Kayne

Kap 8 & 9

Chapter 8
Relatives and Possessives

8.1 Postnominal Possessives in English

In (1) the phrase *of John's* is not plausibly a complement of *picture*.

(1) I have two pictures of John's.

(In fact, it can cooccur with a true complement of *picture*, as in *two pictures of Mary of John's*.) Nor can *of John's* in (1) be taken to be adjoined to some projection of N, since right-adjunction is illicit. In Kayne 1993 I proposed an analysis of this construction that is compatible with the LCA, based in part on Szabolcsi's (1981; 1983; to appear) analysis of Hungarian possessives.

Like English possessors, Hungarian possessors are prenominal. They can be in nominative Case, and when they are, they are preceded by the definite article; that is, Hungarian has the near equivalent of (*)*the John's two pictures*. I argued in Kayne 1993 that it is advantageous to take English to have a phonetically unrealized counterpart to the Hungarian D⁰, in other words, that *John's two pictures* has the structure (2) (see the discussion of (30) of chapter 3).

(2) D⁰ [John ['s [two pictures]]]

Szabolcsi argues strongly that Hungarian also has a (phonetically unrealized) indefinite D⁰ that can precede the possessor phrase; however, in that case the possessor must move into the specifier of that D⁰, where it picks up dative Case, and then out of the DP entirely.

I interpret this obligatory movement in terms of Case. In (2) the definite D⁰ plays a role in the Case licensing of the possessor *John*; that is, 's is not sufficient (and neither is possessive Agr in Hungarian).[1] However, indefinite D⁰ is not a Case licenser. This has the consequence in Hungarian of

forcing the possessor to move up past D⁰ to a valid Case-licensing position. English does not have the possibility of legitimizing dative Case in Spec,DP but can use another strategy, that of moving the NP (perhaps QP) *two pictures* to Spec,DP and inserting the preposition *of* in D⁰.

This turns D⁰ into a Case licenser and "rescues" the structure.

(3) [two pictures]ᵢ [[$_D$ of] [John ['s [eᵢ]]]]

I assume numerals like *two*, quantifiers like *every, many, some, any*, and also the article *a(n)*² to be generable within the NP/QP below *'s*. (Some of these cannot actually occur overtly below *'s* in English: for example, **John's some pictures*, although the equivalent is possible in Hungarian.)³ On the other hand, I take English *the* to be uniquely a D⁰, that is, not to be generable below *'s* (and I assume that the complement of *'s* cannot be DP). This implies that (3) can have no counterpart with *the* replacing *two*, and it thereby contributes to an account of the ungrammaticality of (4).⁴

(4) *?I found the pictures of John's/his.

This account of (4) needs to be fleshed out a bit more, as shown by (5).

(5) *?I found the two pictures of John's/his.

In addition to accounting for the fact that *the* cannot occur in the position of *two* in (3), we must make certain that *the* cannot take the phrase shown in (3) as its complement. For this, I will simply take as given that *the* cannot have a DP complement.⁵

8.2 Relative Clauses in English

The question now arises why (6) is fully grammatical.

(6) I found the (two) pictures of John's/his that you lent me.

I will propose that in (6) *the (two) pictures of John's/his* is actually not a constituent, contrary to the case of (4) and (5). Instead, *(two) pictures of John's/his that you lent me* is a constituent distinct from *the*. The category of that constituent clearly cannot be DP in (6), given what has just been said about (5). More generally put, it must be the case that *the*, although it cannot have, say, *(two) pictures of John's* as its complement, can have as its complement *(two) pictures of John's that you lent me*.

The only conceivable way that could be true is if the head of the phrase *(two) pictures of John's that you lent me* is not present in *(two) pictures of John's*. This in turn suggests directly that the head of the former is the complementizer *that*, in other words, that that phrase is a CP. For it to be a CP with *that* as its head, it must be the case that that CP contains *(two) pictures of John's* in its specifier. The most natural conclusion is then that that phrase appears in Spec,CP as the result of movement.

(7) [(two) pictures of John's]ᵢ [that [... me [eᵢ]]]

In other words, we have reached the conclusion that the raising/promotion analysis of restrictive relative clauses developed by Vergnaud (1974) must be basically correct.⁶

If we adopt the approach to reconstruction put forth by Chomsky (1993), we are led to the raising analysis of relatives for a second reason, given the ambiguity (comparable to the ambiguity in Chomsky's interrogative examples) with respect to the antecedent of the reflexive in (8).

(8) John bought the picture of himself that Bill saw.

The raising analysis of relatives provides a direct answer to the question of where relative clauses are attached. They are not plausibly complements of N, nor, from my perspective, can they be right-adjoined to N or to any projection of N (or D), for the simple reason that right-adjunction is banned in general. Instead, the raising analysis says that the relative clause in (8) is a complement of D ⟨*the*⟩: '[$_{DP}$ D⁰ CP]'.⁷ This structure is in fact the only one of those that have been proposed for relative clauses that is compatible with the present LCA-based theory.

Vergnaud's (1974) analysis has in common with that of Smith (1969) the idea that the relative clause is moved past the "head" of the relative (*picture of himself* in (8)) from a postdeterminer position. I am proposing that although the determiner and relative clause form a constituent, relatives lack any "head" position (apart from D⁰) outside the relative CP.

(9) the [picture of himself [that [Bill saw [e]]]]

The empty category in object position is bound by the phrase *picture of himself*, which has raised to Spec,CP. *Picture of himself* here is a phrase probably of category NP. The fact that the phrase in question contains an overt complement is not fundamental to the construction; that is, (10) will have an exactly parallel representation.

(10) the [$_{NP}$ picture] [that [Bill saw [e]]]

In some languages, for example, Romanian, the head noun of the NP in Spec,CP will raise out of CP and left-adjoin to D^0.[8]

(11) cartea   pe care   am   citit-o
     book-the pe which I-have read it

For English and similar languages, on the other hand, there seems to be no reason to postulate any more movement in the overt syntax than indicated in (10).[9]

The Romanian example (11) contains a relative pronoun. Relative pronouns appear to pose a problem, since if *picture* is in Spec,CP in (10), where is the relative pronoun in (12)?

(12) a. the picture which Bill saw
     b. the person who Bill saw

That is, the "head" of the relative and the relative pronoun appear to be competing for the same position.

Valentina Bianchi (personal communication) has pointed out that this tension should actually provide an account of the fact that (French and) Italian relative pronouns are generally impossible in the equivalent of (12).

(13) *la persona cui Bill ha visto
      the person who Bill has seen

(14) la persona con cui Bill ha parlato
     the person with whom Bill has spoken

Italian *cui* is impossible as a direct object relative pronoun, but possible as a prepositional object,[10] and the same holds of French *qui* in "headed" relative clauses.

(15) *la personne qui Bill a vue (same as (13))

(16) la personne avec qui Bill a parlé (same as (14))

An approach to (15)–(16) in terms of obligatory deletion of the relative pronoun was suggested in Kayne 1976. Thinking of Chomsky's (1981, p. 65) "avoid pronoun," this might be reformulated in contemporary terms as "avoid relative pronoun if possible" (in French and Italian; the grammatical relatives corresponding to (13) and (15) have the complementizer *che/que*). But certain French facts discussed in Kayne 1976, p. 261, cast doubt on this idea.[11]

(17) *l'homme la   femme de qui tu   as   insulteé
      the man the wife of who you have insulted

(18) l'homme avec la   femme de qui tu   t'es disputé
     the man with the wife of who you REFL-is argued
     'the man with whose wife you argued'

These show the same contrast as the previous pair (i.e., sensitivity to the presence of a preposition) yet do not readily lend themselves to an "avoid relative pronoun if possible" perspective.

I will pursue a different approach, one that incorporates Bianchi's suggestion, as follows: in French and Italian the structures in (13), (15), and (17) are ungrammatical because once *cui*, *qui*, and *la femme de qui* have filled Spec,CP, there is no "room" for *persona, personne* or *homme*. There is extra "room" in (14), (16), and (18) because the preposition in those examples provides it, namely, by making its specifier position available.

I begin by proposing that relative pronouns originate as determiners that are split off from their associated NP by movement of the latter.

(19) the [C^0 [he broke it with which hammer]]

Wh-movement of the PP to Spec,CP yields the structure in (20).

(20) the [with which hammer [C^0 [he broke it [e]]]]

The NP *hammer* then raises to Spec,PP (probably via Spec,*which*).

(21) the [$_{PP}$ hammer$_i$ [with which [e]$_i$]] [C^0 …

The plausibility of having an underlying constituent *which hammer* here is clear. I take *who* to have a similar status, despite the absence of **who man*,[12] and the same for Italian/French *cui/qui*. Thus, (16) will start out as (22).

(22) la [C^0 [Bill a parlé avec qui personne]]

Wh-movement of PP will yield (23).

(23) la [avec qui personne [C^0 […

Raising of *personne* to Spec,PP proceeds as in (21).

(24) la [$_{CP}$ [$_{PP}$ personne$_i$ [avec qui [e]$_i$]] [C^0 …

The contrasts found in (13)–(18) can now be accounted for in terms of the landing site for the NPs *persona, personne,* and *homme*. When the constituent moved to Spec,CP is headed by a preposition, those NPs can

raise to the specifier of that preposition. When, in French and Italian, no preposition is present, those NPs have no available landing site, and the result is therefore an ill-formed relative clause structure.

(25) *la [qui personne [C^0 ...

More precisely, the reason must be that a well-formed "headed" restrictive relative clause structure requires that *personne* reach in the overt syntax a position governed by D^0.[13]

The idea that the contrasts found in (13)–(18) depend on the availability of a Spec,PP is likely to be supported by what I take to be parallel contrasts found with reciprocals, in French and Italian. For example, in the latter:[14]

(26) *Hanno   visto   l'uno   l'altro.
      they-have seen   the one the other

(27) Hanno   parlato l'uno   con   l'altro.
      they-have spoken the one with the other

In (27) *l'uno* is arguably in Spec,PP (this is very close, modulo the LCA, to Belletti's (1982, p. 104) proposal that it is adjoined to PP). The idea would then be to say that (26) is ungrammatical because it contains no comparably adequate position for *l'uno*.

Although *personne* in (25) has no position that it can be successfully raised to, the same does not hold of corresponding English cases. For example:

(28) the [which picture [C^0 ...

The contrast between English, on the one hand, and French and Italian, on the other, can be stated by allowing English to use the specifier position of the *wh*-determiner itself as a landing site. That is, (28) becomes (29).[15]

(29) the [$_{CP}$ [$_{DP}$ picture$_i$ [which [e]$_i$]] [C^0 ...

(At present I have no account of why French and Italian differ from English in this respect.)

Essentially similar to (29), apart from the extra embedding, is (30).

(30) the [$_{CP}$ [[$_{DP}$ man$_i$ [who [e]$_i$]]'s wife] [C^0 ...

Here, the phrase *who man's wife* is moved to Spec,CP and *man* is moved to the inner Spec,DP (D = *who*). In both (29) and (30) the NP (*picture/man*) moves from the complement position of *which/who* to its specifier.

This kind of local movement is not sufficient to permit the following (even allowing for the additional movement across a preposition seen in (21) and (24)):

(31) the book the author of which I know personally

In this sort of example *book* must raise from the complement position of *which* up to Spec,*the* (and remain there). This longer movement of the relativized NP (*book*) is possible in English but absent in many other Germanic languages (see Webelhuth 1992, p. 129), for reasons that are unclear.

(32) ??the man the possibility of you marrying whom became a reality only yesterday

Here, the NP *man* must raise from the post-*whom* position to the specifier of the second *the*. The movement approach I am pursuing makes sense of the contrast with (33).

(33) *the man the possibility of who(m) marrying you became a reality only yesterday

The reason is that (33) involves extraction of *man* from within the subject of *marrying*, as opposed to from within the object, as in (32). Thus, the status of (33) has the familiar character of a subject island movement violation (whatever the optimal formulation of that is).[16]

Summing up this section so far, the raising/promotion analysis of relatives, which is by far the most natural analysis of relatives from an LCA perspective,[17] has led me to propose that both *the book that I read* and *the book which I read* involve movement to the specifier of the CP that is sister to D = *the*. In the first case, what is moved is just the NP *book*; in the second, what is moved to Spec,CP is the phrase *which book*. Further movement then takes place within *which book*, yielding *book which [e]*. In standard English the complementizer *that* cannot appear in the second type of relative.

(34) *the book which that I read

This is generally thought of in terms of an incompatibility between an overtly filled Spec,CP and an overtly filled C^0. However, under my proposal for *the book that I read*, that kind of relative violates the "Doubly Filled Comp Filter," unless that filter is now specified to see phrases in Spec,CP only when they are *wh*-phrases.[18]

As for relatives like *the book John read*, I follow the standard view that they differ from *the book that John read* only in having a null C^0. This small difference, combined with the idea that *book* is in Spec,CP, has an interesting effect.

(35) I just read the book about your ancestors ?(that) your son published last year.

When the NP moved to Spec,CP (here *book about your ancestors*) contains a complement, the zero complementizer yields less than full acceptability. This effect is very sharp when the NP moved to Spec,CP contains a relative itself.[19]

(36) I just read the book that's about your ancestors *(that) your son gave me last year.

Here it is *book that's about your ancestors* that has been moved to the Spec,CP position following *the* from the complement position following *me*. This so-called stacked relative structure is fine when the complementizer of the less embedded relative is *that*, but impossible if it is null.[20]

The idea that *book (that's) about your ancestors* is in Spec,CP makes it possible to relate these restrictions to those discussed by Emonds (1976, p. 19); his "surface recursion restriction" translates in my terms into the generalization that, in a number of cases, a phrase (with)in a specifier position cannot have an overt complement (of a certain sort).[21] This seems to hold of Spec,CP when relative C^0 is null, though not when it is nonnull, for reasons that are unclear.

8.3 N-Final Relative Clauses

Relative clauses in English and similar languages can be thought of as N-initial if one focuses on the CP that is sister to D^0. If the analysis sketched above is correct, then English relative clauses become N-initial only as a result of leftward movement. In *the picture of John that I showed you* the noun *picture* becomes initial in CP as a result of the phrase *picture of John* moving to Spec,CP. In *the picture of John which I showed you*, what moves to Spec,CP is the phrase *which picture of John*. The noun *picture* becomes initial in CP as a result of movement of *picture of John* to Spec,whichP.

Many languages have relative clause structures in which the noun follows the relative clause. In an LCA-based theory, these are predicted to have different properties from relative clauses of the N-initial sort.

The basic reason is that the N cannot come to be final in a way that mimics the way in which N comes to be initial in English relatives. In English N reaches initial position within CP as a result of movement of the NP containing it to Spec,CP in *that*-relatives, and as a result of movement of NP to Spec,*wh*P (in addition to movement to Spec,CP) in *which*-relatives. But specifier positions are always on the left (since specifiers are an instance of adjunction and since adjunction is always left-adjunction), no matter what the language. Therefore, the final position of N in relative structures in languages like Japanese cannot be attributed to movement of NP to Spec,CP (or any other specifier).

I will first consider two ways in which the N-final relative clause structure of languages like Japanese differs from the N-initial one of languages like English.[22]

(37) a. N-final relatives lack relative pronouns.
b. N-final relatives never display a complementizer that is identical to the normal complementizer of sentential complementation.

I will attempt to account for these two asymmetries in a maximally parsimonious way, namely, by showing that they essentially follow from the word order difference itself, given the LCA. (Under the standard assumption that word order can vary independently of hierarchical structure, it would be impossible to achieve this strong a result.)

The question of (37) is related to the question of how similar N-initial and N-final relatives are. To try to derive (37) from the word order difference alone amounts to taking the position that apart from that difference, the two types of relative clause construction are essentially identical. If that is so, then N-final relatives must involve the same 'D^0 CP' structure that N-initial relatives have.

Now many N-final languages lack any equivalent of English *the*, so that the D^0 will not be visible. Of those that do have a visible D^0, I will focus on Amharic as described by Gragg (1972), and I will take that language to provide a significant clue to the syntax of D^0 in N-final relatives. In Amharic the relative clause (which is V-final) precedes the definite article, which itself precedes the N. This suggests that the relative clause has moved into Spec,DP. However, if starting from 'D^0 CP' the entire CP moved to Spec,DP, then we would not expect N to follow D.[23] I conclude that the relative clause that precedes the definite article in Amharic is not CP.

Rather, the pre-D relative clause must be a projection smaller than CP; let us call it IP (abstracting away from the question of Tense vs. Agreement). The movement of IP to Spec,DP provides a way of obtaining a post-D noun, namely, by having IP-movement strand in Spec,DP the same NP that moves to Spec,CP in N-initial languages. Recall the structure given for English relatives above.

(38) the [$_{NP}$ picture] [that [Bill saw [e]]]]

Here the NP *picture* has moved to Spec,CP, leaving a trace in object position. Simplifying this representation, we have (39).

(39) the [$_{NP}$ picture] [that IP]]

Moving IP to Spec,DP yields (40).

(40) IP$_j$ [the [$_{NP}$ picture] [that [e]$_j$]]]

This corresponds to the observed structure in Amharic, except for the presence of *that*. Assume, then, that the relative clause configuration in Amharic is really closer to those English relatives that have a phonetically unrealized C^0.

(41) IP$_j$ [the [$_{NP}$ picture] [C^0 [e]$_j$]]]

This is what I take to be the structure of the Amharic construction in question.[24] What is usually called the relative clause is the IP that has been raised to Spec,DP, stranding a zero complementizer (and also stranding NP in Spec,CP).[25] (The fact that C^0 must be empty recalls the *that*-trace effect in English, though I will leave open the question of exactly how to exclude (40).) Generalizing from (41), N-final relative structures with no overt D^0 will have the representation (42), with D^0 and C^0 both empty.

(42) IP$_j$ [D^0 [$_{NP}$ picture] [C^0 [e]$_j$]]]

Summing up so far, I started by assuming that UG makes available for relativization a 'D^0 CP' structure,[26] where CP is the complement of D^0. UG prohibits the existence of the mirror-image complement-head structure '*CP D^0' and leads us instead to (42) as the correct representation for relativization structures where the relative clause precedes N.[27] The fact that such relative clauses must be IPs now provides an explanation for (37b).

Pre-N relative clauses cannot display the normal C^0 of sentential complementation because they are necessarily IPs, and cannot be CPs. (The

pre-N relative IP originates within a CP, but that CP must have a null C^0, which in any case follows N.) In English-type relativization structures, the corresponding IP remains in situ, so that C^0 can be overt and can be identical to the normal sentential complementizer. (Left open is the question of why in N-initial relatives the overt relative C^0 is sometimes identical (e.g., English, French, Italian, Spanish) and sometimes not (e.g., the Scandinavian languages) to the C^0 of sentential complementation.)

The fact that the preposed relative in (42) is of category IP rather than CP appears to provide at least a partial account of another cross-linguistic generalization noted by Keenan (1985, p. 160), namely, that with few exceptions the verbs of prenominal relatives are nonfinite/participial, having reduced tense possibilities as compared with finite verbs. On the other hand, relatives with fully finite verbs are common in postnominal relatives. This would follow if full finiteness is normally incompatible with IP being split off from C^0, as if, for example, finiteness required incorporation of I^0 to C^0 in the overt syntax (i.e., before LF/PF) and that relation could not be reconstructed subsequent to overt movement of IP away from C^0.[28]

Now consider *wh*-relatives in English.

(43) the [$_{CP}$ [$_{DP}$ picture] [which [e]$_i$]] [C^0 ...

In these constructions what moves to Spec,CP is the DP *which picture*. Within that DP the NP *picture* moves to Spec,*which*. To mimic this in an N-final structure—that is, to get N to be final and to do so in a way parallel to the derivation of (42)—one would have to move everything following *picture* to Spec,*the*. But the material following *picture* in (43) is not a constituent, and such a derivation is therefore precluded. (IP-movement to Spec,DP might be possible but would not yield an N-final structure.)[29] Thus, the presence of a *wh*-word in addition to the NP *picture* turns out to be incompatible with having N be final. Put another way, N-final relativization does not admit the presence of a relative pronoun. Hence, we have succeeded in deriving (37a).

A further striking difference between N-initial and N-final relative structures is discussed by Cole (1987): internally headed relatives are found only where one would expect the latter, namely, in languages that are at least partially head-final. Cole proposes that internally headed relatives actually have a null anaphoric "head" and that the limitation to head-final structures is due to the general condition that an anaphor must not both precede and c-command its antecedent (which the anaphoric

head would do in an N-initial language). I agree with Cole that there is a null "head" and also that the limitation to N-final structures is due to a c-command violation. However, Cole specifically argues for a formulation mentioning both c-command and precedence. If I am correct in taking left-hand relative clauses to be left-adjoined higher than N (as forced by the LCA), there is no longer any need to mention precedence, since the left-hand relative is not c-commanded by the (null) "head," whereas the right-hand relative in languages like English would be.

I would like to briefly suggest an analysis of internally headed relatives slightly different from Cole's, as follows. Recall the analysis proposed above for N-final relativization.

(44) IP_j [$_{CP}$ [$_{NP}$ picture] [C^0 [e]$_j$]]]

Starting from a 'D CP' structure, the NP *picture* is moved to Spec,CP and then the IP complement of the empty C^0 is moved to Spec,DP. That IP contains the trace of *picture*.

(45) [$_{IP}$ ... [e]$_i$ ...] [D^0 [$_{CP}$ [$_{NP}$ picture]$_i$ [C^0 ...

Assume, however, that Chomsky (1993) is correct in proposing that a trace is actually a copy of the moved constituent. Then the relevant part of (44)/(45) is more exactly (46) (prior to PF deletion).

(46) [$_{IP}$ ... [picture]$_i$ ...] [D^0 [$_{CP}$ [$_{NP}$ picture]$_i$ [C^0 ...

My proposal now is that internally headed relatives are identical to (45)/(46) except that instead of the first instance of *picture* being deleted, as in (45), it is the second that is deleted.

(47) [$_{IP}$ ... [picture]$_i$ ...] [D^0 [$_{CP}$ [$_{NP}$ e]$_i$ [C^0 ...

From this perspective, the reason that N-initial relativization of the English type has no internally headed counterpart could be largely as Cole proposes. The English structure is (48).

(48) D^0 [$_{CP}$ picture] [C^0 [$_{IP}$ ... [e]$_i$ ...

An internally headed counterpart would have to delete (at PF) the first instance of *picture* instead of the second.

(49) *D^0 [$_{CP}$ [$_{NP}$ e]$_i$ [C^0 [$_{IP}$ ... [picture]$_i$ ...

This will be excluded if we adopt (50).

(50) A given chain link c_k can license PF deletion of another link c_l of the same chain only if c_l does not c-command c_k.

(In (46) neither the first nor the second instance of *picture* c-commands the other, so there are two possible outcomes, (45) and (47).)[30]

It is to be noted that (50) also covers the classical cases of lowering violations (see Fiengo 1977).

8.4 Reduced Relatives and Adjectives

At the beginning of section 8.2 I discussed contrasts like the following:

(51) *?We were admiring the sweater of his.

(52) We were admiring the sweater of his that was lying on the sofa.

The contrast was attributed in part to the fact that in (52) *sweater of his* does not originate in the post-*the* position but rather moves there (i.e., to Spec,CP) from within the relative IP. Now consider (53).

(53) (?)We were admiring the (one) sweater of his given to him by his wife.

(53) seems to have much more the status of (52) than that of (51), suggesting that it has some property or properties significantly in common with the former. On the other hand, (53) allows neither an overt complementizer nor a *wh*-phrase:

(54) *the sweater of John's that/which given to him by ...

This might suggest that what follows *the* in (53) is IP, and not CP. However, Vergnaud (1974, pp. 173ff.) has noted one respect in which these 'reduced' relatives exhibit the behavior of ordinary relatives.

(55) I just read the book that you told me about *(that) your son gave me last year.

(56) I just read the book that you told me about *?(that was) given to me by your son last year.

When relatives are "stacked," the second one can neither have a zero complementizer nor be "reduced." These two restrictions could be unified if the latter involved a zero complementizer, too.

Let us therefore consider the following analysis, for a simple case like *the book sent to me*:

(57) the [$_{CP}$ book$_i$ [C^0 [$_{IP}$ [e]$_i$ sent to me

The participial IP is embedded in a CP (see Kayne 1993; Mouchaweh

1985). (56) is deviant as a reduced relative because Spec,CP contains too complex an NP (*book that you told me about*) for an empty C^0, as in the discussion of (36). (53) is acceptable because *the* has a CP complement, as in (52) (and unlike the case of (51), where the complement of *the* is a DP). The impossibility of *that* in (57) might be reducible to a *that*-trace effect.[31] The impossibility of *which* in (58) might have to do with Case.

(58) *the $[_{CP}$ [book]$_i$ which [e]$_i]_j$ $[_{C^0}$ $[_{IP}$ [e]$_j$ sent ...

Assume that *book* in both (57) and (58) receives Case through a (n incorporation) relation with *the* (recall the discussion of (11)) and further that Case on *book* is sufficient to license its trace in (57).[32] The empty category in (58), on the other hand, is not the trace of *book*, and so plausibly cannot be licensed in the same way, or in any other way, whence the violation.

Lack of Case on the Spec,IP position is also a plausible reason for the impossibility of reduced relatives like the following, though more will need to be said about the fact that PRO in that position is not possible either.[33]

(59) *the book John fond of

Now consider (57) again, but this time with *book* not raised to Spec,CP and with I^0 and a lower trace indicated.

(60) the $[_{CP}[_{C^0}$ $[_{IP}$[book]$_i$ $[_{I^0}$ $[_{XP}$[e]$_i$ sent to me

If nothing further happens overtly, this derivation is presumably ruled out because Spec,CP is not filled (see note 30). Assume, however, that in (60) abstract incorporation of *book* to *the* is possible via C^0, so that *book* poses no Case problem. Then let us move XP to Spec,CP, eliminating the potential violation based on an unfilled Spec,CP.

(61) the $[_{CP}$ XP$_j$ $[_{C^0}$ $[_{IP}$[book] $[_{I^0}$ [e]$_j$

This structure corresponds to the ungrammatical (62).

(62) *the sent to me book

Arguably, (62) violates the same constraint as (55)/(56), namely, that the specifier of the empty complementizer is filled by a phrase (*sent to me*) whose head (*sent*) has an overt complement (*to me*). If we replace *sent to me* by a comparable phrase with no overt complement (but with some material to the left of the head), then this violation disappears.

(63) the recently sent book

(Compare *the recently arrived letter*, *the much referred to hypothesis*, *the little slept in bed*.)[34]

Thus, examples like (63) are seen to be a subtype of relative clause structure with preposing, in particular insofar as they are derived from the same kind of underlying structure (60) as ordinary relative clauses. Note that in that case there is no need to take pseudopassives like (*much*) *referred to* or (*little*) *slept in* to be lexical items.[35]

In languages like German the construction exemplified in (63) is more productive than in English, allowing cases like *the by John recently sent book*. I take the German construction to be parallel to the English one (i.e., to involve (60)/(61)), with the independently needed difference that XP in German can contain complements to the left of participial V (these complements must have been moved to intermediate specifier positions), just as V in German can normally end up being preceded by complements in a way not available in English.

The idea that (63) is a relative clause structure of the form 'D⁰ CP' is supported by the following contrast, parallel to that between (51) and (53):

(64) *?The sweater of John's is beautiful.

(65) ?The recently arrived sweater of John's is beautiful.

An obvious question is whether prenominal adjectives ever display the same behavior as these prenominal participial phrases.

(66) ?The yellow sweater of John's is beautiful.

This sentence seems to me to be close in status to the participial example, especially if the adjective is stressed.[36] This suggests a representation with a CP complement of *the*.

(67) the $[_{CP}$ $[_{XP}$[e]$_i$ yellow]$_j$ $[_{C^0}$ $[_{IP}$[sweater of John's]$_i$ $[_{I^0}$ [e]$_j$

Sweater of John's $_i$ is in Spec,IP. The complement of I⁰, '$[_{XP}$ [e]$_i$ yellow]$_j$,' has been moved to Spec,CP.

I have claimed that *the book recently sent to me* and *the recently sent book* are essentially similar except that the latter involves the preposing of *recently sent* to the specifier position of the CP sister to *the*.[37] I have also suggested that some (stressed) prenominal adjectives can follow the same kind of derivation, as in *the yellow sweater of John's*, that is, that (stressed) *yellow* can be preposed to Spec,CP from its original position following *sweater of John's* (which is in Spec,IP). This leads to the question of the unacceptability (even with stress) of (68).

(68) *The sweater of John's yellow is really beautiful.

Although I have no explanation for the fact that simple adjectives cannot remain postnominal (i.e., post-DP, with DP = *sweater of John's* contained in Spec,IP; see (57)) in the way that participial phrases can (see Chomsky 1981, p. 166), it is of interest to mention a case in French that shows a parallel difference between simple adjectives and participials (see Ronat 1977).

(69) celui envoyé à Jean
    celui sent   to Jean

(70) *celui jaune
    celui yellow

(71) le livre jaune
    the book yellow

Celui seems to be bimorphemic, with *ce* the demonstrative root and *lui* a pronoun. It would normally be translated as 'the one'. It can be followed by a full relative (*celui qui a été envoyé à Jean* 'the one that has been sent to Jean') and by a reduced participial relative, but not by a simple adjective.

If I am correct in interpreting (70) to indicate that the prohibition seen in English (68) is valid for French, too, it is surprising that French allows (71).

A solution is proposed and justified by Cinque (1993b), as follows. There are two quite different sources for adnominal adjectives. In addition to the "reduced relative" source that I have been discussing,[38] APs can be generated in specifier positions (of various functional heads that occur) between D and N.

As Cinque argues, and as argued by others whom he cites, (71) is an instance of an AP generated above N. The observed order in (71) is due to the N having raised past the AP to a higher functional head (which is lower than D).

It should be noted, however, that the idea of invoking N-raising as a means of accounting for the French/English contrast that holds for (71) is independent of the idea of base-generating *jaune/yellow* in a specifier position between D and N. Let F be one of the functional heads intervening between D and N under that analysis, and consider again (61), repeated in essence here.

(72) the [$_{CP}$ [$_{XP}$ yellow$_j$] [C^0 [$_{IP}$ [book] [I^0 [e]$_j$

We have seen reason to take English to allow XP to be an adjective phrase (preposed from the predicate position within IP), as indicated. The French counterpart would be (73).

(73) le [$_{CP}$ [$_{XP}$ jaune$_j$] [C^0 [$_{IP}$ [livre] [I^0 [e]$_j$

Adding F below D but above CP yields (74).

(74) le [$_{FP}$ F^0 [$_{CP}$ [$_{XP}$ jaune$_j$] [C^0 [$_{IP}$ [livre] [I^0 [e]$_j$

Assume that *livre*, the head of the phrase in Spec,IP, can raise overtly in French to C^0 [39] and then raise again to F^0. Then we can derive (71) by N-raising without needing to have two separate sources for adjectives like *yellow/jaune*.

All such APs will originate in predicate position and prepose to their subject NP by moving to Spec,CP. No further overt movement is necessary for English *the yellow book*, just as no further movement is needed for *the recently arrived book*. In French N-raising will apply to the corresponding structure in (74), to yield the observed *le livre jaune*.[40]

8.5   More on Possessives

Returning to (70), we might now say that *celui* is not an N. Rather, it is an XP composed of *ce* + *lui*. The pronominal part *lui* can alternate with its plural and feminine (singular or plural) counterparts, yielding the following forms:

(75) ceux, celle, celles = ce + eux, ce + elle, ce + elles

But there can be no further material inside this XP, and in particular no Agr projection that would yield agreement on the demonstrative:

(76) *ces + eux, *cette + elle, *ces + elles

Presumably because of its internally defective character, *celui* and the like cannot be interpreted in "isolation"; that is, (77) is not possible.

(77) *Jean a vu celui.
    Jean has seen celui

The grammaticality of (69) (and similarly for the corresponding full relative) suggests that *celui* can only be interpreted in Spec,CP.

If so, then given *celui de Jean* '... of Jean', *celui-ci* '... here', we would be led to conclude that both *-ci* and the possessive *de Jean* (with *de*

a prepositional complementizer, as indicated in (78)) involve a CP structure.[41]

(78) D^0 [$_{CP}$ celui]$_j$ [de [$_{IP}$ Jean [I^0 e]$_j$ ...

In standard French D^0 is necessarily empty with *celui*. More regular would be the following, with an overt D^0:

(79) la [$_{CP}$ voiture]$_j$ [de [$_{IP}$ Jean [I^0 e]$_j$ ...
    the   car   of   Jean

De here serves to Case-license *Jean*. The relation between *voiture* and *Jean* would presumably be established within IP.[42]

There is, however, a strong resemblance between the post-D^0 structure in (79) and the structure given in section 8.1 for English *two pictures of John's*.

(80) [two pictures]$_j$ [of [John ['s [e]$_j$ ...

There, I took *of* to have been inserted in D^0, and *two pictures* to be in Spec,DP. Even if the categorial difference between CP and DP is slight, as Szabolcsi (1992) argues, let me recast (79) so as to make it more explicitly a DP structure, using, however, the symbol D/P as in Kayne 1993 to represent a prepositional determiner *de* (comparable to a prepositional complementizer).[43]

(81) la [$_{D/PP}$ voiture]$_j$ [de [$_{IP}$ Jean [I^0 e]$_j$ ...

This requires restating the condition on *celui* to be that *celui* must occupy Spec,XP, where XP is sister (modulo the F of (74)) to some D^0 (*la* in (81)). And we can now take I^0 in (81) to be an abstract counterpart to English *'s*, making the possessive interpretation within IP more straightforward. More specifically, I take the D/PP of (81) to be parallel to the D/PP that occurs as sister phrase to the abstract copula in (82).

(82) ... BE [$_{D/PP}$[D/P^0 [$_{IP}$ Jean [I^0 [voiture]$_j$ ...

As I argued in Kayne 1993, to a significant extent in agreement with Freeze (1992), this structure is what underlies (83).

(83) Jean a   une voiture.
    Jean has a   car

Jean, which could not be Case-licensed in Spec,IP in (82), moves from there to Spec,D/PP, and then on to Spec,BE. The second step is licensed by incorporation of D/P^0 to BE. D/P^0 + BE is spelled out as HAVE.[44]

On the other hand, in (81) *Jean* is Case-licensed in situ, and it is the "possessed" phrase *voiture* that raises to Spec,D/PP.

Although details remain to be filled in, this analysis succeeds in expressing the relation between *la voiture de Jean* and *Jean a une voiture* without having to derive the former from a full relative containing the verb *avoir* 'have'. Instead, the two share significant structure.

Despite not being or containing a full relative, the possessive structure in (81) is similar to a relative clause structure, with *de* corresponding to *that*.[45]

(84) la [$_{D/PP}$[$_{NP}$ voiture]$_j$] [de [$_{IP}$ Jean [I^0 e]$_j$ ...

(85) the [$_{CP}$[$_{NP}$ picture]$_j$] [that [$_{IP}$ Bill saw [e]$_j$ ...

Now when the noun is not relational (i.e., not *sister*, etc.), English does not allow (84) at all with human possessors.[46]

(86) *the car of John, *the car of your older brother

Possible, on the other hand, is *the dreams of my youth*, where *my youth* is plausibly an inanimate possessor of *dreams*.

(87) the [$_{D/PP}$[$_{NP}$ dreams]$_j$] [of [$_{IP}$ my youth I^0 [e]$_j$ ...

The parallelism between (87) and (85) allows a unified account of the following paradigm noted by Vergnaud (1974, p. 265):

(88) *the Paris

(89) the Paris that I knew

(90) the Paris of my youth

In English a proper name (of a city), like *Paris*, can normally not occur with *the*. The approach to relatives and possessives being developed here permits one to understand straightforwardly why the two constructions act alike in licensing *the*. (In a way somewhat similar to what was said above about French *celui*, the generalization could be stated (abstracting away from the F of (74)) by saying that a proper noun (NP) is prohibited in English from being the sister phrase to a definite article.)[47]

Though not a proper noun, English *ones* has a similar distribution.[48]

(91) *John remembers the ones.

(92) John remembers the ones he had last night. ("dreams")

(93) John remembers the ones of his youth.

Assuming essentially the same generalization that holds for proper nouns, the following contrast is of interest:

(94) In this school, the students from New York are taller than the ones from New Jersey.

(95) *In this school, the students of physics are taller than the ones of chemistry.

In discussing this kind of example, Jackendoff (1977, p. 59) suggests that the difference is due to the difference in hierarchical status between *from New Jersey* and *of chemistry*, the former being immediately dominated by N′, the latter by N″. Furthermore, *one(s)* is incompatible with other material within N′. The different attachment levels are also reflected in relative ordering facts.

(96) the students of chemistry from New Jersey

(97) *the students from New Jersey of chemistry

Jackendoff's approach to (94)–(97), which does not cover (91), is not compatible with the present theory, which prohibits any structure of the following form, with the phrase *from New Jersey* taken either as a complement of N′ or as a phrase right-adjoined to N′:

(98) *the [$_{N''}$ [$_{N'}$ students of chemistry] [from New Jersey]]

The reason is that the phrase *from New Jersey* asymmetrically c-commands the subparts of the phrase *students of chemistry* and would therefore have to precede it, which it does not.

Instead, these facts should be looked at as follows. *Ones* is not allowed to head an NP sister to *the* (again abstracting away from the F^0 of (74)). This property, although itself in need of explanation, has the advantage (as compared with the idea that *ones* is incompatible with other material under N′) of excluding (91) and (95) simultaneously. (92)–(94) are admissible because they are all instances of the embedded CP or D/PP structure proposed above. For example:

(99) the [$_{D/PP}$[$_{NP}$ ones$_i$,] [D/P^0 [$_{IP}$[e]$_i$ I^0 [from New Jersey] ...

Here the NP *ones* is not sister to *the*.

(96) also has the structure shown in (99), with the NP *ones* replaced by the NP *students of chemistry*. The ungrammaticality of (95) indicates that the NP *students of chemistry* can only be a complement of *student*, in other words, that it

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cannot occur as a predicate, in the position of *from New Jersey* in (99). This suffices to account for (97), as well.[49]

Returning to possessives, I note that the difference between English 's and its abstract French counterpart is presumably what is responsible for the fact that French allows no Case licensing of the lexical possessor if the D/P⁰ sister to IP remains empty.

(100) John's car = [D/P^0 [$_{IP}$ John ['s [car]]]]

(101) *Jean voiture

When D/P is definite and 's is present in I^0, *John* can remain in situ. The combination of a definite but unrealized D/P with the abstract possessive I^0 of French does not suffice to allow *Jean* to do so. Another difference between French and English concerns the definite article.

(102) la voiture de Jean

(103) *?the car of John's

This could be due to some difference between *la* and *the*, and/or it could be attributed to 's. For example, it might be that 's must raise in LF to the D^0 occupied by *of* (which might be adjoined to D^0) and that an overt definite article does not admit a sister complement headed by 's.[50] (In *the car of John's that I most admire* the sister phrase of *the* is the CP headed by *that*.)

To conclude this section, the analysis given of *la voiture de Jean* and of *a car of John's* is straightforwardly compatible with the LCA and more specifically with my claim that UG countenances no right-adjunction at all. *De Jean* and *of John's* are not adjoined to *voiture/car*; instead, they are phrases (headed by *de/of*) whose specifier position contains *voiture/a car*. It is in this way that UG allows for possessive constructions of this sort.[51]

8.6 More on French De

The IP in (84), repeated here, expresses a possessive relation, with the possessed NP fronted to Spec,D/PP.

(104) la [$_{D/PP}$[$_{NP}$ voiture$_i$] [de [$_{IP}$ Jean [I^0 [e]$_i$ ...

One might wonder if IP could in other instances—say, with an adjectival predicate, with the AP fronted—have the interpretation of a simple predication. The answer appears to be yes, at least in French.[52]

(105) le rouge, de crayon
the red of pencil

(106) le [D/PP[AP rouge_j] [de [LP crayon [I° [e]_j ...

This is always pronounced with dislocation intonation (as indicated by the comma), but in the spirit of section 7.3. I take that property to be orthogonal to the question of internal structure. The embedded IP in (106) directly expresses the predication relation between the AP *rouge* and its subject NP *crayon*. *De* is the same D/P° as in (104). The difference in interpretation that holds between (104) and (106) is determined entirely within IP.

Quite similar (but without dislocation intonation) is the following, with fronting of a predicate NP:[53]

(107) cet imbécile de Jean
that imbecile of Jean

(108) cet [D/PP[NP imbécile_j] [de [LP Jean I° [e]_j ...

Although (105) has no counterpart in English, (107) may have one, if we abstract away from determiner differences (which, as Napoli (1989, p. 213) notes in her study of Italian and English, are independent of this construction).

(109) that idiot of a doctor

(110) that [D/PP[NP idiot_j] [of [LP a doctor I° [e]_j ...

The analysis indicated in (108)/(110) differs from Napoli's (1989, p. 206) in expressing in a direct and familiar way within IP the subject-predicate relation understood to hold between *Jean* and *imbécile* and between *a doctor* and *idiot*.

French has a third construction involving a predication interpretation and *de* that I will discuss in somewhat more detail.

(111) quelqu'un de célèbre
someone of famous

(112) Jean en a acheté trois de rouges.
Jean of-them has bought three of red

(113) Jean a acheté TROIS voitures de rouges (pas quatre).
Jean has bought three cars of red (not four)

(The best English renditions are *someone famous, Jean bought three red*

ones, and *Jean bought THREE red cars (not four)*.) As discovered by Azoulay-Vicente (1985), this use of *de* before AP is found only in constructions that are plausibly analyzed as involving variables. The position of *quelqu'un* will be filled by a variable at LF, under standard assumptions. (113) involves focalization, which gives rise to an operator-variable structure in LF, following ideas going back to Chomsky 1976. The same sequence of words with no focal stress is ungrammatical.

(114) *Jean a acheté trois voitures de rouges.

Finally, Azoulay-Vicente (p. 228) argues that *en*-cliticization quite generally creates focalization on the quantifier/numeral left behind (*trois* in (112)).

It seems highly implausible to take these *de*-AP phrases to be complements of N (e.g., of *voitures* in (113)), if only because they seem so similar to relative clauses. (That similarity, in particular as concerns behavior with respect to the A-over-A Principle, in fact led to the suggestion in Kayne 1975, sec. 2.10, that *de*-AP phrases were of category S.) The plausibility of taking these phrases to be N complements is further diminished by the existence of some cases of "stacking."[54]

(115) quelqu'un d'autre de célèbre
someone of other of famous
'someone else famous'

Let me take up, instead, the similarity between these *de*-AP phrases and relative clauses. As noted in the discussion following (8), relative clauses cannot be right-adjoined to any node. The same holds for *de*-AP, in all the examples just given. As in the case of relative clauses, I am consequently led to a raising/promotion analysis of *de*-AP phrases.

The required structure has in effect already been provided in (106), which parallels a standard relative clause structure, except that the IP is neither finite nor infinitival and the D/P° *de* occurs instead of C°.[55] There are two possible ways of attributing to the *de*-AP construction the structure of (106). Starting from '[D/PP[de [LP NP [I° AP]]]', one could envisage moving NP to Spec,D/PP. With NP = *quelqu'un* and AP = *célèbre*, that would produce a string that looked like (111), but it would not provide any immediate means of accounting for the contrast between (113) and (114), or for certain other properties of this construction that I will address below. Finally, it would lead to a *that*-trace-type violation, with *de* playing the role of *that* (see the discussion of (57)).

The second possibility, which is not excluded by *that*-trace consider-ations, is to start from a structure like (106), except that the positions of NP and AP are reversed.

(116) D^0 [$_{D/PP}$[de [$_{IP}$ AP [I^0 NP ...

The NP then moves to Spec,D/PP, yielding (117).

(117) D^0 [$_{D/PP}$ NP$_j$ [de [$_{IP}$ AP [I^0 $_{NP}$ e$_j$] ...

With NP = *quelqu'un* and AP = *célèbre*,[56] this again produces (111), as desired.

In addition to a *that*-trace advantage, the proposal indicated in (117) allows us to begin to understand the focalization requirement of (113) versus (114), at the very least in terms of the fact that (105) itself involves focalization of the AP *rouge* (and necessarily nonfocalization of the NP *crayon*). In other words, there is a generalization in effect that spans those D/PP structures headed by *de* that contain an IP complement of *de* that expresses a predication relation.

As for why the otherwise comparable possessive structure of (104) does not show the same effect, let me tentatively suggest that the difference depends on the fact that the phrase in (106) is an NP and in (117) an AP. Now NP and AP have in common that they are predicative categories and not potential arguments, unlike DP. This makes it possible to state the distinc-tion as follows: movement of NP/AP that crosses another predicative category XP (where XP c-commands the starting position of NP/AP) and also crosses a c-commanding *de* is possible only if the landing site is an operator position,[57] that is, the trace left by such movement must be interpreted as a variable.

We can now interpret (113) versus (114) as indicating that the NP (*trois voitures*) moved to Spec,D/PP must receive focal stress in order to be-licensed as an operator binding that variable.[58] In addition, consider the following contrast noted by Azoulay-Vicente (1985, p. 216):

(118) Qui de sérieux as-tu   rencontré?
       who of serious have-you met

(119) *Quel   homme d'intelligent connais-tu?
       what/which man   of intelligent know-you

Qui in (118) is the *wh*-counterpart of *quelqu'un*, so that *qui de sérieux* will have the analysis given in (117). The deviance of (119) is unexpected, until

one notices the resemblance between this contrast and the one pointed out by Cinque (1990, p. 74) for Italian.

(120) Qualcosa, farò.
      something I-will-do

(121) Qualche sbaglio *(lo) fa   anche Gianni.
      some   mistake   it does also   Gianni

Preposing a non-*wh* DP in Italian is normally not possible in the absence of a coindexed clitic; (121) is a representative example. An exception is constituted by bare quantifiers such as *qualcosa*. Cinque takes such bare quantifier phrases to be intrinsic quantifiers, that is, to have the special property, as compared with *qualche sbaglio*, of being able to license a variable (in the position of the trace). The trace of a preposed DP must be licensed either as a variable or by a clitic, whence the observed contrast.

Now I have just suggested that the structure in (117) has the property that the trace of the moved NP must be a variable. This poses no problem in (118), on the reasonable assumption that French *qui* is also a bare quantifier.

(122) D^0 [$_{D/PP}$ qui$_j$ [de [$_{IP}$ sérieux [I^0 [$_{NP}$ e$_j$] ...

On the other hand, *quel homme* in (119) is not a bare quantifier, just as *qualche sbaglio* is not, and therefore does not properly license its trace as a variable.[59] Note that the parallelism between the phenomenon studied by Cinque and the one under discussion here holds to a still greater level of detail, if it is correct to think that the focus-based contrast between (113) and (114) is essentially like the following one in Italian:

(123) GIANNI ho   visto.
      Gianni   I-have seen

(124) *Gianni ho visto.

Cinque notes that a preposed DP that is neither a bare quantifier nor a *wh*-phrase is legitimate if given focal stress, which licenses it as an operator-variable construction.[60]

Azoulay-Vicente (1985, p. 25) points out that *de*-AP does not allow a floating quantifier to the left of AP and that this contrasts with the behav-ior of ordinary relatives.

(125) Mireille en   a   lu   dix qui sont tous intéressants.
      Mireille of-them   has read 10 that are all interesting

(126) *Mireille en   a   lu   dix de tous intéressants.
        Mireille of-them has read 10 of all interesting

Assuming Sportiche's (1988) reanalysis of floating quantifiers as stranded quantifiers, this follows from the fact that there is no pre-AP subject position in the *de*-construction in (117), although there is in the finite relative.[61]

The '[IP AP [I⁰ NP ...]]' substructure of (116), which I have been arguing to be the optimal way of expressing the (partial) similarity between the *de*-AP construction and relative clauses, need not be taken to correspond to an initial structure. Without the main proposal being affected, it could well be that the AP is moved to Spec.IP from a post-NP position, so that a more accurate representation would be (127).

(127) $[_{IP}$ AP$_j$ $[I⁰$ NP $[F⁰$ [e]$_j]]]$

If so, this IP substructure would recall Moro's (1991; 1993) proposal concerning copula sentences like (128).

(128) The cause of the riot was a picture of the wall.

According to his proposal, the phrase *the cause of the riot* moves to Spec.IP from the predicate position within the small clause complement of the copula.[62]

(129) the cause$_i$ was [[a picture] [F⁰ [e]$_i$]]

8.7 Nonrestrictive Relatives

In English nonrestrictive relatives contrast with restrictive relatives in that the former are associated with an intonation break, usually indicated by commas, that is absent in the latter.

(130) The young man, who I saw yesterday, is a linguist.

(131) The young man who I saw yesterday is a linguist.

I have argued that restrictive relatives must involve a structure of the form '[D⁰ CP]', with movement of the relativized head (and *wh*-word) to Spec.CP. A priori, it might be that the intonation break present with nonrestrictives reflects a syntactic structure quite distinct from that of restrictives, for example, one in which the nonrestrictive is adjoined to NP or DP. However, right-adjunction is not compatible with the present theory.

I will prefer to pursue a different course and to reevaluate the significance of the intonation break in the light of the approach taken in section 7.3 concerning Romance right-dislocation. There I argued that the particular intonation associated with (Romance) right-dislocation is best understood as a PF property linked (probably via a feature present in the "overt" syntax) to an LF property of that construction, namely, that the right-dislocated phrase (or phrases) moves leftward in LF to a position in which a left-dislocated phrase (or phrases) could be found overtly. This means that the right-dislocated phrase actually occupies a complement position and that the special intonation in question is associated with that complement position.

The parallel proposal that I would like to make for relatives is that restrictives and nonrestrictives differ at LF but do not differ structurally in the overt syntax.[63] More specifically, nonrestrictives partake of the same '[D⁰ CP]' structure as restrictives. Right-adjunction plays no role in nonrestrictives, any more than it does in restrictives.

The idea that UG treats the two types of relative clause in a more unified fashion than English might lead one to believe is supported by the claims made by Kuno (1973, p. 235), de Rijk (1972, p. 134), Keenan (1985, p. 169), Mosel and Hovdhaugen (1992, p. 635), and Craig (1977, p. 194), to the effect that Japanese, Basque, Malagasy, Samoan, and Jacaltec do not display the intonational (or other) differences between restrictives and nonrestrictives that English does.[64] On the other hand, English is not unique. French and Italian both have comparable intonational differences. As a first approximation, it appears that an obligatory intonational difference of the English sort is found only in languages with postnominal relatives. However, I do not think that the position of the noun (more exactly, the relativized NP) is at the heart of the intonational matter.

Consider, for example, the difference between the restrictive and nonrestrictive interpretation of English adjectives.

(132) John was telling us about the industrious Greeks.

Although it is slight, there seems to be a difference in intonation here, too. In section 8.4 I argued that prenominal adjectives can be derived from postnominal restrictive small clause relatives. A natural extension would be that on their nonrestrictive interpretation prenominal adjectives can be derived in parallel fashion and that the slight intonational difference between the two readings of (132) is akin to the more robust one seen in (130) versus (131). This suggests that it is not exactly the postnominal

position of the full relative that is at issue with respect to the two types of relative, but the positional property that the English full relative shares with the English adjective, namely, the property of following the definite article.

It is not controversial to say that restrictives differ from nonrestrictives in that the former are in the scope of the definite article in (131) whereas the latter are not in the scope of the definite article in (130). It is natural to take this scope difference not to be a fact about overt syntactic structure but to be a fact about LF.

More specifically, the proposal is that both kinds of finite relative clause enter into the structure 'D⁰ [CP NP [C⁰ IP]]', where NP has moved into Spec,CP from within IP. English restrictives and nonrestrictives share this property in the overt syntax. However, in nonrestrictives further movement takes place at LF; namely, IP moves to Spec,DP, yielding for nonrestrictives the structure (133).

(133) $[_{DP}$ IP$_1$ $[D^0$ $[_{CP}$ NP $[C^0$ $[e]_1]]]]$

Subsequent to this LF movement, the IP of the nonrestrictive is no longer within the scope of D^0.[65]

We can think of this LF movement as being triggered for nonrestrictives by a syntactic feature present in the overt syntax. We can then take the intonation break associated with English nonrestrictives to be determined in PF by the same feature. Assume that this feature is deleted immediately subsequent to IP-movement. In a language like English that deletion will take place in LF and will not be able to affect the presence of the feature in PF. Consequently, the feature will be present in PF to trigger the intonation break.[66]

Now consider a language that moves the IP of all relatives up to Spec,DP overtly. In such a language the relevant feature on nonrestrictives disappears before the point at which the derivation branches off to PF. Consequently, no intonation break is triggered. This accounts for the lack of intonation break for nonrestrictives in at least Japanese and Basque.[67]

The idea that nonrestrictives are essentially like restrictives in the overt syntax—and more specifically, that nonrestrictives, too, involve the raising/promotion of the relativized NP from within IP up to Spec,CP—is supported by the existence of reconstruction effects in nonrestrictives.

(134) These pictures of himself, which (Mary thinks that) John would be flattered to receive from us, are really quite awful.

If *pictures of himself* raises from the object position of *receive*, then the acceptability of (134) can be understood as in Chomsky 1993, pp. 37ff.[68] Similarly, there seems to me to be a slight Condition B effect in (135), akin to that in (136).

(135) These pictures of him, which John received yesterday, are of poor quality.

(136) John received these pictures of him yesterday.

And I find a partial Condition C effect in (137).

(137) Those stories about John, which he really gets upset at, are not even true.

Another kind of reason for thinking that nonrestrictives are in a strong sense syntactically parallel to restrictives concerns the kind of restriction found with French and Italian relative pronouns that was discussed starting at (13). The relative pronouns *qui* and *cui* can appear as prepositional objects with pied-piping of the preposition, but not as direct objects. This holds for nonrestrictives, too. For example, consider the French sentence (138).[69]

(138) *Jean, qui je connais bien, est intelligent.
      Jean who I know well is intelligent

Under a raising/promotion approach to nonrestrictives, (138) can be accounted for as in the above discussion, in terms of the lack of an appropriate landing site for *Jean*. If nonrestrictives did not involve raising, it would be hard to see what to make of (138), in particular given that *qui* as direct object is in fact possible in free relatives (example from Hirschbühler and Rivero 1983, p. 517).[70]

(139) Qui tu as rencontré est malade.
      who you have met is sick

From the present perspective, (139) is not subject to the violation seen in (138) because it has no phrase corresponding to *Jean* at all, so that the landing site problem does not arise.

The analysis I have proposed for nonrestrictives implies that all non-PF differences between nonrestrictives and restrictives should be located at LF. For example, stacked relatives are possible (see (36)) if all are restrictive or if all are restrictive but the last.

(140) the book that's on the table, which I've read twice

If a nonrestrictive appears nonfinally, however, the result is bad.

(141) *the book, which I've read twice, that's on the table

(142) *the book, which I've read twice, which is on the table

In (140) *I've read twice* is the main IP of the CP sister to *the*. (*Which* is in Spec,CP and *book that's on the table* is in Spec,*which*.) In (141), on the other hand, *I've read twice* is an IP properly contained in *book, which I've read twice*, which is a phrase occupying Spec,CP. Thus, the desired distinction can be drawn if in '[D⁰ [_CP XP [C⁰ IP]]]' the IP sister to C⁰ can move to the highest Spec,DP (when IP is nonrestrictive), but an IP embedded down within XP cannot. (This account of (141) carries over directly to (142).)

More precisely, (141) has the following form:

(143) D⁰[_DP[_CP book which [C⁰ IP]][C⁰ IP]]

Movement of the rightmost IP to Spec,DP could be licensed by incorporation of the rightmost C⁰ to D⁰, as mentioned in the last paragraph of note 24. But movement of the leftmost IP to Spec,DP would have to involve movement of a right branch from within a left branch,[71] yielding a violation recalling that of the following example (see Kayne 1983b, n. 3; Chomsky 1986a, p. 31):

(144) *Who has the cold weather given the sister of a bad case of the flu?

Thus, the fact that a nonfinal relative in a sequence of stacked relatives must be restrictive is attributable to a combination of two factors: the movement constraint just discussed, plus the basic point that nonrestrictives undergo LF movement of IP, and restrictives do not.

Emonds (1979, p. 232) notes that there are no nonrestrictive counterparts to free relatives.

(145) John ate what(ever) they put in front of him.

If the variant without *ever* has some abstract counterpart to *ever*, then it might be possible to relate the absence of free nonrestrictives to a parallel contrast involving *every*.

(146) John ate every cookie they baked.

(147) *John ate every cookie, which they baked.

Apparently, the variable in object position bound by *every* in (146) must

remain within the scope of *every* at LF and is not allowed to be moved out of its scope by IP-movement to Spec, *every*.[72]

A further difference between restrictives and nonrestrictives concerns idiom chunks, which occur only in the former, as noted by Vergnaud (1974, p. 181).

(148) the headway that we made

(149) *the headway, which we made

This is compatible with assigning the same overt syntactic structure to the two kinds of relative. In (149) (but not in (148)) the trace of the idiom chunk is moved along with the rest of IP to Spec,DP at LF. Thus, the resulting deviance can arguably be related to that of (151).

(150) Advantage is likely to be taken of us.

(151) *How likely to be taken of us is advantage?

In both (149) (in LF) and (151) the c-command relation between the idiom chunk and its trace is destroyed.[73]

Chapter 9

Extraposition

9.1 Relative Clause Extraposition

Sentences like (1) and (2) have frequently been analyzed in terms of right-ward movement ("extraposition") of the relative clause. [1]

(1) Something just happened that you should know about.

(2) Someone just walked into the room who we don't know.

The usual assumption is then that the extraposed relative is right-adjoined to some phrasal node, say, VP or IP. Which node it might be is not important here, since right-adjunction is excluded by the present LCA-based theory independently of the category label of the node adjoined to.

Attachment of the extraposed relative under VP (e.g., as a sister to both *walked* and *into the room* in (2)) is likewise impossible, since that would create a ternary-branching structure that would violate the LCA as a result of *into the room* and the relative clause c-commanding each other (which would lead to a violation of antisymmetry). A third possibility that might come to mind especially for (1) would be that the relative moves down into the complement position directly to the right of V. However, this does not seem very plausible (in particular if *happen* is an unaccusative verb, with a trace of *something* as complement). In addition, the last two possibilities mentioned suffer from a problem concerning the trace of the extraposed relative, which would not be c-commanded by its anteced-ent. This trace-binding problem would not arise if the relative were right-adjoined to IP, but since right-adjunction is sharply prohibited by the present theory, I conclude that none of the three possibilities is viable and that a rightward movement analysis of relative clause "extraposition" is not correct.

The problem with rightward movement here is in essence a landing site problem and therefore cannot be solved by base-generating the relative clause in one of the landing site positions just considered. Just like right-adjunction in the case of movement, base generation of the relative in a position right-adjoined to VP or IP is prohibited by the fact that asymmetric c-command must map to precedence.[2] Base generation of the relative as sister to both *walked* and *into the room* is also prohibited, exactly as in the previous paragraph. Base generation of the relative as the direct complement of V is implausible. For example, if *happen* is unaccusative in

(1), the complement must be *something*, and if *happen* is not unaccusative, it should have no complement.

From an acquisition standpoint, the fact that the present theory rules out several logically possible analyses for this construction is a highly desirable result, since it means that the learner in this case is free of the burden of having to choose from among too many competing analyses. It is, of course, essential that the theory make available at least one analysis. What is available, but not yet discussed, is the possibility of instead taking the "extraposed" relative to be "stranded" by leftward movement of *something/someone*.[3]

(3) Something$_i$ just happened [[e]$_i$ that you ...

(4) Someone$_i$ just walked into the room [[e]$_i$ who ...

This reanalysis of relative clause extraposition as relative clause stranding, which recalls Sportiche's (1988) reanalysis of quantifier floating as quantifier stranding,[4] straightforwardly eliminates the trace-binding problem. There is now no relative clause trace at all that needs to be bound.

The trace of *something/someone* is bound by the phrase in subject position in the familiar way. (It should be noted that, as in Sportiche's proposal, this analysis assumes crucially that subjects can move up into Spec,IP from a lower position.)

Compared with relative clause extraposition, relative clause stranding has the further advantage that it provides a better account of the existence in this construction of a restriction known as the Right Roof Constraint (Ross 1967).[5] Consider the following example:

(5) *The fact that somebody walked into the room is irrelevant who I knew.

In extraposition terms, the relative *who I knew* is seen to be unable to

move out of its minimal clause, though why it could not do so in successive-cyclic fashion was never clear, as Larson and May (1990, p. 112n) note.

If instead what is involved is leftward movement of *somebody*, then there is an immediate double violation in (5). First, *somebody* would have to originate within *somebody who I knew*, and therefore the entire phrase *somebody who I knew* would have to be in the complement position of the matrix predicate.

(6) the fact that [e] walked into the room is irrelevant somebody who I knew

But since *irrelevant* takes no direct complement (i.e., that position is not a theta-position), the phrase *somebody who I knew* would not be assigned a theta-role. Second, the movement of *somebody* into the empty embedded subject position in (6) would constitute movement to a noncommanding position.[6]

Compared with relative clause extraposition, relative clause stranding has another advantage as well: it provides a more direct account of the fact that the relative clause, when separated from its 'head,' appears to the right of that head, rather than to its left.

(7) *That you should know about, something just happened.

(8) *Who we don't know, someone just walked into the room.

If relative clauses could be moved rightward out of DP, why not also leftward?

The stranding proposal provides the following account of (7)/(8). First, one could not derive them by starting from a structure like *Something that you should know about just happened*, where *something that you should know about* was (somehow) in topic position, and then moving *someone/something* down into subject position, since that would leave an unbound trace. Nor could (7), for example, be derived from *Something that you should know about just happened* by leftward movement of *that you should know about*, since that constituent, under the analysis of relatives proposed above, is not a full CP. Instead, it corresponds only to the lower segment of a two-segment CP (in standard X-bar terms, to a single-bar category).

(9) [$_{CP}$ something$_i$ [$_{CP}$ that you should know about [e]$_i$]]

Given the discussion in the last two paragraphs of section 3.1 (also see

(the text to) note 25 of chapter 8), we know that the lower segment of a two-segment category cannot be moved at all.[7]

Finally, (7) cannot be derived from a structure like (3) by moving the entire CP (including the trace of *something*) leftward, which would yield (10).

(10) *[[e]$_i$ that you ...]$_j$ something$_i$ just happened [e]$_j$

The reason is that the initial trace '[e]$_i$' is not properly bound.[8]

This kind of violation may underlie the well-known fact that VP-preposing cannot carry along an "extraposed" relative ~~while leaving the~~ "head" behind in subject position.[9]

(11) *John said that something would happen to him that you should know about, and happen to him that you should know about, something did.

(12) ... and happen to him [[e]$_i$ that ...]$_j$ something$_i$ did

Again, the trace of the raising of *something* to Spec,IP has been carried along by VP-preposing in such a way that it is no longer c-commanded by its antecedent.

The contrasting fact that VP-preposing can carry along an "extraposed" object relative is immediately understandable (example essentially from Baltin 1987, p. 588).

(13) John said that he would call people up who are from Boston, and call people up who are from Boston he will.

In (13) VP-preposing has taken along both the relative and its raised "head," so that the trace-binding violation of (11) does not hold.

(14) ... and [call people$_i$ up [[e]$_i$ who ...]] he will

As seen in (14), the c-command relation between *people* and its trace is unaffected by the preposing of the VP.[10]

From the perspective of Chomsky 1993 and the work leading up to it, relative clause extraposition has the disadvantage of being purely optional.

(15) Someone just walked into the room who we don't know.

(16) Someone who we don't know just walked into the room.

It is hard to see what kind of trigger could plausibly be at issue. A strand-ing approach leads to a different characterization. As seen in (4), the

phrase *someone who we don't know* in (15) is sentence-final at the point at which *someone* moves to subject position. (16) can be taken to share that structure, except that in (16) it is the entire phrase *someone who we don't know* that moves. Both movements could plausibly be attributed to a need for Case.

The stranded relative clause cannot be found between the verb and its complement.

(17) *Someone just walked who we don't know into the room.

~~From a stranding point of view, this suggests that *someone who we don't*~~ *know* could not appear there, prior to leftward movement of *someone*. There may thus be a relation between (17) and (18)/(19)

(18) There just walked into the room someone who we don't know.

(19) *There just walked someone who we don't know into the room.

(vs. *John ushered someone who we don't know into the room*).

The order of phrases that holds in (18) is reminiscent of the order in (20).

(20) John ushered into the room someone who we don't know.

I argued in section 7.2 that sentences like (20) involve leftward movement and raising of the PP across the direct object. Correspondingly, I will propose that in (18) the PP *into the room* has raised across *someone who we don't know*. In the resulting structure *into the room* asymmetrically c-commands *someone who we don't know*. In the discussion above example c-commands *someone who we don't know*, might be in a non-Case position below the normal position for English direct objects. If *someone who we don't know* in (18) is in that same position, and if it cannot be there in (19), then it is possible to formulate the following restriction (in effect a subcase of the prohibition against movement from one structural case position to another; see Chomsky 1993, p. 32):

(21) A relative clause can be stranded by A-movement only in a non-Case position.

If *into the room* asymmetrically c-commands *someone who we don't know* in (18), and if (15) is derived from a structure resembling (18), then it is clear that in (15) the stranded relative is asymmetrically c-commanded by the PP (as we would expect from general considerations, given the LCA and the prohibition against right-adjunction). This is supported by

facts concerning the licensing of *any*. Consider the following sentence, under the wide scope reading of the negation:

(22) ?A man walked into no room.

This sentence under that interpretation is not very natural, but allowing for that, the contrast between (23) and (24)/(25) is notable (see Larson 1988).[11]

(23) *A man who had any money walked into no room.

(24) ??A man walked into no room who had any money.

(25) ??A man walked into no room who anybody knew.

The negation within the PP cannot license an instance of *any* within the subject phrase, as expected. To some extent, however, it can license an instance of *any* within the stranded relative, supporting the idea that in (24)/(25) the relative is lower than the PP.[12]

Somewhat similar is the pair of examples noted by Guéron (1980, p. 650).

(26) A picture of Mary was sent to her.

(27) A picture was sent to her of Mary.

(26) involves PP-extraposition, which I must reanalyze as PP-stranding in a way parallel to relative clause stranding.[13] Again, *of Mary* in (27) must be lower than *to her* (given the unavailability of right-adjunction). The fact that it is lower allows one to understand, in terms of Condition C and c-command (abstracting away from *to*), why *her* can refer to *Mary* in (26), but not in (27).

On the other hand, Reinhart (1983, pp. 49, 127) gives examples of relative clause stranding (in my terms) that appear parallel to (27) but are nonetheless natural with coreference.

(28) Nobody would ever call her before noon who knows anything about Rosa's weird sleeping habits.

Here, *her* and *Rosa* can be coreferential. The problem is that the same reasoning (unavailability of right-adjunction) that has led me to conclude that in (27) *of Mary* must be lower than (i.e., asymmetrically c-commanded by) *to her* leads directly to the conclusion that in (28) the stranded relative *who knows anything about Rosa's* ... must be lower than *her*, in which case we would apparently expect a Condition C violation.

I think the solution is to recall, first, that Condition C applies under reconstruction (see Chomsky 1993, pp. 40ff.), and second, that in the analysis of (18) proposed above the 'V PP DP' order is derived by leftward movement of PP past the subject DP. Keeping in mind that the stranded relative in (28) is part of the subject DP, this analysis of (18) transposed to (28) yields the following conclusion: in (28) *her* (and also *before noon*) reaches its visible position as a result of leftward movement across the subject DP, which includes the stranded relative.

The reconstruction that Chomsky (1993) discusses with respect to Condition C is of the *wh*-movement variety. Assume that scrambling of the sort that moves *her* across the subject DP in (28) interacts in the same way as *wh*-movement with Condition C. Then, in the case of (28), condition C will look at an LF representation in which *her* is in fact below the stranded relative—in which case, *her* does not (at that level of representation) c-command *Rosa*, so that there is no Condition C violation, as desired.

Reconstruction of scrambling in (28) yields subject-object order. Putting this another way, and abstracting away from the position of the verb, reconstruction in (28) yields subject-predicate order. Now, so-called presentational sentences (see Guéron 1980) arguably do not "want" to have a simple subject-predicate representation at LF. Assume that this translates into the conclusion that reconstruction of scrambling does not hold for presentational sentences. Then the potential Condition C violation found in (28) would not be undone at LF in a presentational sentence of the same general form as (28) itself. To my ear, this expectation is borne out.

(29) All of a sudden, a man appeared to Mary who had once been in love with her.

(30) All of a sudden, a man appeared to her who had once been in love with Mary.

Coreference between *Mary* and *her* seems natural in (29) but very difficult to accept in (30), as expected if *to her* in (30) does not reconstruct (because of the presentational character of (30)) and if *to her* there asymmetrically c-commands the stranded relative.

Note that none of the above implies that a stranded relative clause is necessarily an island, in particular since the position of the object in (20) is not (example repeated from (18) of chapter 7).

(31) the problem which I explained to John only part of

And in fact stranded relative clauses are definitely not islands in Norwegian (see Taraldsen 1981, sect. 2) and to some extent are not even in English, as Chung and McCloskey (1983, p. 708) have shown.[14]

(32) That's one trick that I've known a lot of people who've been taken in by.

(In essence following Taraldsen, I take (32) to involve relative clause stranding, even though in this example the effect of raising *a lot of people* happens not to be visible.)

Ziv and Cole (1974) have observed that relative clause extraposition (now stranding) is difficult with *the*.

(33) A man just walked in who we knew in high school.

(34) ??The man just walked in who we knew in high school.

I would like to interpret this contrast as reflecting the mixture of two different judgments that hold with *the*, which can be made clearer if the appropriate word is added to (34).

(35) The very man just walked in that I had been telling her about.

(36) *The only man just walked in that I had mentioned to her.

(The ungrammaticality of (36) was pointed out by Guéron (1980, p. 650).)
The idea is that English *the* is ambiguous (in a way to be clarified below) between the *the* of (35) and that of (36), and that this is what is behind the uncertain judgment concerning (34).

Let me begin with the sharp contrast between (33) and (36). In (33) *a man* is moved leftward from within the DP *a man who we knew in high school*. That DP has the structure 'D CP', and similarly for *the only man that I had mentioned to her* in (36). In chapter 8, I quite generally took *the* to correspond to D, and *man* to have been moved to Spec,CP. If so, then, independently of the exact position of *only*, it is clear that *the only man* in *the only man that I had mentioned to her* cannot be a constituent. Under standard assumptions, it therefore cannot be moved. This accounts for the ungrammaticality of (36).

In part along the lines of Perlmutter (1970), there is no reason to take English *a* to be of the same category as *the*. More precisely, I take *a* in (33) not to correspond to the D of 'D CP', but rather to be included in Spec,CP along with *man*. Consequently, *a man* can be moved leftward as a constituent into Spec,IP (probably passing through Spec,DP), yielding (33).[15]

Extraposition

To allow (35), I will adopt a suggestion made by [...] (personal communication), to the effect that the *there* is really [...]tive, whereas it cannot plausibly be taken to be a demonstrative in (34). In particular, although the *the* in (35) can be replaced fairly naturally by *that*, such replacement in (36) is completely impossible.

Consider more specifically Szabolcsi's (to appear) discussion of Hungarian, and the fact she points out about demonstratives and the definite article in Hungarian, namely, that demonstratives can follow the definite article (and be separated from it by a possessor phrase). From an LCA perspective, this means that Hungarian demonstratives can occur lower than the definite article. I will jump from that to the proposal that English demonstrative *the* can occur with *man* (and with *very*) in Spec,CP: 'D [$_{CP}$ *the very man* [that [$_{IP}$ ...]]]', where *the very man* binds a trace within IP. Given this structure, *the very man* can move out of DP (again, probably through Spec,DP), ending up in Spec,IP in (35). If this *the* can to some extent occur without *very* (or *same*), then (34) will be acceptable to that extent (and similarly for Norwegian; see Taraldsen 1981, pp. 488–489).

As mentioned in the last paragraph of note 20 of chapter 8, a stranded relative can sometimes occur without either a *wh*-word or *that*.

(37) ?A book just came out I've been meaning to read.

This contrasts sharply with (38).

(38) *Whatever books came out late I wanted to read.

Setting aside the irrelevant reading where *whatever books came out late* is a topicalized object, (38) cannot possibly be an instance of relative clause stranding, with *whatever books* the head of *I wanted to read* (cf. *Whatever books I wanted to read came out late*).

This very general fact was noted by Bresnan and Grimshaw (1978, p. 346n.), who phrased it in terms of relative clause extraposition. From the present perspective, the generalization is that free relatives never give rise to relative clause stranding. The question is why (38) is not derivable from a structure like '[e] came out late *whatever books I wanted to read*'. Recalling note 13 of chapter 8, the answer is that *whatever books* is not a constituent. Rather, *ever* is a D outside CP to which the *wh*-word incorporates. Thus, (38) is impossible for essentially the same reason as (36).[16]

The (standard) assumption that movement applies only to constituents, which I have used to account for (36) and (38), appears to pose a problem as far as (39) is concerned.

(39) John is going to talk to someone tomorrow who he has a lot of faith in.

If this kind of example is taken to be parallel to those previously discussed,[17] then it should be derived from a structure resembling '... to talk tomorrow to someone who ...,' (where *tomorrow* probably has previously moved leftward across the whole PP) via leftward movement of *to someone*, stranding the relative. The problem is that in *to someone who* ..., *to someone* is not obviously a constituent.[18]

Consider the following approach, which would allow *to someone* to in fact be a constituent. Start from the standard PP structure 'P DP', with *someone* inside Spec,CP: 'to [DP D [CP someone ...]]'. Let *someone* move to Spec,PP (probably via Spec,DP), yielding 'someone; [to [DP D [CP e]i ...'.[19] Then let *to* left-adjoin to *someone*: '[QP to [QP someone; [to [DP D [CP someone]]]'.[20] Subsequent leftward movement of this newly created QP out of Spec,PP will allow (39).

9.2   Result Clauses and Comparatives

Result clauses occur in a construction that to some extent resembles relative clause stranding.

(40) So many people came to the party that there wasn't enough to eat.

An important difference between the two constructions has been discussed by Guéron and May (1984).

(41)   Plots by so many conspirators have been hatched that the government is helpless.

(42) *Plots by many conspirators have been hatched who work for the government.

From the perspective of the preceding section, (42) is ungrammatical because starting from a structure like '[e] have been hatched plots by many conspirators who ...', there is no way to reach (42) by leftward movement of *plots by many conspirators*, stranding *who* ..., since *plots by many conspirators* is not a constituent.

The fact that (41) is grammatical suggests, then, that result clauses are not (necessarily) instances of stranding. On the other hand, they cannot be taken to be right-adjoined to VP, IP, or CP, either. Let me propose, therefore, that the structure of (41) is (43).

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(43) [[plots by so many ... hatched] [that [the ...]]]

The sentence as a whole is headed by the *that* that introduces the result clause. The part of the sentence preceding *that* is a clause occupying Spec,*that*.

The structure indicated in (43) correctly allows for the possibility that a pronoun in the left-hand clause will be coreferential with a lexical DP in the result clause.

(44) She has so much money now that Mary is the envy of all her classmates.

With *she has so much money now* in Spec,*that*, *she* does not c-command *Mary*.

Contrasting with (41) is (45).

(45) *Plots that so many people know about have been hatched that the government has lost all credibility.

I follow Rouveret (1978) and Guéron and May (1984) in taking this to indicate that *so* is required to raise at LF for the construction to be licensed. Given (43), the raising should presumably be to a position c-commanding *that*, yielding a kind of spec-head agreement configuration. Such LF raising is possible in (41), but it is not possible in (45) because *so* in (45) is too deeply embedded.[21]

(44) contrasts with (47).[22]

(46) John has so much money that he doesn't know what to do with it.

(47) He has so much money that John doesn't know what to do with it.

Coreference between *he* and *John* does not seem possible in (47). It may be that (47) has the structure (48).

(48) he has [so much money [that [John ...]]]

where *so much money* is in Spec,*that*—in effect, a kind of ECM structure. (Note that (43) itself can be thought of as akin to an ECM structure, perhaps with an abstract higher head (see section 4.3) in the specifier of the complement of which we find what is generally taken to be the main clause.)

Chomsky (1981, pp. 81–83) observes that comparatives display double behavior.

(49)   Pictures of more people are for sale than I expected.

(50) *Pictures of more people are for sale than I met yesterday.

His discussion of (50) is in terms of extraposition. From the present perspective, the fact that (50) is parallel to (42) suggests that some comparative sentences should be analyzed as instances of stranding. Thus, (51) will be given the analysis in (52).

(51) More people are here today than I met yesterday.

(52) [e] are here today [more people than I met yesterday]

In (52) *more people* raises to Spec,IP, stranding the comparative clause *than I met yesterday* and yielding (51).

What about the internal structure of *more people than* ...? The *than*-clause cannot plausibly be a complement of *people*, nor can it be right-adjoined. Let me propose, rather, a structure parallel to that of (48).

(53) [more people [than [...]]]

The head of the entire phrase is *than*. *More people* is in Spec,*than*.

The natural next step is to attribute to (49) a structure parallel to that of (43).

(54) [[pictures of more people ... sale [than [I expected ...

Than is again the head of the whole, but here its specifier contains a clause. LF movement of *more* will come into play, as with *so* in result constructions.

The fact that (50) is ill formed implies that it cannot have the structure shown in (54). Perhaps *than* can have a clausal specifier only if the gap in the complement clause of *than* is itself clausal.[23]

PART IV