a complement like DegP (which may have no relevant theta-role). In fact, as shown in (13a-b), in Korean and English, X[+g] may select a complement other than a DegP, and the complement appears in the complement position of X[+g].

(13) a. con-un bil-pota te **ku-lul** twulyewehanta (K)
John-Top Bill-than more **he-Acc** is.afraid
b. John is more afraid **of him** than Bill (is). (E)

To explain data like (13a-b), I first suggest that there is a functional category Comparison (=COM) whose features are [+comparison, +gradable, +/-incremental] (cf. *more/less*) which is different from the functional category Deg that selects only the *than* phrase (PP*). As for the nature of COM, I further suggest (14a-c): (14a) The functional category COM selects gradable XP[+g] and DegP (cf. the co-occurrence of a gradable X and a DegP (whose head selects PP*)). (14b) The complements of a functional category may be syntactically realized differently from those of a lexical category: Both DegP and XP[+g] appear in complement positions in the way shown in (15) where (i) COM1 and COM2 are projections of COM which are of the same (intermediate) level of projection while COM2 also functions as a maximal projection; and (ii) YP is a complement of X[+g]. (14c) The XP[+g] that is selected by COM is defective in that it lacks its Spec position so that it may not have its own degree modifier like *very* (cf. defective AP, AdvP, or *many/more* phrases; cf. also Izvoraski (1zvoraski (1995)).

(15) **A double complement structure**: [$_{COM2}$ [$_{DegP}$ PP* *te*] [$_{COM1}$ [$_{XP[+g]}$ (YP) X[+g]] COM(0)]] (K)

The structure in (15) implies that a functional category COM triggers a particular (shell) structure, which is eventually responsible for the sentence form of the comparative construction: In (15), COM is a null morpheme, which is linked to X[+g] via a X[+g]-to-COM head-linking process (for checking reasons); and data like (16), whose word order and constituency properties are expected under (15), confirm that the present shell/double-complement approach in (15) is on the right track.

(16) ku-nun [con-pota te [kunye-lul twulyewha]]-kena [bil-pota te [kuyne-lul cohaha]]-kena haci-nun anhnunta
he-Top [John-than more [**she-Acc** afraid.of]]-or [Bill-than more [**she-Acc** fond.of]]-or is-Con not
'He is not [more afraid **of her** than John] or [more fond **of her** than Bill].' (where X = A)

Under the present view (and Checking Theory), English comparatives can also be suggested to have a double complement structure given in (17) where two different morphological realizations are exhibited, which implies that the morphological realizations of COM and Deg may differ from language to language. Data like (18) also suggest that X[+g] moves to COM so that the string *more*+X[+g] may form a unit, excluding YP as well as PP*. The structure in (17a) predicts that *more*-XP and *more*-XP-PP* each form a unit, and the prediction seems to be borne out, as shown in (19a-b).

(17) a. [$_{COM2}$[$_{COM1}$ COM(*more*) [$_{XP[+g]}$ X[+g] (YP)]] [$_{DegP}$ Deg(0) PP*]] (cf. *more* - X - PP*)
b. [$_{COM2}$[$_{COM1}$ COM(0) [$_{XP[+g]}$ X[+g]-*er* (YP)]] [$_{DegP}$ Deg(0) PP*]] (cf. X-*er* - PP*) (E)
(18) John is [more surprised] and [more disappointed] **at the news** than Mary (is).
(19) a. John is [$_{COM1}$ more afraid **of her**] but [$_{COM1}$ less critical **of her**] than Tom (is). (cf. (12))
b. John is [$_{COM2}$ more afraid **of her** than Bill] but [$_{COM2}$ less afraid **of her** than Tom]. (cf. (3-4))

Further Empirical Advantages and Discussion: The present view has some further empirical advantages: First, the notion of double complement structure can be properly extended to explain the syntax of so-called result clauses (cf. Larson (1991), Abney (1987), and Baltin (1987)) as well as *as-as* sentences and superlative sentences. Second, some various properties of comparatives sentences shown in (20a-d) can be either predicted or plausibly explained: (20a) cases of multiple degree modification (cf. *much more beautiful/10 feet taller*; Kennedy and McNally (2005)); (20b) a possibility of the co-occurrence of *more* and *-er* (cf. Corver (2005)); (20c) cases of multiple *than* phrase (cf. Napoli (1983), Bhatt and Pancheva (2004), Kennedy and McNally (2005)); (20d) cases of multiple *more/-er* (cf. Corver (1993)).

During the discussion, while examining some apparent empirical problems (cf. (i) in fn.4. Corver (2005), for example), I also examine previous shell-approaches (cf. Larson (1991) and Izvoraski (1995)) to show that they have both empirical and theoretical problems (especially raised by Korean data).