Degree Phrases[*]

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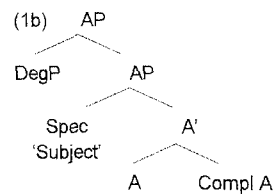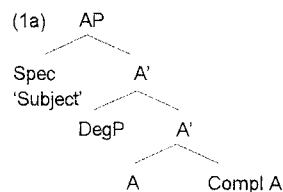escri@telecable.es

ABSTRACT

The ternary-branching analysis of DegPs with CP complements offered in Abney (1987) is underivable by Merge, as is Jackendoff's (1977) earlier one, Kayne's treatment of phrases containing Degs as specifiers of CPs headed by 'than' or 'that' is semantically implausible, and the classical Deg S' analysis of Smith (1961), Bresnan (1973), Bowers (1975), or Baltin (1987), and LF-oriented proposals like Rouveret (1978) or Guéron & May (1984) all require obligatory adjunction to XP (Comparative/Result Clause Extraposition), an operation which, according to Kayne (1994) and Chomsky (1995, 1998) should not exist. At present, then, doctrine concerning how such CPs are derived is badly needed. This article claims that a solution to this long-standing problem can be reached if comparative and result clauses are complements to Degs, as in the classical analysis, whereas the APs (AdvPs, QPs) that accompany them are their specifiers, and shows how the surface order visible at P follows, without invoking Extraposition, if DegPs are generated as lowest complements of Larsonian projections and Degs are allowed to rise in order to c-command the 'degree' arguments (Corver 1997) associated with gradable A's, Adv's and Q's and avoid violations of the Head Final Filter of Williams (1982).

1. The problem

1.1. The traditional analysis: DegPs as specifiers or adjuncts

The relation between gradable adjectives, adverbs, and quantifiers, degree words like 'as', 'so', 'how, 'too', 'more', 'less', 'enough', etc., and the comparative and result clauses Degs introduce is not yet well understood. The traditional wisdom on the topic during the sixties, seventies and early eighties was that the Deg word projected a maximal projection of its own that was a specifier of the adjective[1] (e.g., in Smith 1961, Chomsky 1967, Bresnan 1973, Bowers 1975, Selkirk 1977, Jackendoff 1977, Rouveret 1978, Guéron & May 1984, Baltin 1987), at a time when DetPs were considered specifiers of NPs, AdvPs specifiers of VPs, etc.

    The specifier status of all such phrases, however, became problematic in the late eighties when syntacticians adopted the XP-Internal Subject Hypothesis/Lexical Clause Hypothesis (Fukui & Speas 1986, Sportiche 1988, Speas 1990, and subsequent work), for the XPISH/LCH required the specifiers of lexical projections to be free to lodge the highest arguments of heads. Under the then current unique specifier hypothesis, the obvious adjustment was to downgrade the Deg phrase to the status of an adjunct of the adjective dominated by a recurring A' or AP node, leaving the specifier slot available to be occupied by the subject, i.e., to assign to APs one of the structures in figure (1a,b):

(1a)   AP
        /   \
    Spec   A'
   'Subject' / \
          DegP   A'
                 / \
                A   Compl A

(1b)   AP
        /   \
    DegP   AP
             / \
          Spec   A'
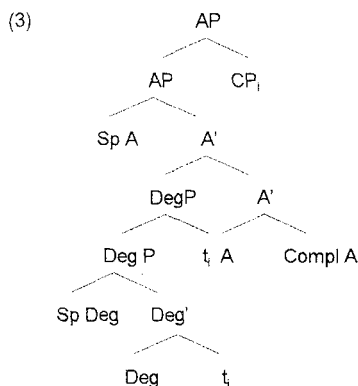   'Subject' / \
                 A   Compl A

    Another long-standing problem with the analyses of DegPs as specifiers (or adjuncts) derives from the fact that degree words obviously select complement clauses introduced by 'as', 'than', and 'to' (cf. Smith 1961, Bresnan 1973, Bowers 1975, Selkirk 1977, Rouveret 1978, Guéron & May 1984, Baltin 1987)[2] which, nevertheless, cannot surface between the degree word and the adjective, as (2) shows.

(2)   a. *That was a more than we had expected expensive service.
       b. *That service was more than we had expected expensive.

c. *We obtained too to be true good results.

d. *The results were too to be true good.

This restriction was noted in Smith (1961), Jackendoff (1977), Baltin (1987), and Abney (1987), among others, was given a name in Emonds (1976, 1985) (the 'surface recursion restriction'), and is nowadays best known by the name Williams (1982) gave it, the 'Head Final Filter', for it seems to require certain phrases[3] to have their heads at their right edge. The HFF has never been investigated in detail, but it has widespread consequences throughout the grammar.[4] As a result of the HFF, whether DegP is a specifier or an adjunct of the adjective, cf. figure (1), the 'as', 'than' and 'to' CPs have to be extraposed rightwards, and adjoined first to their DegP, and then to the AP (AdvP, or QP), as shown in figure (3):[5]

(3)

```
                    AP
               AP        CP_i
           Sp A    A'
               DegP        A'
         Deg P    t_i A   Compl A
     Sp Deg   Deg'
             Deg    t_i
```

In current minimalist work, however, there has been a substantial effort to eliminate adjunction to XP altogether,[6] although extraposition phenomena seem so far to resist analysis in any other terms (see Bühring & Hartmann 1997).

The alternative analysis occasionally considered in the literature (e.g., in Jackendoff 1977) is to base-generate the CP complements directly as adjuncts of the adjective (adverb or quantifier),[7] but although that proposal gets the surface order right in simple cases,[8] it requires relaxing the crucial hypothesis of Locality and is gratuitous from the semantic point of view.[9] The existence of adjuncts, anyway, has always been a pain in the neck to X-bar syntacticians, for they do not fit in the system at all (see Speas 1990, Chametzky 2000), so the temptation in recent work from Larson (1988) to Kayne (1994) and Cinque (1999) has been to reduce them to specifiers of ad hoc functional heads.[10]

## 1.2. Degs as heads: Abney (1987) and Corver (1997)

The only alternative proposal that has attracted attention at all, however, was initially presented in Abney's (1987) dissertation, where just as determiners were reanalysed as heads selecting NPs (the DetP Hypothesis), pre-nominal adjectives were taken to be heads

selecting their NPs as their complements, and degree words, in their turn, were considered heads taking AP, AdvP, and QP complements, i.e., in the case that concerns us here, the structure assumed by Abney is presented in (4):

(4)   DegP
        ╱‾‾╲
    Sp Deg   Deg'
            ╱‾‾╲
        Deg   AP (AdvP, QP)
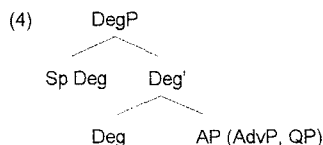
Abney's hypothesis has recently been adopted and refined by Corver (1997) under the name 'Split Deg System Hypothesis'. Corver follows Bresnan (1973) in distinguishing between Det-like degree words like 'as', 'so', 'the', that' or 'too', and Q-like ones like 'more', 'much', 'less' or 'enough', and in postulating a Q-like Deg (possibly filled by dummy 'much') as an intermediate head between the Det-like Deg words and the adjective, but the basic structure he assigns to DegP is still Abney's in figure (4).

Abney's solution, however, faces several problems that require relaxing some of its crucial assumptions in substantial ways (see criticism in Sadler & Arnold 1994). The only one I will discuss here is the structure it attributes to DegPs when they have the CP/PP complements they usually c-select. According to Abney, the structure is (5), but (5) faces a twofold problem: 1) a functional category, such as Deg, f-selects a specific complement, but cannot take a second complement, so if the complement of Deg is the AP, the CP must be reanalysed; and 2) under current 'bare phrase structure' (i.e., Merge), non-binary branching structures like (5) just cannot be generated at all.

(5)   Deg'
             ╱‾|‾╲
        Deg AP CP
      more expensive than we thought
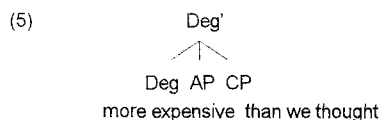
Corver's otherwise impressively detailed treatment does not mention the status and structural position of comparative CPs and PPs, so I assume he adopts the problematic structure (5) along with the general features of Abney's analysis.

1.3. The clause as head: Kayne (1994)

To my knowledge, the only other recent proposal in the literature is Kayne's suggestion in Kayne (1994) to treat phrases containing Deg words as specifiers of the comparative or result clause, i.e., for Kayne, 'We have so few students nowadays that some teachers have been fired' is a CP, and the clause 'we have so few students nowadays' is its specifier. Such an analysis obviously gets the surface order right, but is syntactically and semantically implausible.[11] First, it does not capture the basic fact that 'than' and 'that' clauses depend on the presence of the Deg words 'more' or 'so', not the other way round, for the CP may be absent (cf. 'Now I earn much more', 'You smoke too much'), whereas

it is completely impossible in the absence of the Deg (cf. '*Now I earn than I earned before', '*We have few students this year that some teachers have been fired'). Secondly, treating 'than' or 'that' as heads of the matrix CPs would require evidence that they possess a distinctive illocutionary force, as opposed to declarative or interrogative clauses, but this is highly unlikely, and none has been adduced. Thirdly, Kayne's analysis of phrases containing comparative and result clauses is suspiciously unparallel to his analysis of DPs containing relative clauses, although the parallelism has often been pointed out (e.g., by Abney).[12] And, finally, it is possible to keep the LCA approach and get the surface order right without assuming that the result clause is the head, as we shall see below.
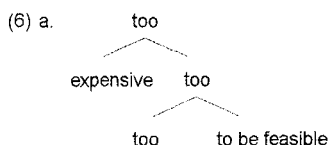
In sum, no currently existing analysis seems remotely satisfactory, so we need new ideas on how DegPs fit into sentences. It is my claim that the difficulty to integrate the DegP system into the overall phrase structure is a consequence of an inadequate analysis of DegPs, and it is the purpose of this article to provide a new one that offers a solution to this long-standing problem.
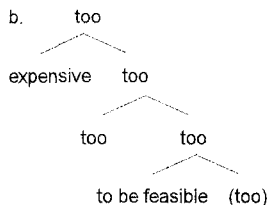
2. The proposal

2.1. The core idea: AP, ADVP, and QP as specifiers of Deg

If Degs cannot be adjuncts nor specifiers of AP (AdvP, QP), as Abney's (1987) and Corver's (1997) extraction-based evidence shows, nor, obviously, complements of As (Advs, Qs), they can only be heads with respect to APs (under Abney's assumptions) or with respect to QPs, (under Bresnan's and Corver's). I accept that Degs and Qs are heads with respect to APs, but I will offer an alternative in what concerns the status of the AP and the CP/PP with respect to the Deg (or Q) head.

Both Abney and Corver take the AP to be a complement of Deg, but if the comparative CP (or PP, in cases like 'too tall for a Spaniard') is itself the complement of Deg, obviously, under the binary-branching syntax induced by Merge, the APs cannot also be complements. If so, they have to be specifiers of Deg (or Q), i.e., the only initial structure really compatible with current assumptions is (6a), if it is assumed that heads can take their complement as well as their specifier in situ, or, if a head must move into a higher shell to take a second argument, (6b), where 'too' rises after merging with its first argument, the 'to'-clause:[13]

(6) a.   too
          ⌢
    expensive   too
            ⌢
       too   to be feasible

b.   too
      ⌢
expensive   too
          ⌢
      too   too
          ⌢
    to be feasible   (too)

Neither (6a) nor (6b) directly yields the left-to-right order observed at the P interface, though. To obtain 'too expensive to be feasible' we must assume that 'too' rises once more, either to adjoin to the adjective, or into a head position above AP from which it c-commands the rest of the DegP, i.e., the (simplified) derivation is schematised in (7a,b), respectively:[14]

(7) a.   too
              ⌢
      too+ expensive too
                  ⌢
              (too)   to be feasible
    b.   too
        ⌢
    too   too
          ⌢
      expensive   too
              ⌢
          (too)   too
                  ⌢
          to be feasible (too)
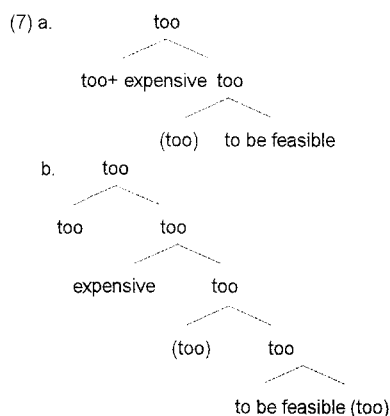
The immediate question, then, is: whereto does 'too' move and why must it rise further, once it has locally taken all the arguments it selects? Within minimalist assumptions, all movement is taken to be triggered by the needs of feature-checking, so the obvious answer is that some functional category merged above DegP has strong features that attract Deg into it. The problem, however, is that, whereas in the case of APs, an AgrP projection can easily be motivated by the existence of visible agreement between the adjective and its subject in many languages (e.g., Spanish, French, German), DegPs do not seem to have agreement features to be checked, so there is no evidence for a higher functional head into which 'too' has to move.

There are obvious alternatives, though, i.e., as to the landing site of the process, 1) when Deg occurs in an argument, a modifier, or a predicate of a VP, it might rise and adjoin to a verbal head, 2) it might rise and project, creating a new DegP shell,[15] and, in certain cases, attracting the A (Adv, Q) head of its specifier, or 3) it might rise and just adjoin to the head of its specifier.[16] And as regards the trigger of Deg-rising, 1) Deg might rise above its specifier to avoid an HFF violation, 2) it might rise because it is an operator and must take scope over (i.e., c-command) the 'degree' argument variable of the

adjective (Corver's 'G' argument), or 3) it might rise for both reasons, as I am inclined to believe.

That 1) is a possible trigger of Deg rising shows as soon as we consider in detail the structure of the specifier and the basic contexts in which DegPs must occur. For concreteness, in a typical example like 'the plan is too expensive to be feasible', assuming strict Locality of Theta Marking (XPISH), the subject of the AP (the plan) is an argument theta-marked by the adjective and must be merged to it at some initial stage, i.e., before the AP is itself merged as a complement of a higher head, so the structure of the core AP must be something like (8):[17]

(8)   expensive
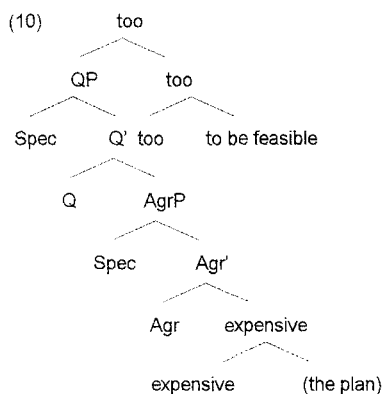
expensive   the plan
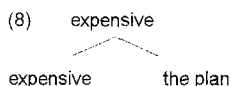
It follows, then, that the AP specifier of Deg is a nontrivial branching structure and may of itself induce an HFF violation unless Deg rises to leave it behind, as claimed. But in fact there is rather more structure hidden within the specifier of Deg. If we adopt Chomsky's view that APs are dominated by Agr-like projections in whose head and specifier, respectively, the adjective and its subject must land to license their agreement features, the AP is first embedded into an AgrP, as in (9):

(9)   AgrP

Spec   Agr'

Agr   expensive
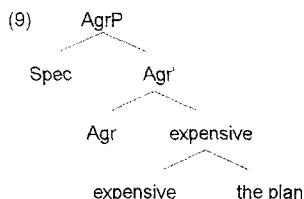
expensive   the plan

From (9), the adjective 'expensive' eventually rises to Agr, and the subject 'the plan' in its turn rises to Spec Agr to secure agreement with the A, although agreement is weak and morphologically invisible in English in this case.

On the other hand, Corver (1997) offers compelling evidence that the complements of Deg are in fact QPs, rather than APs, although the Q shows only, in the form of a 'dummy' quantifier 'much', when the AP is replaced by 'so' and therefore there is no adjectival head available to rise into Q. This makes the DegP completely parallel to DetP, where D selects QP and Q selects NP (see e.g., Lobeck 1995), so I will adopt the gist of Corver's analysis in this respect, as well as his account of the motivations for A-to-Q movement, but assuming that QP is not the complement, but the specifier of Deg. As QP, in its turn, dominates the AgrP of (9), the full initial structure of the specifier of Deg turns out to be (10), a far cry from the string that surfaces at the P interface.

(10)   too
         ╱────╲
       QP   too
     ╱──╲   ╱───╲
  Spec   Q' too   to be feasible
       ╱──╲
      Q   AgrP
          ╱───╲
       Spec   Agr'
             ╱───╲
           Agr   expensive
               ╱───╲
          expensive   (the plan)

In (10) the adjective rises into Agr and eventually into Q to be locally accessible to Deg,[18] and the DP subject rises into Spec Agr to agree with the adjective, and subsequently into Spec Q on its way to the top of the clause.

It is clear, therefore, that the QP is internally quite complex and induces an HFF violation if the Deg stays in its initial place. As to the need for Deg to rise and take a variable in its scope, it is a more or less standard assumption of the LF of result sentences (cf. Liberman 1974, Williams 1974, So-Interpretation in Williams 1977, Rouveret 1978, QP-Movement in Guéron & May 1984, Baltin 1987, and subsequent work).

Either to avoid the HFF violation, then, or to c-command its G variable, or rather both, the Deg operator must rise above QP creating a new DegP shell, I will assume, on top of the original one, to which an additional specifier can be merged (e.g., Corver's lexical quantifier 'much' in 'much too expensive to be feasible', etc.). The relevant part of the derivation is shown in figure (11).

(11)   too
       ╱────╲
    much   too
           ╱────╲
        too   too
               ╱───╲
             Q   too
           ╱──╲   ╱───╲
      (the plan) Q' (too) to be feasible
               ╱──╲
        expensive+Q   AgrP
                    ╱───╲
               (the plan) Agr'
                        ╱───╲
               (expensive)+Agr   expensive
                               ╱───╲
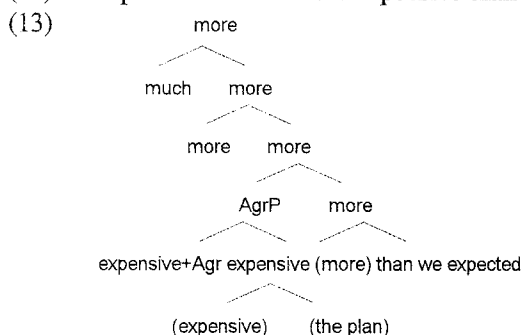   (expensive)   (the plan)
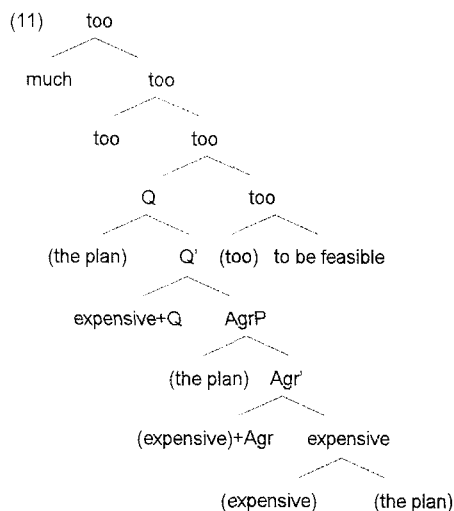
The rest of the derivation of examples like 'the plan was much too expensive to be feasible' is relatively straightforward: the subject rises to the Spec of Q and to an extra Spec of DegP (cf. Chomsky 1995, chapter 4),[19] (11) is merged with the copula 'was' forming a VP, which is next merged to T, and the DP 'the plan' rises stepwise from specifier to specifier according to MLC until its 'phi' features, its Case, and the EPP feature are satisfied, as assumed in the literature.
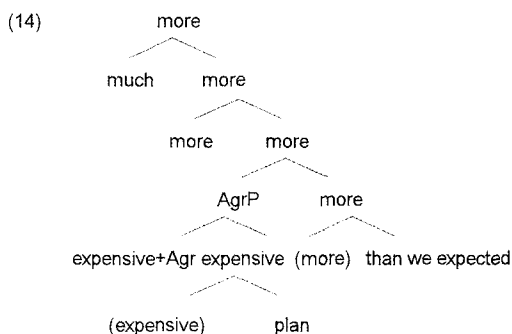
In cases of attributive modification like 'much too expensive a plan to be feasible' the only difference is that the indefinite DP is not externalized and remains as an internal argument of the adjective (cf. the definiteness effect in '*too expensive the plan to be feasible'). I really have nothing useful to add about this construction, though, except that its derivation is regular, according to what has already been said, i.e., the surface order is obtained after 'too' rises to c-command its G argument and avoid the HFF violation.[20]

Under Corver's and Bresnan's 'split degree system', adopted here in its essentials, 'more', 'less', 'enough', '-er', etc. are Degree Quantifiers and can themselves take a comparative clause as their inner complement and an AP (properly an AgrP) or AdvP as their specifier, i.e., we should expect well-formed examples like (12) with partial structures and derivations like (13):[21]

(12) The plan was much more expensive than we expected.

(13)

```
                      more
                   ___/\___
                  /        \
              much         more
                         __/\__
                        /      \
                    more        more
                             __/\__
                            /      \
                        AgrP        more
                     __/\__      __/\__
                    /      \    /      \
     expensive+Agr expensive (more) than we expected
                 __/\__
                /      \
          (expensive)  (the plan)
```

Correspondingly, we get cases of attributive modification like 'a much more expensive plan than we expected' in which the quantifier 'more' rises as usual but the NP 'plan' does not move from within the AgrP, for, not being a full DP, it has no Case features to check. It must still rise to Spec Agr, though, to check its agreement features, but Agr is weak in English, so this movement occurs at LF and its effect is invisible at P. The Quantifier 'more', on the contrary, rises overtly from its primary shell to c-command its G variable and avoid the HFF violation, as usual, projects, and may take a new specifier ('much'). The relevant structure that gets spelt out, therefore, is (14), and the right surface order follows without the need to invoke Extraposition:

(14)   more
                    ╱‾‾‾╲
            much   more
                     ╱‾‾‾╲
                more   more
                         ╱‾‾‾╲
                    AgrP   more
                 ╱‾‾╲   ╱‾‾‾╲
        expensive+Agr expensive (more)   than we expected
                   ╱‾‾‾╲
             (expensive)   plan

Note that the structures and derivations assumed here also correctly predict the surface order of the CPs and any complements the adjective itself may carry, such as the PP complement 'to feminism' in example (15), whose derivation is partially shown in (16):

(15) Smith was just as hostile to feminism as Jones was.

(16)   as
               ╱‾‾‾╲
        just   as
                 ╱‾‾‾╲
            as   as
                  ╱‾‾‾╲
              QP   as
           ╱‾‾╲   ╱‾‾‾╲
    hostile+Q   AgrP (as)   as Jones was
               ╱‾‾╲
          (Smith)   Agr'
                  ╱‾‾╲
          (hostile)+Agr   hostile
                        ╱‾‾╲
                  (Smith)   hostile
                          ╱‾‾╲
                    (hostile)   to
                            ╱‾‾‾╲
                         to   feminism
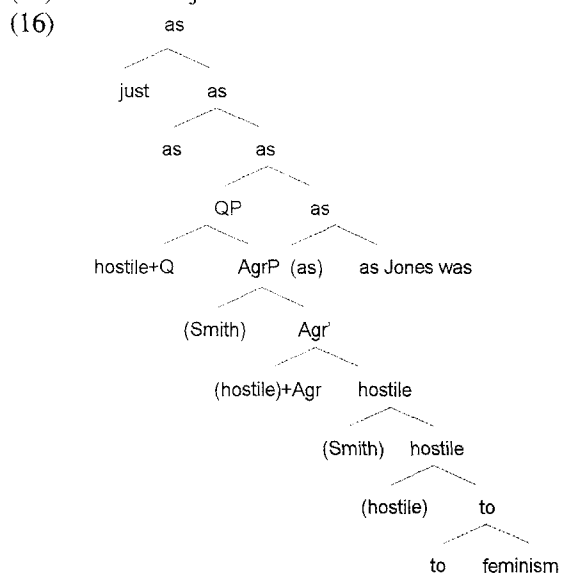
Since both Deg and Q select result/comparative clauses, we must expect well-formed examples with one such CP accompanying each, and, indeed, such examples occur, as in (17). In such cases, though, a strict nesting order is imposed, cf. (18), which, under the classical right-adjunction analyses, or Jackendoff's (1977) base-generation one, must be stipulated:[22]

(17) The plan was so much more expensive than we expected that it was rejected.
(18) *The plan was so much more expensive that it was rejected than we expected.

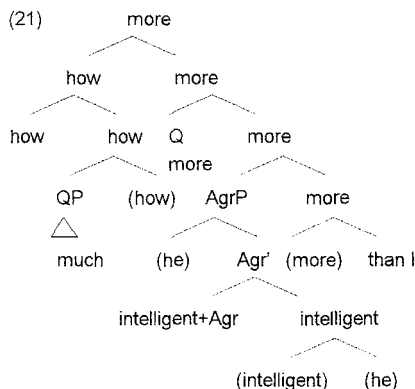Interestingly, the set of hypotheses adopted here does predict exactly the right surface order in such complex cases without stipulation. The relevant partial structure of the well-formed (17) is (19), where 'so' rises leaving its QP specifier behind, and, inside the QP, 'more' rises, in its turn, above its AgrP specifier.[23]

(19)
```
                          so
                        /    \
              (the plan)      so
                            /    \
                        so         so
                                 /    \
                            more        so
                          /      \    /    \
                 (the plan)  more (so)  that we rejected it
                            /      \
                        much        more
                                  /      \
                             more          more
                                         /      \
                                   AgrP           more
                                  /    \         /    \
                        (the plan)  Agr' (more) than we expected
                                   /      \
                        expensive+ Agr      expensive
                                          /      \
                                  expensive)      (the plan)
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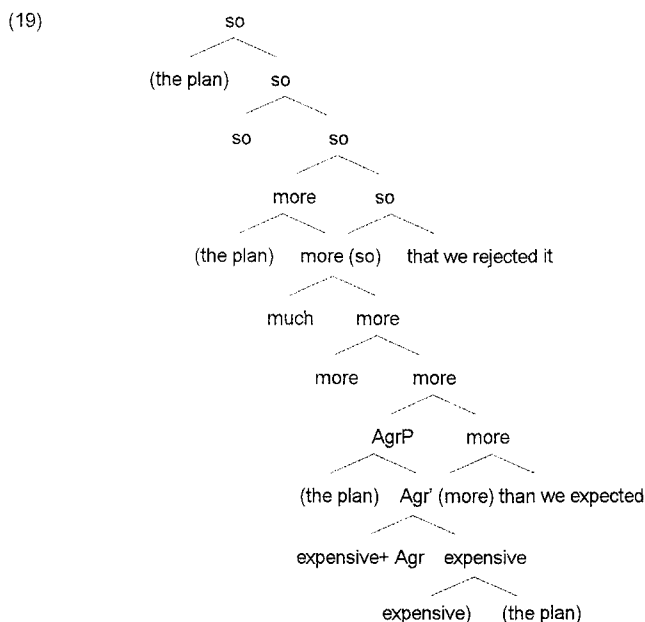
Note that the string 'so much more expensive than we expected' of (19) is structurally different from the apparently parallel one 'how much more intelligent than I' in (20).

(20) How much more intelligent than I is he?

In (20) the head is the Q 'more', which takes CP as its complement and the AgrP 'intelligent' as its specifier. As usual, 'more' rises past AgrP and generates a new QP shell, which in its turn takes the DegP 'how much' as its specifier. The structure and derivation of the relevant part of (20), therefore, is (21), in which 'how much' is a constituent, whereas in (19) the string 'so much' is not (see next page):

(21)

```
                    more
                 ___/‾‾\___
            how           more
         __/‾‾\__       __/‾‾\__
      how      how  Q          more
           __/‾‾\__        __/‾‾\__
        QP      (how)  AgrP       more
       /△\     __/‾‾\__       __/‾‾\__
     much    (he)    Agr'  (more)  than I
                  __/‾‾\__
         intelligent+Agr   intelligent
                      __/‾‾\__
                 (intelligent)   (he)
```

Evidence in this respect comes from the possibility of extracting 'how much' in (20) but not 'so much' in (19), cf. (22) and (23a) vs. (23b):

(22) a. How much is he __ taller than I?
       b. How much taller than I is he?
(23) a. *So much was the plan __ more expensive than we expected that we rejected it.
       b. So much more expensive than we expected was the plan that we rejected it.[24]

2.2. Accommodating Corver's basic cases

Since I keep Corver's distinction between Det-like degree elements and Q-like ones, his account of dummy 'much', and the basic idea that Degs are heads, instead of XPs, all the desirable consequences of the Split Degree System hypothesis can be preserved under the present analysis, with the added advantage that the distribution of the comparative CPs with respect to other elements of DegP, QP, and other constituents of VPs and sentences (cf. infra) follows automatically. I will briefly review all the basic cases Corver discusses.

For example, the impossible extractions of Degs (Left-Branch Condition violations), as in (24), (25), or (26), follow in the present account from the fact that, as in Abney's and Corver's, 'how', 'so', and 'too' are X-level categories, not XPs, and therefore cannot be attracted to Spec Foc/Top, respectively.[25]

(24) a. *How is the hotel expensive?
       b. How expensive is the hotel?
(25) a. *So was the hotel expensive that we left immediately.
       b. So expensive was the hotel that we left immediately.
(26) a. *Too I didn't find it __ expensive, to be fair.
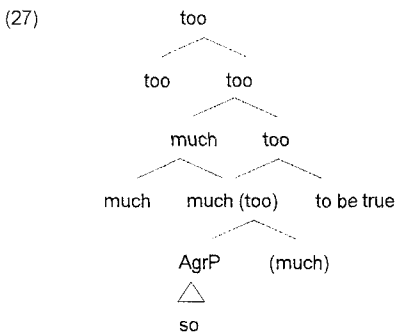   b. Too expensive, I didn't find it, to be fair.

As in Corver's analysis, cases like '*too more expensive' are excluded here as instances of vacuous quantification: 'more' is closer to the adjective (its specifier) and

binds its G argument, so 'too' cannot bind any free variable and the structure is rejected at L. What differs, of course, is the derivation proposed here: 'too' has the QP 'expensive more' as its specifier, in which, in turn, the Q element 'more' takes the AgrP 'expensive' as its specifier, and then both Q and Deg rise above their respective specifiers to avoid HFF violations and c-command their respective G arguments, projecting new shells, Q a new QP, Deg a new DegP.

Also, as in Corver's analysis, cases like '*much intelligent', '*too much intelligent', are excluded here by Economy, as the A-to-Q option available at UG is less costly than the language-specific insertion of dummy 'much'. The only difference is that the Q starts as the head of QP, with the AgrP as its specifier, and then rises past it and generates a new QP shell, with the adjective rising in its turn to occupy Q, as we have seen.
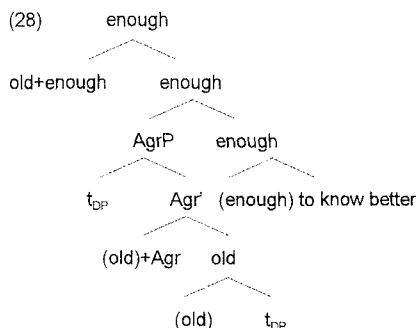
Correspondingly, cases like '*too so', '*as so', '*so so', etc. (cf. 'too much so', 'so much so', etc.) are violations of Theta Theory and Full Interpretation, since 'so', being phrasal, cannot reach the head of Q after this rises past it, and therefore does never become locally available to the Det-like Deg head 'as', 'too', etc. Deg, then, remains a vacuous operator, and the AP remains unlicensed, which causes the structure to crash at L.

On the contrary, cases like 'too much so to be true', 'as much so as we expected', etc., are, as in Corver's account, well-formed. The only difference is, again, in the way they are derived: in Corver's analysis there is no movement involved; in mine, 'too' is the head, the CP is its complement, and 'so' is the AgrP (AP) specifier of Q, eventually filled by dummy 'much'; then Q rises above its AgrP specifier projecting a new QP shell which becomes the specifier of the Deg head 'too', and 'too', in its turn, rises above its QP specifier projecting a new DegP shell. The relevant structure and derivation is shown in (27) (where 'too' may take a new specifier in its higher shell, cf. 'much too much so to be true', etc.):

(27)

```
                too
              /     \
          too        too
                   /     \
               much       too
              /    \      /    \
          much   much(too)  to be true
                       /    \
                    AgrP    (much)
                     △
                     so
```
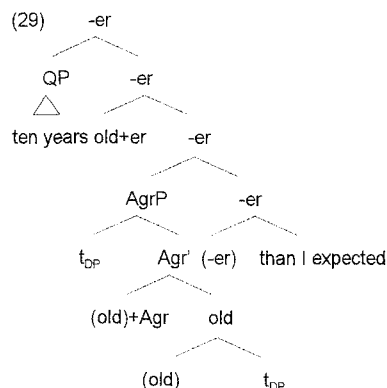
Cases like 'old enough to know better' are derived by rising of the Q-like Deg 'enough' above its AP specifier, followed by subsequent rising of the adjectival head 'old' to satisfy the c-selection properties of the syntactic affix 'enough'. Note that, in 'enough so to know better', 'so', being phrasal, cannot satisfy the c-selection feature of the affix and does not

rise from AP, cf. '*so enough to know better'.[26] The relevant derivation appears in (28).

(28)   enough
        old+enough   enough
                    AgrP   enough
                 t_DP   Agr' (enough) to know better
              (old)+Agr   old
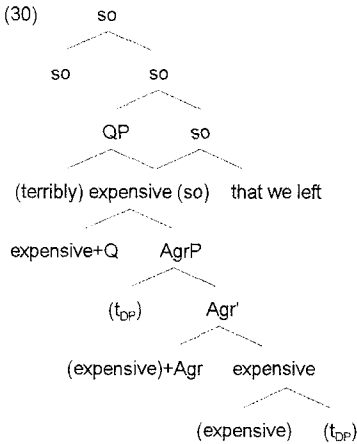   (old)   t_DP

Cases like 'ten years/much older than I expected' are derived in the present approach via 1) rising of the Q-like Deg affix '–er' above its AgrP specifier, followed by subsequent rising of the adjective through Agr to satisfy the c-selection feature of the affix '–er', and merging of the new specifier, the QP 'ten years' (non-dummy 'much', etc.), in the higher Q shell, as shown in (29).

(29)   -er
      QP   -er
      △   -er
ten years old+er   -er
              AgrP   -er
           t_DP   Agr' (-er) than I expected
        (old)+Agr   old
              (old)   t_DP

Cases like 'six feet tall', where there is no visible Deg, do contain one, though, and can be analysed under the present approach as follows: the AgrP 'tall' is in such cases the specifier of an empty Q which rises above it, as usual, generating a new QP shell. It is followed by 'tall', which rises to land in the empty Q, as Corver claims. Finally, 'six feet' is a QP added as a specifier of the higher QP shell, i.e., essentially the same derivation as (29) except that '–er' is absent and the comparative clause cannot be licensed.

As to cases of adverbial modification by 'considerably', 'terribly', 'extremely', 'quite', 'very', etc., as in Corver's analysis, I take them to be specifiers of Q which Theta-identify[27] the adjective's G argument when the adjective rises into the empty Q. We therefore expect them to co-occur with Degs (cf. 'so terribly/very expensive that we left'), explicit quantifiers (cf. 'extremely few students', 'very many students'), and, subject to
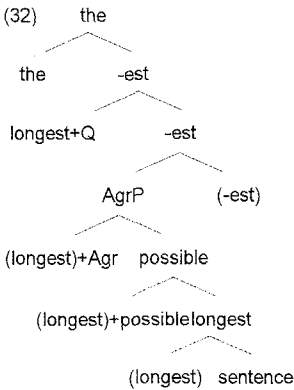
lexical idiosyncrasies (on which, again, see Corver 1997), with dummy 'much' (cf. 'Your proposal isn't very (much) different from mine'). The relevant structure for an example like 'so (terribly) expensive that we left' is (30).[28]

(30)   so
```
(30)        so
         ／＼
       so      so
            ／＼
          QP      so
        ／＼    ／＼
  (terribly) expensive (so)   that we left
            ／＼
    expensive+Q    AgrP
                ／＼
            (t_DP)    Agr'
                   ／＼
         (expensive)+Agr   expensive
                        ／＼
                  (expensive)   (t_DP)
```
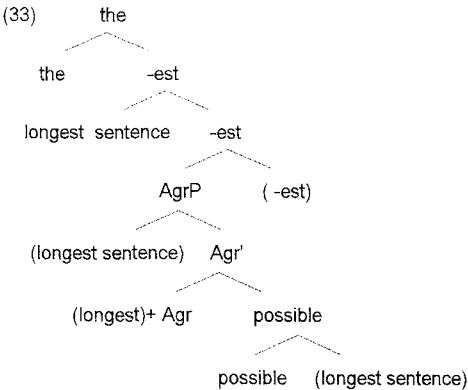
Finally, alternations like those in (31) also follow nicely from Corver's assumptions concerning 'auxiliary adjectives' as adapted to the present proposal:

(31)   a. the longest possible sentence
      b. the longest sentence possible

In (31a), 'possible' is a modal auxiliary adjective that takes the AP 'longest sentence' as its complement, as Corver claims, and the AgrP dominating the higher AP is the specifier of the Q-like degree affix '-est', which must rise above it, as usual. The Q affix '-est', thus, rises and projects a new QP shell above AgrP, but is not satisfied until an adjective with the same features checks it. 'Longest' is a suitable candidate, but cannot skip the A head position occupied by 'possible', so a way for 'longest' to reach the Q '-est' without violating Shortest Movement is to first adjoin to 'possible' and then to move into Q, which yields (31a). The relevant derivation appears in figure (32) (see next page):

(32)   the
      ╱‾‾‾‾‾╲
   the   -est
          ╱‾‾‾‾‾╲
 longest+Q   -est
             ╱‾‾‾‾‾╲
        AgrP   (-est)
      ╱‾‾‾‾╲
(longest)+Agr   possible
            ╱‾‾‾‾╲
   (longest)+possible longest
               ╱‾‾‾‾╲
          (longest) sentence

However, since the higher QP shell projected by '–est' has provided a new specifier slot, there is room for an alternative way to satisfy the features of the adjective and the Q: the AP 'longest sentence' can move into spec Q skipping the head occupied by 'possible' and yield the equally well-formed (31b). The difference is that, in this second case, checking takes place in a specifier-head configuration, cf. (33), but note that 'longest' is the head of the AP (and subsequently the head of AgrP), so its features percolate to the label of AP and AgrP and can locally check the appropriate features of the Q '-est'.

(33)   the
      ╱‾‾‾‾‾╲
   the   -est
          ╱‾‾‾‾‾╲
 longest sentence   -est
             ╱‾‾‾‾╲
        AgrP   (-est)
      ╱‾‾‾‾╲
(longest sentence)   Agr'
              ╱‾‾‾‾╲
    (longest)+ Agr   possible
               ╱‾‾‾‾╲
          possible   (longest sentence)

The present theory cannot so far account for extractions like (34), where the Deg word 'so' has risen above Q and apparently forms a single constituent with the A, Adv or Q, since it is extracted along with them, whereas, under our assumptions, 'so' and the A, Adv, Q should not form a constituent and therefore should not be extractable as a unit.

(34) a. So expensive was the hotel that we stayed only one night.
     b. So well did she perform that they hired her immediately.
     c. So much did we spend that we had to shorten our holidays.

This pattern is exceptional, though, for other Degs clearly do not allow comparable extractions, cf. (35), and can be explained if 'so' is a syntactic affix and has the option of attracting the head of its specifier (see endnote 28).

(35) a. *Too difficult, the problem was not to solve in one hour.
     b. *More difficult, the problem was not than we expected.
     c. *As difficult, the problem was not as we had expected.

2.3. Apparent non-vacuous Result/Comparative Clause Extraposition

Finally, we must still explain how the present proposal accounts for surface orders like (36), or indeed for all cases in which anything intervenes between the specifier and the complement clause, like the strings in brackets in (36), i.e., the typical cases of apparent non-vacuous extraposition.

(36) a. So few students [have taken this course this year] that a teacher has been fired.
     b. We have so few students [this year] that a teacher has been fired.
     c. A teacher was lecturing to so few students [this year] that he was fired.
     d. A teacher skipped lectures so frequently [in the last semester] that he was fired.
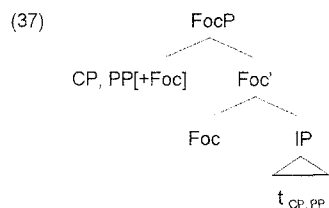
This is a problem that all the analyses so far proposed (except Kayne's) must face. Bresnan (1973), Williams (1975), Bowers (1975), Jackendoff (1977), and Guéron & May (1984) plainly resort to Extraposition to solve it, Baltin (1987) obscurely base-generates discontinuous QPs, but also invokes Result Clause Extraposition (adjunction to S') to account for others, and although Abney base-generates the comparative clause directly after an AP (AdvP or QP) complement of Deg in ternary-branching structures to which we have already objected above, as he notes, he cannot dispense with Extraposition.

The current theoretical climate against the existence of Extraposition is due to its being considered a case of Rightward Adjunction to an XP (VP, IP, CP, etc.), a kind of movement which is dubious for at least two reasons: 1) under Kayne's LCA, no constituent A that surfaces after a constituent B can be the result of right-adjunction of A to B, for, if A is adjoined to B, it will necessarily become a specifier of B, will asymmetrically c-command B, and will therefore be linearized, according to the LCA, preceding B, i.e., in the wrong order; and 2) under Chomsky's views on Checking Theory and movement as driven by Greed, a) XP-adjunction to YP cannot exist, for the landing site is not even part of the checking domain of Y and no feature will be checked thereby, so such movements are gratuitous and just cannot take place, and b) adjunction to any XP that requires being interpreted at LF will make it invisible, and should not occur.

However, as to Kayne's objections, apart from the semantic implausibility, pointed out above, of taking the comparative or result clause as the head of the whole structure, and the substantial difficulties discussed in Borsley (1997) and Büring & Hartmann (1997),

his analysis need not be automatically taken for granted, because, even adopting his LCA approach to linear order, there are alternatives worth considering (see footnote 12 and infra).

As to Chomsky's qualms, in the (apparent) absence of appropriate features to justify a checking analysis, what he proposes concerning Heavy NP-Shift and the various classes of Extraposition (Baltin's Detachment, etc.) is to exclude such 'stylistic' processes from the core of CCHL, obviously not anybody's preferred solution, if only because they have semantic, as well as phonetic consequences (i.e., they are Focusing devices, cf. Rochemont & Culicover 1990). Note, however, that, under Chomsky's assumption that word order is irrelevant to syntax, we need not assume that Extraposition is adjunction at all. Main clauses might be embedded as complements of Focus heads (cf. Rizzi 1997), and extraposed clauses might well land in the specifier of Focus to check its +Foc feature, i.e., technically, they might be cases of 'substitution', which is unproblematic. The relevant structure is schematically shown in (37):

(37)
```
                    FocP
              _____
             /            \
   CP, PP[+Foc]          Foc'
                      _____
                     /            \
                   Foc            IP
                                 /__\
                                t CP,PP
```
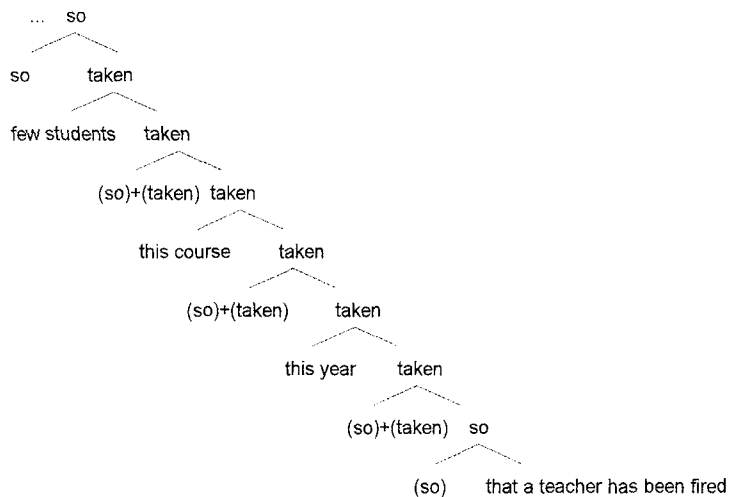
All such a theory need add to account for (36a-d) is some principle (obviously, not the LCA), applicable at P, that makes the focused constituent appear last in its clause, e.g., a Focus Last principle like (38):[29]
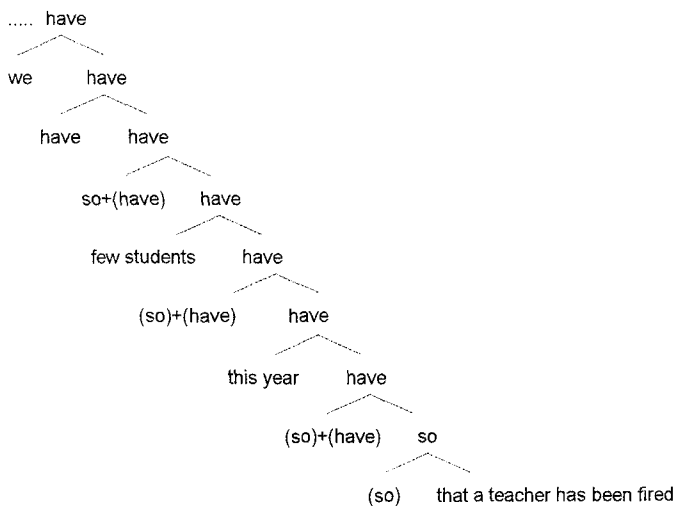
(38) Focus Last: [-Foc] < [+Foc]

However, within the present theory, we need not even resort to Extraposition, in any form, to account for cases like (36), for, under Larsonian assumptions, the DegP can be merged at the bottom of projections and Deg can rise above the intervening segment in order to c-command the G argument of A, Adv or Q, and adjoin to an existing higher head, or even project, exactly as in the cases already discussed. Figures (39), (40), and (41) represent the abbreviated derivations of sentences like (36) containing Deg words in their subjects, objects, and modifiers (see next page):[30]
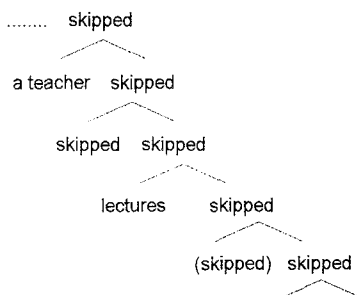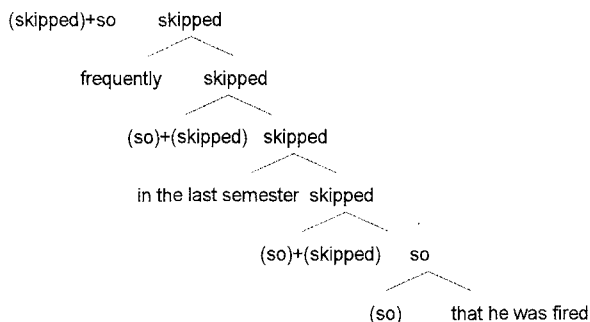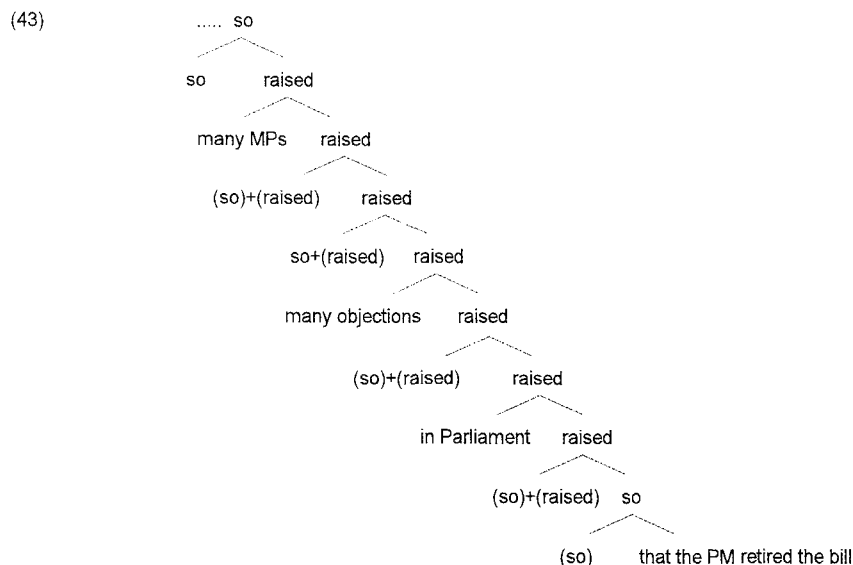
(39)

```
              ...   so
            ┌───────┴───────┐
           so             taken
        ┌───────┴───────┐
  few students         taken
              ┌───────────┴───────────┐
       (so)+(taken)                  taken
                   ┌──────────────┴──────────────┐
            this course                        taken
                         ┌──────────────┴──────────────┐
                  (so)+(taken)                        taken
                               ┌──────────────┴──────────────┐
                        this year                          taken
                                    ┌──────────────┴──────────────┐
                             (so)+(taken)                        so
                                          ┌──────────────┴──────────────┐
                                      (so)        that a teacher has been fired
```

(40)

```
              .....   have
            ┌───────┴───────┐
           we            have
                 ┌───────┴───────┐
               have            have
                     ┌──────────┴──────────┐
              so+(have)                  have
                          ┌──────────┴──────────┐
                  few students                have
                               ┌──────────┴──────────┐
                        (so)+(have)                have
                                    ┌──────────┴──────────┐
                             this year                  have
                                         ┌──────────┴──────────┐
                                  (so)+(have)               so
                                              ┌──────────┴──────────┐
                                          (so)     that a teacher has been fired
```

(41)

```
           ........   skipped
         ┌──────────┴──────────┐
   a teacher              skipped
              ┌──────────┴──────────┐
         skipped               skipped
                    ┌──────────┴──────────┐
             lectures                  skipped
                         ┌──────────┴──────────┐
                  (skipped)               skipped
```

```
(skipped)+so      skipped
              ╱‾‾‾‾╲
      frequently      skipped
                  ╱‾‾‾‾╲
          (so)+(skipped)  skipped
                      ╱‾‾‾‾╲
              in the last semester  skipped
                          ╱‾‾‾‾╲
                  (so)+(skipped)    so
                              ╱‾‾‾‾╲
                          (so)      that he was fired
```

Finally, the single puzzling fact that cast doubt on the complement status of comparative and result clauses, i.e., that in examples like (42) a single clause can be licensed by n identical Deg words,[31] can easily be explained in the present framework.

(42) a. So many MPs raised so many objections in Parliament that the PM retired the bill.
      b. More MPs raised more objections to more aspects of the bill than we expected.

It suffices to assume that a single DegP is generated at the bottom of the clause (hence, only one result CP will appear), that Deg ascends cyclically leaving copies of itself along its path, and that, since the G argument of gradable A's, Adv's or Q's must be locally bound (see Corver 1997), the copies are not deleted when they land above such categories. Thus, an abbreviated derivation of sentence (42a) is shown in figure (43):

(43)   ..... so
                  ╱‾‾‾╲
          so   raised
              ╱‾‾‾‾╲
      many MPs   raised
                ╱‾‾‾‾╲
        (so)+(raised)   raised
                    ╱‾‾‾‾╲
            so+(raised)   raised
                      ╱‾‾‾‾╲
            many objections   raised
                        ╱‾‾‾‾╲
                (so)+(raised)   raised
                            ╱‾‾‾‾╲
                    in Parliament   raised
                              ╱‾‾‾‾╲
                      (so)+(raised)   so
                                  ╱‾‾‾‾╲
                              (so)   that the PM retired the bill

The 'copy theory of movement' account sketched above also explains why when the Deg word fails to accompany the quantifiers, sentences deteriorate, cf. the contrast between (44a) and (44b):

(44) a. So many MPs raised so many objections that the Government retired the bill.
     b. *?So many MPs raised many objections that the Government retired the bill.

Finally, the present account also automatically explains the fact, noted by Guéron & May (1984), that Degs selecting result clauses must be identical, cf. (45a-b) vs. (45e-f):

(45) a. So many students failed so many subjects that the program was cancelled.
     b. Too many students failed too many subjects for the program to continue.
     c. So many students failed too many subjects that the program was cancelled.
     d. Too many students failed so many subjects that the program was cancelled.
     e. *So many students failed too many subjects for the program to continue.
     f. *Too many students failed so many subjects for the program to continue.

Since only a complex DegP is possible per clause, it follows that only copies of the corresponding Deg word will be around, as in (45a-b). The grammatical status of apparent counterexamples like (45c-d) is due to the fact that the result clauses that 'too' c-selects are optional complements. Thus, if 'too' takes no complement, no HFF violation will result even if Deg is directly merged to its A, Adv or Q specifier, and we can expect cases like (45c-d). On the contrary, the complement clauses c-selected by 'so' are obligatory, and therefore (45e-f) are out.

3. Conclusion

In sum, all the desirable consequences of Abney's and Corver's analysis of the Deg system, plus the nice results of Kayne's proposal in what concerns the solution to the long-standing puzzle of the ordering of comparative and result clauses with respect to other constituents (and with respect to each other when they co-occur in the same phrase) follow without further stipulation from the hypothesis that comparative and result CPs/PPs are complements, and the APs, AdvPs and QPs specifiers, of two types of Degs, Det-like and Q-like, respectively, as Bresnan (1973) and Corver (1997) had noticed.
    Although under this version of the Deg S' theory the derivations become more intricate, with more movement involved, its uniform account of the various constructions discussed is achieved at very little or no theoretical cost. Essentially, all the present proposal requires is the possibility of Degs rising, perhaps projecting a new DegP shell in certain cases, and, in the case of 'so', attracting a constituent to satisfy its affixal property, for Emonds' Surface Recursion Restriction (then Williams's Head Final Filter) has been available for decades, and, anyway, it is only one of the two factors that trigger

the derivations above.[32]

As to heads rising and projecting, although in Chomsky's approach it is always the target that projects, as a matter of fact, there probably is not any real issue at stake here. Of course, in most cases discussed above, a higher head is available for the rising Deg to adjoin to (typically a V), but not in all (e.g., not, or not obviously, in nominal projections like 'a much too expensive hotel for us to stay at'). Since under Abney's analysis Det can select a DegP, of course even in nominal projections it would be trivially easy to avoid the theoretical problem by positing an appropriate functional Deg head for the degree word to rise to, but heads must probably be allowed to rise and project in other cases, anyway. A look at the way a lexical verb takes its arguments and modifiers under Larsonian assumptions should be illustrative in this respect. Larson's VP shell analysis implies n-1 shells for a verb taking n arguments/modifiers. However, lexicologists (e.g., Hale & Keyser 1993, Levin 1995), have distinguished only two verbal categories within VPs, the lexical V, which projects the lower shell (with one or two internal arguments), and small 'v', which projects the causative shell of transitives and unergatives (cf. Hale & Keyser 1993). If, in addition to its arguments, a verb takes n adverbial specifiers, whether it does so below its arguments, as Larson (1988) and Chomsky (1995) assume, or above them, as Cinque (1999) claims, it has to move and project n times, actually generating n VP shells with heads that, under reasonable assumptions, can only be labelled 'V'.

Of course, in this case too, one can easily provide a skeleton of empty adverbial categories and make the verb ascend through adjunction to their heads in order to avoid saying that it rises and projects, but that is either a merely terminological expedient, or, if given substance, a problematic move. To mention just one detail, all but the highest of such adverbial XPs have to be embedded as complements of each other, but there is not the remotest hope of anybody stating appropriate c/s-selection restrictions, if only because such adverbials are not even rigidly ordered among themselves. Such functional heads, in other words, lack substantial properties, and are just convenient landing places for the verb to rise through in an orthodox way. In practice, when the verb ascends into them, they behave as VPs, so we may just as well avoid terminological issues (or substantial credibility problems in the lexical items that must enter numerations) and allow the verb to rise above its specifiers and project new shells as needed. That seems the obvious move in a derivational bottom-up approach like the minimalist one.[33]

But if the verb (and the noun) can rise and project, it is reasonable to assume that heads in general can, and, if so, the minor technical difficulties the present analysis might be said to face in a subset of the cases involved vanish,[34] whereas its net gains in descriptive adequacy and theoretical parsimony remain, and are quite remarkable.

Notes

* I hereby wish to acknowledge the judicious suggestions made to an early version of this article by my colleague Daniel García Velasco, several of which have been incorporated in the final text.

1. In this article, I shall discuss primarily the interactions of DegPs with adjectives, but, of course, the reasoning here can be straightforwardly extended to DegPs accompanying adverbs, quantifiers, or predicative PPs (cf. 'My piano is more out of tune now than before he tuned it', 'These electronic gadgets are less in demand now than a few years ago'; see Jackendoff 1977).

2. That such clauses are complements is beyond reasonable doubt, for a) they usually cannot be introduced unless the Degs are present (cf. '*That is __ expensive than I expected', '*It is __ expensive that we cannot afford it'), b) their complementizers and tense specifications are strictly selected according to the Deg that governs them (i.e., as ... as, so ... that, too ... (for) to, more ... than), and c) they behave as complements under extraction, as Baltin (1987) points out. The only fact that calls this traditional analysis into question is that a single clause can serve as the complement of more than one Deg, cf. 'So many MPs raised so many objections to so many articles of the bill that the Government decided to retire it' (see Guéron & May 1984), but, granted the Copy Theory of Movement, there is a simple explanation for this fact, too, as we shall see.

3. The usual assumption is that the HFF affects modifiers, but, especially under present analyses of modification, and under Abney's approach to DetP, AP, and DegP, its scope must be re-defined. Clearly, to say that it affects specifiers will not do, however, for, e.g., subjects, topics, and foci are specifiers (cf. Rizzi 1997), and yet they systematically fail to obey the HFF without inducing ungrammaticality. This issue is explored in detail in Escribano (1998,1999).

4. For present purposes, I will assume that the HFF is enforced at the P interface and that it triggers overt movement. The existence of the HFF indicates that not all overt displacement is caused by feature-checking under (Suicidal) Greed. Some displacements are triggered by output conditions at P that have to do with the ordering of elements, a still mostly neglected component of legibility and Full Interpretation, as Chomsky (1995, 1998) acknowledges.

5. Actually, Williams (1974, 1975), and then others like Guéron & May (1984) and Baltin (1987), have offered evidence, based on interaction with PP and Relative Clause Extraposition, that result clauses must be further moved and adjoined to CP. We shall return to cases of apparent non-vacuous extraposition at the end of this article.

6. Kayne (1994) keeps left-adjunction, but his Linear Correspondence Axiom forces him to eliminate right-adjunction completely and formulate alternative analyses resting on base generation and stranding, although at a high price, for the right constituents and the features needed to trigger the massive movements involved often fail to be available (see Borsley 1997, and Bühring & Hartmann 1997 for relevant criticism). Chomsky (1995, 1998) allows XP-adjunction for Merge/Pair Merge but concludes that it should not be available for Move, the case of interest here. The price to be paid is, again, high: extrapositions cannot belong to the core machinery of the Computational Component of Human Language and are left essentially unaccounted for.

7. Guéron & May (1984) take no stand on whether the surface position of result clauses derives from base generation alone or involves movement. In their analysis, the head-complement relation between 'so', 'too' and the result clause is established only at LF, but, of course, under

present assumptions, Deg would not rise overtly and would not be visible at P where it is if that hypothesis were correct. See Baltin (1987) for other criticism of Guéron & May's analysis.

8. As Abney himself acknowledges, extraposition is still needed to account for even simple cases like 'a more beautiful woman than I'd ever seen'. Also, in cases of double extraposition such as 'we have so many fewer students than last year that some teachers have been fired' the nesting order of the extraposed clauses with respect to their respective Degs has to be stipulated.

9 Note that the arguments given by Partee in favour of the so-called Det+Nom analysis of relative clauses (see summary in Stockwell, Schachter & Partee 1973), which might support Jackendoff's proposal for relative clauses, are not applicable to Degs and comparative CPs. Relative clauses are not arguments, but adjuncts, they can be stacked, and, under Partee's analysis, they need not be extraposed, whereas comparative/result CPs are arguments, they cannot be stacked, and they must be 'extraposed'. The relative parallelism between the two structures shows only under the earlier Det S' analysis of relative clauses first offered in Smith (1961).

10. Note that, according to Kayne's (1994) assumptions, only one adjunct/specifier is possible per head, for, if two or more concurred, they would not asymmetrically c-command each other and their terminals would not be exhaustively ordered, as the LCA requires. It follows then, under XPISH, that, if Spec X is reserved for the underlying subject, each modifying AP or AdvP must be an adjunct/specifier of its own (functional) head, i.e., the proposal in Cinque (1999) and earlier work of his since about 1994.

11. Severe objections to Kayne's analysis of relative clauses have been pointed out in Borsley (1997) which are not really answered in Bianchi's (2000) response, particularly in what concerns his massive c-selection difficulties.

12. Actually, a better alternative along Kaynean lines, which would at least have the merit of treating DegPs as fully parallel to DetPs, would be to analyse comparative and result clauses as complements of Degs and derive the surface order via rising of an AP (QP, AdvP) into the specifier of the clause. That analysis would make sense for the clausal complements of 'more', '-er', 'less' and 'as', which contain gaps, but not for the complements of 'so' or 'too', which may not contain them (cf. 'We have fewer students now than we used to have ___' but 'We have so few students now that some teachers have been fired', 'We have too few students now for new teachers to be hired', etc.). On the whole, then, it seems preferable to base-generate the AP, QP or AdvP and assume that the gap inside CP, when it exists, can be accounted for in terms of WH-movement and deletion, as in e.g., Chomsky (1977). As we shall see, the analysis defended below does just that.

13. I assume here a version of the 'bare phrase structure' approach of Chomsky (1994, 1995, 1998), (BPS, henceforth), and in the trees that follow, to informally identify syntactic nodes I will use indistinctly lexical labels and categories like AgrP, CP, etc. where that notation is more parsimonious. Of course, as Chomsky (1994) says, trees are not BPS objects, categorial information has no special status under BPS, and, as he shows in Chomsky (1998), labels are predictable and can be dispensed with, so this is merely for expository convenience, as the set-theoretic objects are much less reader-friendly. Nevertheless, to avoid cluttering the trees with unnecessary information, I will omit parentheses, inner constituents, etc. and use only labels. On the contrary, to suggest the way the Copy Theory of Movement works, when a pronounceable copy is explicit in the tree, traces will be indicated by parentheses around the muted constituents.

14. I shall consider the inner structure of the adjectival specifier in detail immediately below.

15. According to Chomsky (1995, 1998), when a term moves, the target always projects, i.e., an X(P) cannot rise targeting YP and project a new XP. We would therefore expect Deg to merge to a pre-existing functional head, and that might indeed occur whenever DegP is embedded under a higher head. However, higher heads are not always obviously available. On the other hand, in the movements triggered by the HFF there is no evidence of such a pre-existing head, as there is no evidence of feature-checking in either the moving head or its landing site. Apparently, this kind of movement is triggered only by the need to save the string from crashing at the P interface.

16. That could well happen when 'so' occurs in a subject, as in 'So many students flunked that the exam was repeated', although not necessarily. As we shall see below, certain problematic extractions can be accounted for if 'so' is a syntactic affix and adjoins to/attracts the head of its specifier. On the contrary, the impossibility of extracting the Deg and the A, Adv or Q in other cases suggests that Deg does not always adjoin to/attract the head of its specifier, which implies that adjunction to a higher head/projection of a higher DegP shell must still be allowed.

17. I tentatively merge the subject as a complement to the adjective because it seems to have the Theme role, but nothing essential to my argument will change if it is merged as a specifier. The word order, in particular, is relevant only at P, and at that stage the subject has already risen out of the AP through Spec A anyway.

18. In Corver's account, this occurs under government when the A occupies the head of the QP complement of Deg, and according to Higginbotham's (1985) theory of Theta-Binding. I will also adopt Higginbotham's Theta Binding and Theta Identification devices, but, in the present analysis, as in most current minimalist work, government plays no role, and Theta Binding occurs when the A occupies the head of the QP specifier of Deg. The difference is immaterial, though, as both A-positions belong to the minimal domain of Deg.

19. If XPISH is adopted, the subject must rise through a Spec position, which, under the single specifier assumption of classical X-bar theory, creates conflict with any phrase in Spec Deg, as we said. However, the conflict dissolves under analyses like Speas (1990), Koopman & Sportiche (1991), or under Chomsky's (1995) multiple specifier theory. The problem crops up under any analysis that adopts XPISH, so I will leave it aside here assuming that the multiple specifier approach is correct, as Corver (1997) does.

20. Note that 'too expensive a plan to be feasible' is not derived from an underlying structure 'a too expensive plan to be feasible', as often assumed. Under the analysis presented here, of course, as under Abney's or Corver's, 'too expensive' is not even a constituent, and cannot be moved.

21. In cases like 'the plan was expensive enough to be rejected', the Q 'enough' rises past its specifier into the same position occupied by 'more' in (13) and the adjective 'expensive' adjoins to its left. That leaves the specifier of 'enough' empty to lodge adverbials like 'just', cf. 'the plan was just expensive enough to be rejected'. The same occurs when the Q is the '-er' affix: the short adjective rises past its specifier and incorporates to '-er' on its left. Both movements seem to be triggered by lexical features of the quantifier. For concreteness I will assume that both '-er' and 'enough' are syntactic affixes that c-select an adjective on their left.

22. The phenomenon is known since at least Chomsky & Miller (1963), and has been of interest to parsing theoreticians. Bresnan (1973) shows how to derive one example thereof. Williams (1975) postulated four layers of VP structure, with 'than-clauses' adjoining under V''' and result clauses under V''''. Guéron & May (1984) assume that result clauses adjoin to S'

(=CP) or perhaps to S'', which would leave S' to adjoin 'than clauses' to, but Baltin (1987) adjoins result clauses to S'. The problem has never been properly settled, to my knowledge, which makes an alternative solution welcome.

23. The presence of the Spec Q 'much' is required in this case, cf. '*the plan was so more expensive than we expected that we rejected it'. Under Corver's analysis, this follows from the fact that 'so' must c-command its own G argument, as 'more' c-commands the G argument of 'expensive'. That suggests that scope over an appropriate gradable term is the decisive factor in the rising of Degs, for in (19) 'so' would have to rise to avoid the HFF violation anyway, and yet, if 'much' is absent, the structure is ill formed.

24. Cases of apparent non-vacuous extraposition like (23) will be considered below.

25. I adopt here a version of Rizzi's Split CP Hypothesis, cf. Rizzi (1997).

26. That poses the question whether the selectional features of the affix 'enough' may, after all, remain unsatisfied. This seems correct, for 'enough' is not always an affix (e.g., not in 'That's enough', 'We have enough money'), so maybe the c-selection feature is optional, or there are two words 'enough' (as there are two lexical items 'much', under Corver's analysis) and one does not trigger A-to-Q rising.

27. Theta-Identification is Higginbotham's expedient to account for the discharge of theta roles in cases of 'modification', in the broad sense (cf. Higginbotham 1985). Adverbs, like adjectives, are predicates of predicates (i.e., type $< <e,t> , <e,t> >$) and must combine with their heads without affecting their capacity to take their usual thematic arguments, internal or external. The idea of an extra 'referential' argument of predicates (E for verbs, R for Nouns, and G for adjectives) allows for the discharge of the adjective/adverb's external argument via identification with the referential argument of the head and avoids the Theta Criterion violations that would ensue if the XP heads were allowed to receive extra Theta Roles from their modifiers.

28. My guess is that 'such' is just a strong phonetic form of 'so' in examples like 'such an expensive plan that we abandoned it', which would be derived by head movement of 'such' from the higher Deg to the Det 'a' and into a still higher head (cf. '*a such expensive plan that we abandoned it'). Alternatively, 'such' might be a determiner c-selecting an indefinite QP (see Bresnan 1973). As to examples like 'so expensive a plan that we abandoned it', (cf. '*a so expensive plan that we abandoned it') my guess is that 'so' attracts its specifier, with both rising past the determiner 'a' into D, or perhaps Spec D, since the combination may be phrasal (cf. 'so terribly expensive a plan that we abandoned it'), but I do not know why this movement is obligatory in English. The Deg word 'so' clearly behaves as 'such' and rises on its own in German (cf. 'so ein schönes Haus', '*so schönes ein Haus'), so I presume these are just idiosyncratic lexical phenomena.

29. Similar constraints abound in the literature, particularly in OT-inspired work (e.g., AlignFocus in Costa 1996, 1997, and Grimshaw & Samek-Lodovici 1998).

30. As I said above, in the case of 'so', its affixal character might well trigger a further process of attraction of the A, Adv or Q immediately below.

31. As Guéron & May (1984) observe, it is impossible for each 'so' to govern its own separate result clause, cf. '*So many books have been published by so many authors recently that I haven't been able to read them all that I've run out of money to buy them'.

32. I still prefer to claim that the HFF is also relevant here, because, apparently, it is the only factor that triggers head movement in certain cases. For example, under Cinque's (1999) analysis, the verb takes its adverbials above all its arguments, and does so by rising into new

shells on top of the core VP. If a verb takes a PP adverbial, as in 'I sleep in the library', the VP has to rise past it, cf. '*I in the library sleep', but there is no reason why it should, as landing in the adverbial functional head would be enough to license the PP as its specifier, as it is when the specifier is just an AdvP without a complement (cf. 'I have very rarely slept out of my bed in the last year'). Under present assumptions, however, the verb must still rise, because the PP (but, crucially, not the AdvP) will violate the HFF unless it does.

33. Obviously, the same reasoning applies to the derivation of NPs with PP or CP modifiers in one or more specifier positions.

34. As pointed out above, the extraction of the subject from QP and DegP still requires positing a second specifier, but this is a general characteristic of any theory that adopts XPISH, and one allowed under Chomsky's multiple specifier theory. As to the fact that the subject must now be extracted from a specifier, instead of a complement, extractions from specifiers have long been attested. Corver (1997:125) mentions examples like 'How badly was he ___ short of funds?', but, of course, under current assumptions, all arguments are specifiers, and any wh-extraction, topicalization, or extraposition from a subject or an object is a case in point.

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