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SUBJECT INVERSION IN FRENCH INTERROGATIVES

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Section I: The inversion of subject NP and that of subject clitic must be described by means of two distinct transformations. Section II: The 'complex inversion' construction must be described in terms of an inversion transformation, the same as that pertinent to the simple inversion of the subject clitic, rather than in terms of a pronominal copy transformation. Section III: The origin and subsequent displacement of subject clitics; the unity of 'ce' and 'ça'; the formalization of subject clitic inversion; notes on subject clitics and coreference.

SECTION I

Although pairs of sentences such as the following:

- (1) a. Quand partira ce garçon?
- b. Quand partira-t-il?

might lead one to think in terms of a unique subject-verb inversion transformation for direct questions, there are many well-known differences between the inversion of pronominal subjects and that of NP subjects. For example, only the pronominal subject may be inverted in yes-no questions:

- (2) \*Partira ce garçon?
- Partira-t-il?

Furthermore, there is a clear difference in status between the two constructions in questions introduced by the word "pourquoi":

- (3) ?Pourquoi part ce garçon?
- Pourquoi part-il?

In addition, for most speakers, the productivity of the NP-inversion, but not that of the pronominal inversion, is affected by the presence of certain types of post-verbal complements and modifiers:

- (4) \*Quand deviendra ce comédien célèbre?
- Quand deviendra-t-il célèbre?

\*A quelle heure changera cette fille d'avis?  
A quelle heure changera-t-elle d'avis?

\*Depuis combien de temps en veut cet étudiant à ses professeurs?  
Depuis combien de temps en veut-il à ses professeurs?

\*A quoi joue cet homme mieux que toi?  
A quoi joue-t-il mieux que toi?

\*De quel oeil voit ton ami double?  
De quel oeil voit-il double?

\*De quel droit prétend ce charlatan que tout va bien?  
De quel droit prétend-il que tout va bien?

\*Depuis quand se connaît cette personne en histoire?  
Depuis quand se connaît-elle en histoire?

\*Où tient votre petite fille à ce que j'aille?  
Où tenez-vous à ce que j'aille?

The existence of restrictions such as those shown in (2)-(4) would force one to impose an ugly series of conditions on any single transformation postulated to account for both of the sentences in (1). Moreover, it is clear that the required conditions would amount to no more than an uninteresting restatement of the data and would contribute in no way to an understanding of the above paradigms.

We shall instead consider examples (2)-(4) as evidence in favor of the hypothesis that the subject inversion in sentences (1a) and (1b) is to be accounted for by means of two distinct transformations, one of which will apply only to subject pronouns; the other will apply to subject NP's, but not to subject pronouns. Let us call the former "subject clitic inversion" (SUBJ - CL - INV), and the latter "stylistic inversion" (STYL-INV), for reasons which will become more evident below.

The need for two separate transformations is made particularly clear by the fact that the surface structure position of the inverted subject pronoun is in general not identical to that of the inverted subject NP:

- (5) Que voulait manger ce jeune homme?
- \*Que voulait manger-il?

- \*Que voudrait ce jeune homme manger?
- Que voudrait-il manger?
- \*Qu'a fait cette femme?
- \*Qu'a fait-elle?
- \*Qu'a cette femme fait?
- Qu'a-t-elle fait?

We note that these examples suggest that the inversion of the subject pronoun be construed as a simple interchange of the pronoun and the verbal form with which it is in contact, a position consistent also with the facts of (1)-(4). On the other hand, the above examples suggest a rather different characterization of the "inversion" of the subject NP, which could more readily be interpreted as a displacement of the subject NP to the end of the sentence.

Such a formulation of the transformation STYL - INV would immediately account for the ungrammaticality of the starred sentences in (4), which would simply not be generable. Rather, postposing the subject NP to the end of the sentence would yield:

- (6) ?Quand deviendra célèbre ce comédien?
- ?A quelle heure changera d'avis cette fille?
- ?Depuis combien de temps en veut à ses professeurs cet étudiant?
- \*?A quoi joue mieux que toi cet homme?
- ?De quel oeil voit double ton ami?
- \*De quel droit prétend que tout va bien ce charlatan?
- ?Depuis quand se connaît en histoire cette personne?
- \*Ou tient à ce que j'aille votre petite fille?

Compared to (4), which illustrated the simple inversion of subject NP and verb, the sentences in (6), which illustrate the placing of the subject in sentence-final position, are for the most part decidedly better, and in any case never worse. In fact, several of the examples in (6) can be made perfectly grammatical by increasing the length of the subject NP:

- (7) Quand deviendra célèbre le comédien que nous avons vu si bien jouer l'autre jour à la télévision?
- A quelle heure changera d'avis le prisonnier auquel la police est en train de faire subir des tortures imaginables?
- De quel oeil voit double celui de tes amis qui a falli se tuer dans un accident de moto?
- ?De quel droit prétend que tout va bien le charlatan qui vient d'être arrêté par la police?

The sentences in (4), however, are not improved if the constituent following the inverted subject NP is lengthened:

- (8) \*Quand deviendra ce comédien aussi célèbre que celui qui se présente à tourner des films de publicité?
- \*A quoi joue cet homme dix fois mieux que les joueurs professionnels?
- \*Où tient votre petite fille à ce que j'aille l'année prochaine pendant les vacances de Noël?

This suggests that the acceptability of the output of STYL - INV, which will be formulated as a rule moving the subject to sentence-final position, thereby accounting for the contrast between (7) and (8), as well as that between (4) and (6), is determined in part by considerations of length.<sup>2</sup> Such 'stylistic' considerations, however, do not seem to play a role in cases like (5).<sup>3</sup>

The precise formulation of STYL - INV raises a number of difficult questions; for example, not all complements lead to contrasts as clear-cut as those in (4). Although there are numerous verb-complement combinations which cannot be broken up by STYL - INV,<sup>4</sup> there are others for which that is less clearly true:

- (9) ??Quand écrira ton frère à sa petite amie?
- ?Qu'écrira ton frère à sa petite amie?
- Que dira ton frère à sa petite amie?

In addition, as evidenced by the sentences with 'écrire', the choice of question word may play some role, although interrogative 'que' certainly does not always allow placement of the subject NP directly to the right of the verb:

- (10) \*Que veut votre femme que vous fassiez?

Examples of perfectly grammatical sentences where STYL - INV appears to have put the subject NP to the left of a complement are:

- (11) Où est allé votre ami pour trouver la paix?
- A quoi s'intéressait cette personne en 1968?

These contrast with:

- (12) \*Dans quelle élection a voté votre ami pour Nixon?
- \*Depuis quand se connaît cette personne en histoire?

Such data cast doubt on the feasibility of maintaining the characterization of STYL - INV as a transformation which throws subject NPs to sentence-final position, since in (11) and (9), the postposed subject is not sentence-final. On the other hand, (12), (10) and (4) continue to suggest that STYL - INV may not be considered to invert subject and verb. An ideal solution would consist of showing that those complements which can follow the postposed subject, as in (11) and (9), are exactly those not dominated by some intermediate node, call it VP; this would permit stating

STYL - INV as A - NP - VP - X + A - VP - NP - X where A stands for the interrogative word and X for a variable. Unfortunately it is far from clear that this approach is the optimal one. On the one hand, the question of the justification and constituency of the node VP in French has been little studied.<sup>5</sup> On the other hand, the complement in 'a' of 'dire' (V. (9)) is an unlikely candidate for non-VPhood. Worse, there are some speakers who accept some of the starred sentences in (4), and it would be surprising to find such ideological differences attributable to differences in VP-structure. Nor do the facts concerning 'quand' vs. 'que' lend themselves to that approach (the special status of 'que', if that's what is relevant, may be related to its atonic character). There is no doubt something here that does depend on the degree of closeness between verb and complement, but it remains to be seen if such a notion can be made precise.<sup>6</sup> In any case, none of the above would suggest abandoning the original hypothesis as to the postulation of two distinct transformations for the sentences in (1).

An additional argument in favor of this distinction comes from consideration of embedded questions, in which the inversion of the subject NP but not that of the subject pronoun is possible:

- (13) Je sais très bien à quelle heure partira ce garçon.  
\*Je sais très bien à quelle heure partira-t-il.

With respect to STYL - INV, we find in embedded questions restrictions similar to those discussed earlier:<sup>7</sup>

- (14) \*Il voudrait savoir depuis quand est cette fille malade.  
\*Dites-moi à quel moment a changé Marie d'avis.  
\*Je me demande à quelle heure téléphonera ce garçon à ses parents.  
\*On ne sait pas ce que veut Jean qu'on fasse.

Again, the positioning of the subject NP is as in direct questions (cf. (5) ):

- (15) Je ne me rappelle pas à quelle heure devait partir mon ami.  
\*Je ne me rappelle pas à quelle heure devait mon ami partir.  
On se demande ce qu'a dit le président.  
\*On se demande ce qu'a le président dit.

Similarly, the construction is less satisfying with "pourquoi" (cf. (3) ):

- (16) ?Je ne me rappelle pas pourquoi devait partir mon ami.  
??Il tient à savoir pourquoi est partie la fille.

Finally, the inapplicability of STYL - INV in yes-no questions (cf. (2) ) is mirrored in the corresponding embedded question with "si":<sup>8</sup>

- (17) \*Tu sauras bientôt si va venir ta femme.  
\*On ne sait pas si partira ce garçon.

Although the different behavior of STYL - INV and SUBJ - CL - INV in embedded questions is certainly a clear indication that we are dealing with distinct rules, this particular argument could be made much more compelling by showing that the two-rule analysis can actually explain why SUBJ - CL - INV, but not STYL - INV, should be limited to non-embedded sentences.<sup>9</sup> We return to this question below.

Another important property of STYL - INV which distinguishes it from SUBJ - CL - INV is that it is applicable in relative clauses:

- (18) La maison où habite cet homme est très jolie.  
L'homme qu'a rencontré cette femme est bien connu.  
Le problème auquel réfléchit le savant est trivial.  
Ce dont parlera le conférencier, c'est ceci.

The positioning of the subject NP is as in interrogatives:<sup>10</sup>

- (19) Au moment où voulait partir son amie . . .  
\*Au moment où voulait son amie partir . . .  
Ce qu'a fait son père . . .  
\*Ce qu'a son père fait . . .

As in interrogatives, the postposed subject may not appear between the verb and certain types of verbal complements:

- (20) \*à l'époque où était cette fille malade  
\*au moment où changeait Marie d'avis  
\*la fille que croit Jean que tu aimes  
\*celui à qui a donné ce garçon des bouquins  
\*la femme avec laquelle tient son enfant à ce qu'il se marie

Again, in many cases, the order complement - subject NP is possible especially if the subject NP is long:<sup>11</sup>

- (21) à l'époque où était malade la fille dont on a parlé hier  
au moment où changeait d'avis le prisonnier que la police était en train de torturer

and, as in interrogatives, the examples in (20) are not improved by the presence of a long complement:

- (22) \*à l'époque où était cette fille encore plus malade qu'elle ne l'est maintenant  
\*celui à qui a donné ce garçon les bouquins qu'on lui avait offerts il y a deux mois

Once more the distinction between STYL - INV and SUBJ - CL - INV is justified by the observation that the latter is never applicable in relatives:

- (23) \*La maison où habite-t-il est très jolie.
- \*L'homme qu'a-t-elle rencontré est bien connu.
- \*Ce dont parlera-t-il, c'est ceci.
- \*Le problème auquel réfléchit-il est trivial.

Returning to the problem of the formulation of STYL - INV, we note that its applicability in both interrogatives and relatives suggests that it should be made sensitive to some characteristic common to these two constructions. A natural proposal would be to have STYL - INV depend on the presence of a clause-initial WH-element:<sup>12</sup>

$$e.g. \quad S \left[ \begin{array}{l} A \text{ NP } X \\ +MH \end{array} \right] + S \left[ \begin{array}{l} A \text{ X NP} \\ +MH \end{array} \right] \quad (\text{but v. fn. 6})$$

For the purposes of determining what counts as an initial WH-element, a distinction must be made between relative "que" and the conjunction, or complementizer "que":

- (24) Je connais la fille qu'a rencontrée Jean.
- \*On sait qu'a pleuré Jean.
- Le fait que t'a communiqué cette fille ne nous intéresse pas.
- \*Le fait que t'a parlé cette fille ne nous intéresse pas.

This would present no problem if relative 'que', but not the other, had been marked +MH (we are taking +MH to be a marker assigned to those constituents which are to undergo WH-movement -v. Chomsky (1971)). Actually, there is a fair amount of evidence (v. Kayne (forthcoming - b)) that 'que' should not be considered a relative pronoun at all, and that the derivation of relative clauses with 'que' involve the deletion of a preposed relative element, schematically 'la table laquelle qu'il a cassée' → 'la table qu'il a cassée'. If this is true, then in (24) the 'A' of the structural description of STYL - INV corresponds to this ultimately deleted relative element, rather than to 'que'. Given this analysis of relative pronouns, STYL - INV must be ordered before the deletion rule in question. If 'que' is now considered a kind of clause-introducing element, is in the tree at the time of STYL - INV (rather than inserted under the appropriate conditions by a subsequent rule), STYL - INV must be reformulated as:<sup>13</sup>

$$S \left[ \begin{array}{l} A \text{ (que) NP } X \\ +MH \end{array} \right] S + S \left[ \begin{array}{l} A \text{ (que) X NP} \\ +MH \end{array} \right] S$$

We note that this formulation of STYL - INV correctly predicts that if the initial WH-element is itself the subject, the inversion will not take place:

- (25) Qui a crié?
- Combien d'enfants voudraient le lire?
- Elle sait laquelle lui plaît.
- (26) \*A crié qui?
- \*Voudraient le lire combien d'enfants?
- \*Elle sait lui plaît laquelle.

The statement of STYL - INV in terms of an initial WH-element, we recall, was motivated by its applying both in interrogatives and in relatives. The fact that SUBJ - CL - INV does not apply in relatives must consequently be considered evidence that it not be formulated in the same way. We have already seen a number of environments, in embedded sentences, where STYL - INV, but not SUBJ - CL - INV, was applicable. If SUBJ - CL - INV is not in general triggered by the presence of an initial WH-element, then we might expect to find cases of the applicability of STYL - INV but not SUBJ - CL - INV even in nonembedded sentences. Exclamatory sentences not containing a negative particle (v. Nygaard (1967)) and introduced by a NP containing the word "quel" seem to be just such a case:<sup>14</sup>

- (27) Quels beaux visages ont ces jeunes femmes!
- Quel plaisir m'a fait son discours!
- \*?Quels beaux visages ont-elles!
- \*?Quel plaisir m'a-t-il fait!

Since it is as we see not possible to use the presence of an initial WH-element as the trigger for SUBJ - CL - INV, we are led to stating the rule directly in terms of the environment "question". Formally, one way this could be accomplished would be by the use of a special interrogation marker (Q).<sup>15</sup> In any case, this approach correctly accounts for the fact that SUBJ - CL - INV is applicable in non-embedded yes-no questions as well as WH-element introduced questions.

Most importantly, this characterization of SUBJ - CL - INV, combined with the formulation of STYL - INV as a rule sensitive to the presence of an initial WH-element, is able to explain the asymmetry with respect to the inversion of the subject found in yes-no questions (v. (2)). The fact that in yes-no questions, a subject NP may not be inverted:

- (28) \*Chantent les oiseaux?
- (29) Depuis quand chantent les oiseaux?

will follow from the fact that the transformation moving subject NP's, STYL - INV, is sensitive to the presence of an initial WH-element, lacking in (28), rather than to the questionhood of the sentence. Looked at from this angle, the contrast between (28) and WH-questions:

loses its superficially anomalous character. Conversely, the contrast between (28) and:

- (30) Chantent-ils?

is now seen to follow from the fundamentally distinct character of the rules inverting on the one hand, subject NP's (STYL - INV) and on the other hand, subject clitic pronouns (SUBJ - CL - INV).

We note that the contrast between (28) and (29) is mirrored in embedded questions:

- (31) Il se demande à quelle heure partira son ami partira.
Il se demande si son ami partira.

\*Il se demande à quelle heure partira son ami.
\*Il se demande si partira son ami.

The absence of inversion with 'si' implies that "si" is not to be considered a WH-element. This would seem to correlate with the fact that "si" lacks a plausible source compared to "ou", "qui", "quoi", etc. Thus one could envision an analysis in which the latter three interrogative pronouns are derived from, respectively, WH + là, WH + quelqu'un, WH + quelque chose, but it is difficult to see what element X could be claimed to underlie "si" if "si" equalled WH + X. More likely, "si" should be considered a word whose derivational history does not include any movement due to the rule of WH-preposing.

The postulation of two distinct inversion rules thus permits an insightful account of the superficially anomalous behavior of the yes-no questions. We shall now attempt to account for the asymmetry between NP and pronoun inversion in embedded sentences:

- (32) Elle te dira où habite son père.
\*Elle te dira où habite-t-11. (cf. (13))

With respect to this particular problem, the postulation of two distinct rules would not be much of an improvement over the original possibility (given just one rule) of ad-hocly restricting the inversion in embedded questions to just NP's, if it were still necessary to add an ad-hoc condition to SUBJ - CL - INV to the same effect (i.e., to prevent it from applying in embedded sentences).

We note, however, that, as a rule applying in all types of non-embedded questions, and not subject to any restrictions imposed by following complements, SUBJ - CL - INV (but not STYL - INV) bears a significant resemblance to subject-auxiliary inversion in English, which is likewise limited to application in non-embedded sentences. (The same appears to be true of the question inversion rule in Swedish, which involves inversion of subject and simple verb, rather than auxiliary.) This suggests that the above restriction on SUBJ - CL - INV is not to be considered an

accidental fact about French, but should formally be related to the corresponding facts in English (and Swedish). Such an approach would permit a non ad-hoc solution to the lack of parallelism between the inversion of the NP and that of the subject pronoun, insofar as only the rule moving the latter is formally a simple inversion of subject and verb (or auxiliary) conditioned by the environment "question".

Moreover, it is possible that one can do more than simply reduce the language particularity of the problem. Emonds (1969) has proposed a theory of formal constraints on transformations which would provide a motivated explanation for the restriction of certain types of transformations (including SUBJ - CL - INV) to non-embedded sentences.

The applicability of STYL - INV in embedded sentences, on the other hand, seems to be related to the similar behavior of the rule of "length-inversion" mentioned earlier (v. fn. 6). Although this result does not follow directly from Emonds theory, it does not seem to be incompatible with it: one might hope that such rules form a separate, but tightly constrained class not subject to the structure-preserving constraint. We emphasize that the possibility of an explanation along these lines depends on the existence of two distinct transformations, STYL - INV and SUBJ - CL - INV, for pairs such as (1).

We thus have two transformations, one of which applies to subject pronouns and the other to subject NP's. Stated in another way, SUBJ - CL - INV is inapplicable to NP's.

- (33) \*Partira Jean?
\*Quand est Jean parti?
\*Où voulait Jean aller?
\*A quoi est cette fille sensible?

vs. Partira-t-11?
Quand est-11 parti?
Où voulait-11 aller?
A quot est-elle sensible?

and STYL - INV is inapplicable to subject pronouns:

- (34) \*Quelle belle femme a-t-11!
\*Ce que disait-11, c'est ceci.
\*Je sais très bien quand reviendront-11s.
\*C'est a trois heures qu'arrivera-t-11.
\*Qu'a fait-11?

vs. Quelle belle femme a ce garçon minable!
Ce que disait Jean, c'est ceci.
Je sais tres bien quand'reviendront ses enfants.
C'est a trois heures qu'arrivera le prince.
Qu'a fait Jean-Jacques?

The facts of (33) and (34) indicate that subject (clitic) pronouns<sup>22</sup> in French are not NP's (at least at the point of application of STYL - INV and SUBJ - CL - INV). This correlates with the following paradigm:<sup>23</sup>

- (35) \*C'est il.
- \*Il, souvent, va au cinéma.
- \*Il seul est capable de le faire.
- \*Il, qui est mon ami, voudrait le voir.

In particular, when pronouns are in NP position, they may be 'modified' and conjoined:

- (36) Il a parlé de nous autres.
- Elle pense à eux deux.
- Elle ne connaît que toi et moi.
- Il aime bien tout ça.

Compare:

- (37) \*Avons-nous autres perdu?
- \*Ils deux sont fous.
- \*Tu et je partirons demain.
- \*Tout ce n'est pas important.<sup>24</sup>

Given the formulation of STYL - INV we proposed earlier, the ungrammatical sentences of (34) cannot be generated if the subject clitic pronouns are not dominated by the node NP.<sup>25</sup> The formalization we shall propose in Section III for SUBJ - CL - INV will distinguish the grammatical from the ungrammatical sentences of (33).

SECTION II

French contains another interrogative construction, which we shall refer to as 'complex inversion'. This construction has a great deal in common with SUBJ - CL - INV. Like SUBJ - CL - INV (but unlike STYL - INV), this construction occurs in yes-no questions:

- (38) Ton ami partira-t-il?
- Cela est-il vrai?

is always grammatical with 'pourquoi':

- (39) Pourquoi cette fille a-t-elle fait cela?

is not affected by following complements:

- (40) Depuis quand ce garçon est-il malade?
- A qui ce garçon offrira-t-il ce livre?
- A quelle heure le prisonnier changera-t-il d'avis?
- Où cette fille veut-elle que tu ailles?

positions the subject pronoun as in SUBJ - CL - INV:

- (41) Où Jean voulait-il aller?
- Pourquoi Jean a-t-il fait cela?

- \*Où Jean voulait aller-il?
- \*Pourquoi Jean a fait-il cela?

is impossible in embedded questions (as well as in relatives and clefts):

- (42) \*Je ne comprends pas pourquoi la maison s'est-elle écroulée.
- \*Dis-moi si ton amie va-t-elle venir.
- \*Il sait très bien où cette fille habite-t-elle.
- \*Ce que Jean dira-t-il, c'est ceci.
- \*C'est à Paris que Marie-Yvonne habite-t-elle.

and in the exclamations introduced by 'quel' discussed earlier:

- (43) \*?Quels jolis visages ces filles ont-elles!

The extensive parallelism between 'complex inversion' and SUBJ - CL - INV suggests that they be considered one and the same construction.<sup>26</sup> This decision is supported by the observation that in every case in which one finds 'complex inversion', SUBJ - CL - INV is also possible. Thus in addition to questions, we have:

- (44) A peine Jean était-il parti que...
- A peine était-il parti que...

Sans doute cette fille reviendra-t-elle.  
Sans doute reviendra-t-elle.

- (45) a. Cette fille reviendra-t-elle que je ne serais toujours pas content.

b. Reviendrait-elle que je ne serais toujours pas content.<sup>27</sup>

Given the desirability of reducing 'complex inversion' and SUBJ - CL - INV to a single rule, we can ask how that reduction can be accomplished. Since 'complex inversion' superficially resembles a copying operation, e.g., 'Quand Jean partira'---'Quand Jean partira-t-il', one might try to rework SUBJ - CL - INV in terms of a copying rule. Alternatively, since SUBJ - CL - INV seems to be a pure inversion, one might try to incorporate a true inversion into the 'complex' construction, e.g., 'Quand Jean partira-t-il' would be derived from 'Quand Jean il partira'. The important point is that the placement of the subject pronoun in post-verbal position not be accomplished by two entirely distinct rules; if it

were, the fact that the 'complex' construction exists only alongside the simple would be accidental, as would be the very fact that the pronoun is positioned in the same way in the two constructions.

Before considering the two alternatives alluded to above, we point out that the 'complex inversion' construction is not equivalent to that with 'detachment'. The detachment construction is not possible with NP's such as 'quelqu'un': (V. Gross (1968))

- (46) \*Quelqu'un, depuis quand m'attend-il?  
 \*Depuis quand m'attend-il, quelqu'un?  
 Depuis quand quelqu'un m'attend-il?

Furthermore, complex inversion differs from detachment with respect to the possible NP-pronoun combinations, in which way complex inversion also differs significantly from the usual coreference environments: i.e., the relationship between the pre-verbal NP and the post-verbal subject pronoun is not the normal pronominalization relationship:

- (47) Pourquoi cela est-il faux?  
 Pourquoi ce que je dis te déplaît-il?

\*Cela<sub>i</sub> est faux parce qu'il<sub>i</sub> ne correspond pas à la vérité.

\*Ce<sub>i</sub> qu'elle dit ne vous intéresse pas et il<sub>i</sub> ne m'intéresse pas,  
 moi non plus.

As we see, NP's of the type 'cela', 'ce que je dis' are not possible coreferents for the pronoun 'il', except in complex inversion. The same is true of sentential NP's:

- (48) Que Jacques ait dit cela ne vous intéresse-t-il pas?  
 \*Que Jacques ait dit cela ne vous intéresse sûrement pas,  
 et il<sub>i</sub> ne m'intéresse pas, moi non plus.

Similarly, the indefinite pronouns 'rien' and 'tout' can, in the complex inversion construction be associated with 'il', otherwise not:

- (49) Pourquoi rien n'est-il tombé?  
 Depuis quand tout est-il en ordre?  
 (50) \*Rien: n'est tombé parce qu'il<sub>i</sub>(n')était (pas)  
 soutenu par des clous.  
 \*Tout<sub>i</sub> est en ordre aujourd'hui mais demain il<sub>i</sub>  
 sera en désordre.

The nominal components of certain idioms behave in much the same way:<sup>28</sup>

- (51) Pourquoi assistance a-t-elle été prêtée à une personne si méchante?  
 \*Assistance<sub>i</sub> a été prêtée à cette personne-ci bien qu'elle<sub>i</sub> n'ait  
 pas été prêtée à celle-là.

Predicate nominals in subject position provide a parallel argument:

- (52) Depuis quand ton meilleur ami est-il Jean-Jacques?  
 Pourquoi ta meilleure amie est-elle Anne-Marie?

\*Son meilleur ami<sub>i</sub> est maintenant Jean-Jacques, mais il y a  
 trois ans il<sub>i</sub> était Michel.  
 \*On sait que ta meilleure amie<sub>i</sub> est Anne-Marie, mais à notre  
 avis elle<sub>i</sub> devrait être Jacqueline.

Conversely, there exist cases in which NP's otherwise associable with a certain pronoun cannot co-occur with it in complex inversion; these all involve the pronoun 'ce':

- (53) C'est faux, cela.  
 Cela m'intéresse bien que ce soit faux.  
 Ce que tu dis n'intéresse personne parce que c'est insensé.  
 C'est marrant, les enfants.  
 C'est un garçon intelligent, ton ami.  
 Son ami a l'air bête bien que ce soit un garçon malin.

\*Pourquoi cela est-ce faux?  
 \*En quoi ce qu'il dit est-ce insensé?  
 \*De quelle façon les enfants est-ce marrant?  
 \*Pourquoi ce garçon n'est-ce pas un bon élève?

Returning now to the question of the derivation of complex inversion, let us assume that the appearance of the subject pronoun is to be accounted for by means of a rule placing a pronominal copy of the subject into post-verbal position: 'Tout est en ordre' → 'Tout est-il en ordre.' It is clear from the above example that this copying rule must be distinct from whatever rules are to handle pronominalization in general (this follows trivially if pronouns are to be generated in the base). The nature of the above examples, moreover, suggests that the copying rule in question best be considered a simple reduplication of the features of person, gender, and number (although the latter plays no overt role, since the plural 's' of the post-verbal subject pronoun is never pronounced) of the subject NP. Thus all third-person singular, masculine NP's will be reduplicated as 'il'; their indefinite or demonstrative character ('rien, tout, cela, etc.) will have no effect on the operation of such a rule. (One would also have to require that the spelling out of a pronoun marked only as third person, masculine, singular be 'il' - this might then be related to the appearance of 'il' as the 'dummy' pronoun in 'il fait beau', 'il semble que', 'il faut que', 'il y a Jean qui veut te poser une question', etc.) The non-appearance of 'ce' in this construction suggests that 'ce' could not represent the spelling out of such a limited set of features.

This copying rule would then be stated so as to apply in questions, and with certain adverbs, and so as to place the copied pronoun directly after the tensed verbal element. To avoid the extremely undesirable position of having a totally distinct inversion rule applying in the same environments and placing the pronoun in the same position, in sentences like 'Est-il là?', one would need to claim that such sentences are in fact derived through copying, with subsequent deletion of the subject NP: 'Lui est là' --- 'Lui est-il là' --- 'Est-il là?'.<sup>29</sup>

We shall now proceed to argue that the description of complex inversion in terms of a rule placing a pronominal copy of the subject into post-verbal position is incorrect. Consider the following sentences:

- (54) a. Pourquoi Jean et moi ne devrions-nous pas partir tout de suite?
- b. Pourquoi Jean et moi ne devrait-on pas partir tout de suite?

If the subject NP is 'Jean et moi', the 'copied' pronoun can be either 'nous' or 'on'.<sup>30</sup> It is difficult to see how a rule copying the grammatical features of an NP can account for such a dual possibility. Such a rule might be expected to yield 'nous', but not 'on', since in other respects conjoined NP's like 'Jean et moi' act like first-person NP's:

- (55) Jean et moi devrions partir tout de suite.
- \*Jean et moi devrait partir tout de suite.

Even worse, 'on' is grammatically singular:

- (56) On doit partir.
- \*On doivent partir.

where its putative source is plural. A copying rule could be maintained in the face of these examples, however, if one postulated a rule deriving 'on' from 'nous' here, and if that rule applied after the copying transformation. However, we argue elsewhere<sup>31</sup> that the 'nous'/'on' alternation is best described otherwise. If this conclusion is correct, sentences (54) constitute a serious problem for the copying rule.

Even assuming that a 'nous' + 'on' rule could be justified, however, sentence (56b) still poses a difficult problem. The verb agreement in that sentence is with respect to 'on', not to 'Jean et moi':

- (57) \*Pourquoi Jean et moi ne devrions-on pas partir tout de suite?

This means that the agreement rule will have to be unnecessarily complicated to work (in this case only) with respect to a following, rather than preceding, subject, since, under the copying hypothesis, there is no point in the derivation of (54b) at which 'on' precedes the verb.

Considering for a moment a more general question about verb agreement in French, we note that there is a sense in which sentences with complex inversion actually contain two subjects, one NP subject and one clitic

subject, the two usually agreeing in number and person. Sentence (54b) shows that in the one case where they do not agree, the verb agreement<sup>32</sup> is made with respect to the clitic subject (which, in the analysis we shall propose below, originates to the left of the verb). This dual character of the notion 'subject' in French bears, moreover, on the question as to whether transformations should be allowed to refer to relational notions, such as 'subject', or whether they should be restricted to referring to syntactic categories, such as NP. In fact, if we are correct in postulating the two transformations, STYL - INV and SUBJ - CL - INV, then our analysis constitutes a strong argument in favor of the claim made by the theory of transformational grammar that the 'notion' subject should not be relevant to the formulation of transformations. On the one hand, these two transformations use syntactic categories to distinguish between two syntactically different kinds of subjects. On the other hand, if transformations could refer to 'subject', we should be able to formulate a rule such as: "in questions, invert subject and verb", in which case the existence of 'partira-t-il?' would lead us, incorrectly, to expect 'partira Jean?' to be grammatical. In analogous fashion, the contrast: 'Eile sait tres bien a quelle heure partira son amie.' vs. '\*Eile sait tres bien a quelle heure partira-t-il.' would be inexplicable.<sup>33</sup>

The distinction between NP subjects and clitic subjects allows us to account for a couple of striking contrasts within the complex inversion paradigm too. Assume that we have a rule inserting a pronominal copy of the subject in post-verbal position. In the general case this rule will apply to subject NP's; we thus predict that it will not apply to subject clitics, i.e., that it will not be possible to have a clitic subject before the verb and a pronominal copy of it after. The following paradigm illustrates this fact:

- (58) Cela est-il vrai?
- Ceci est-il faux?
- Ça tiendra-t-il?

- (59) \*C'est-il faux?
- \*Ce ne serait-il pas vrai?

As subjects, 'cela', 'ceci', and 'ça' can be 'copied' onto the verb as 'il' in the complex inversion construction, but 'ce' cannot.<sup>34</sup> 'Ce' differs from the others precisely in that only it is a clitic:<sup>35</sup>

- (60) Est-ce vrai? \*Est cela vrai? \*Tiendra ça?

- \*Ce, à mon avis, doit être faux.
- Cela, à mon avis, doit être faux.

- \*Tout ce sera bientôt prouvé.
- Tout ça sera bientôt prouvé.



\*C'est vrai, ce.  
C'est vrai, ça.

Similarly, 'quelqu'un' and 'on' can be semantically rather alike (not exactly), yet still differ with respect to complex inversion:

(61) Quelqu'un nous attend.  
On nous attend.

(62) Quelqu'un nous attend-il?  
\*On nous attend-il?

The reason is that 'on', but not 'quelqu'un', is a clitic:

(63) Nous attend-on?  
\*Nous attend quelqu'un?

\*On, à mon avis, nous attend.  
Quelqu'un, à mon avis, nous attend.

\*On de très important nous attend.  
Quelqu'un de très important nous attend.

Again, if syntactic processes applied to 'subjects' rather than to syntactic categories, it would be difficult to understand the asymmetry of (58-9) and (62).

Let us now return to the question of the derivation of the 'complex inversion' construction. We have been considering the possibility that the pronoun in sentences like 'Cela est-il vrai?' is introduced by means of a transformation that places a pronominal copy of the subject to the right of the tensed verb; we have called this the copying hypothesis. We argued subsequently that the 'on' of sentences like (54b) did not lend itself to such a description, and created a problem for the rule of subject-verb agreement. We shall now take up additional arguments against the copying hypothesis.

The 'on' of (61) is semantically akin to indefinite pronouns, e.g., 'quelqu'un'. In the complex inversion construction, 'quelqu'un' is copied as 'il'; 'on' is not a possible 'copy' of an indefinite pronoun:

(64) Quelqu'un nous attend-il?  
\*quelqu'un nous attend-on?

This correlates with our description of the copying rule as reproducing the barest grammatical features of the subject NP. The problem, then, is how to account for the appearance of this 'on' in post-verbal position in sentences like 'Nous attend-on?'. We recall that in order to capture, under the copying hypothesis, the systematic similarity between the complex inversion construction and the simple inversion of the subject clitic, we

need to derive sentences like: 'Part-il?' from '\*Lui part-il' with subsequent deletion of 'lui'. Thus, to derive 'Nous attend-on', we must find a Pro<sub>x</sub> such that the copying transformation applied to 'Pro<sub>x</sub> nous attend' will yield 'Pro<sub>x</sub> nous attend-on'; the Pro<sub>x</sub> could then be deleted. In light of (64) though, it is difficult to see what such a Pro<sub>x</sub> could be; unless we propose some ad-hoc complication to the copying transformation, the result of its application to any third person singular, masculine pronoun will be 'il'.

This type of difficulty is even more striking with respect to 'ce':

(65) Est-ce vrai?  
Est-ce vraiment un homme intelligent, ton ami?  
Est-ce vraiment aussi matin que ça, les enfants?  
Est-ce à Paris que tu habites?

Again, the question is how to account for the post-verbal position of 'ce'. We saw above (V. (53)) that the potential copying rule had to be designed so as never to produce the pronoun 'ce' as the copy of the subject NP, even in the case of NP's closely related to 'ce' such as 'cela', 'ceci', 'ce qu'il dit'. But this means that the 'ce' in (65) can not be the result of the copying rule; i.e., there is no Pro<sub>y</sub> such that the result of the copying rule's applying to it will be 'ce'.  
The sentences in (65), as well as

(66) Nous attend-on?

could, on the other hand, be derived in a natural way by means of a simple inversion rule (SUBJ - CL - INV) from the corresponding declaratives:

(67) C'est vrai.  
C'est vraiment un homme intelligent, ton ami.  
C'est très matin, les enfants.  
C'est à Paris que tu habites.

(68) On nous attend.

Thus even if one postulates a copying rule for sentences with complex inversion, there remain the cases of post-verbal 'ce' and indefinite 'on' which are best derived via a simple inversion rule. But this would mean a return to the undestorable situation of having two distinct rules, the copying rule and SUBJ - CL - INV, which place a pronoun in the same post-verbal position and apply in exactly the same environments.<sup>36</sup> This duplication could be avoided if the derivation of the complex inversion construction itself involved an inversion rule. Thus, the grammatical sentence of (64) would be derived from an intermediate stage: 'Quelqu'un il nous attend'. This approach would also avoid the agreement problem (V. (57)), if the agreement rule preceded the inversion rule. Before exploring the consequences of such an analysis,

We shall offer one additional argument against the copying hypothesis. The pronominal 'copy' of the subject NP in the complex inversion construction occurs in the form of a clitic pronoun, and not as the strong form of a pronoun:

(69) Pourquoi cet enfant pleure-t-il?  
\*Pourquoi cet enfant pleure lui?

De quoi vos amis ont-ils parlé hier soir?  
\*De quoi vos amis ont eux parlé hier soir?

Under the copying hypothesis, this fact could no doubt be described by specifying that the copied pronoun be attached to the finite verb. One might, however, ask a more difficult question, namely: why is it that the copied pronoun is attached to the finite verb? Given the decision to use a copying transformation, it would be just as easy formally to have the pronoun placed next to the verb, as in the starred sentences of (69), as to have it attached to it. In other words, a language exhibiting a reduplicated clitic pronoun would be as easily describable, in the context of the copying hypothesis, as a language exhibiting a reduplicated non-clitic pronoun. Unfortunately, this predicted equality does not seem to correspond to the facts, at least in the case of the Romance languages. Those Romance languages which do not have subject clitic pronouns do not have a 'complex inversion' construction. More strikingly, French developed the complex inversion construction only after the subject pronouns acquired clitic status.<sup>37</sup> This suggests that there might be a significant generalization between the existence of subject clitics and that of the complex inversion construction. Thus we might speculate that in any language exhibiting a complex inversion construction, the 'reduplicated' or 'inverted' pronoun will be a clitic (where we might take clitic here to mean 'dominated by the node V'). If this is in fact a valid generalization, then it is one which is not explained under the copying hypothesis.

Let us therefore reconsider this problem in the light of what we shall call the inversion hypothesis. Under this hypothesis, the common properties of the complex inversion construction and that involving the simple inversion of the clitic subject, e.g., 'Partira-t-il?', will be described by attributing the position of the post-verbal clitic pronoun in both constructions to the effect of the rule discussed in Section I, 1.e., SUBJ - CL - INV. Just as 'Partira-t-il?' is derived from 'Il partira' via the rule of SUBJ - CL - INV, a sentence such as 'Cela est-il vrai?' will be derived from the intermediate structure: '\*Cela il est vrai?' via application of the very same rule. How then does this hypothesis permit a more insightful account of the correlation between 'complex inversion' and clitics? Notice first that in surface structure at least, there are really two distinct subject positions in French. In sentences with NP subjects, the subject is dominated by the node S:



In sentences with clitic subjects, on the other hand, the subject will end up dominated by the node V:<sup>38</sup>

Pro  $\swarrow$  V

Although there do not seem to be any cases of two subject positions being filled in any one surface structure,<sup>39</sup> it would not be implausible to claim that two could be filled at some intermediate stage of the derivation. Such an intermediate stage could then serve as a source for the complex inversion construction, via the rule of SUBJ - CL - INV.

Interestingly, the inversion hypothesis could not be naturally extended to generate the ungrammatical sentences of (69). In order to generate a sentence like '\*Pourquoi ces enfants pleurent eux?' via an inversion rule, it would be necessary to pass through an intermediate: '\*Pourquoi ces enfants eux pleurent?', a structure which would contain two NP subjects, i.e., an intermediate structure with two NP subjects and one clitic subject can. What this means is that the correlation between complex inversion and clitics is better accounted for under the inversion hypothesis than under the copying hypothesis.<sup>40</sup>

In fact, if it is correct that no language can have a complex inversion construction<sup>41</sup> unless it also has subject clitics, then not only is the copying hypothesis wrong for French, but the theory of grammar must be constrained so as to disallow the formulation of a transformation placing a pronominal copy of the subject to the right of the verb. If such a rule could be formulated, the theory would be too powerful in that it would permit the description of impossible languages. One straightforward way of restricting the theory to this end would be to prohibit the formulation of any transformation creating a pronominal copy of any constituent. This approach would also successfully eliminate the possibility of deriving '\*Pourquoi ces enfants pleurent eux?' by placing a copy of the subject in between it and the verb: '\*Pourquoi ces enfants eux pleurent?' and then inverting the copied pronoun and the verb.<sup>42</sup> Formally speaking, 'creating a pronominal copy of the subject' would not be an elementary transformation, but would rather involve copying the subject NP and then pronominalizing the copy. This means that pronominal copy transformations would automatically be excluded if pronominalization transformations in general did not exist. In other words, the copying hypothesis for the complex inversion construction in French depends crucially on the existence of a transformational solution to the pronominalization controversy, as opposed to an interpretive solution.<sup>43</sup>

If the suggestion that pronominal copy transformations be excluded from the theory of grammar, perhaps by excluding pronominalization transformations in general, is correct,<sup>44</sup> then the question arises how to generate the complex inversion construction under the inversion hypothesis. Deriving 'Cela est-il faux' from 'Cela il est faux' may very well have the advantage of relating the presence of the two subjects in the former sentence to the existence of two kinds of preverbal subjects in French, but the origin of the postulated intermediate stage 'Cela il est faux' needs to be made

precise. In particular, to be consistent, we may not derive the latter from 'Cela est faux' by means of a pronominal copy transformation.

SECTION III

We propose the following analysis: All NP's in French will be introduced in the base along with a subject clitic. Rather than having, for example, a phrase structure rule: NP + Det - N - COMP, we would have instead: NP + NP' - SCL, NP' + Det - N - COMP, where SCL = subject clitic. With third person NP's, SCL would be spelled out as 'il', 'elle', 'ils', 'elles' depending only on the syntactic features of number and gender of the NP. The actual agreement or interpretive rule. Outside of the features either by transformation or interpretive rule. Outside of the features of number and gender, the internal characteristics of a NP would play no role; 'il' could be the SCL corresponding to NP's as diverse as 'quelqu'un', 'cela', 'que + S', 'tout' and 'son meilleur ami', and a SCL will occur with the nominal components of idioms, e.g., 'assistance' - 'elle' (V. (46)-(52)).

The distribution of subject clitics in surface structure is limited: they occur post-verbally as a result of the application of SUBJ - CL - INV:

- (70) Cela est-il vrai?  
Pourquoi sont-ils partis?

and they occur pre-verbally in the absence of a subject NP:<sup>46</sup>

- (71) Il est malin.  
Ils sont partis.

- (72) \*Cela il est vrai.  
\*Tout il est en ordre.

We shall consequently propose a rule of subject clitic deletion (SUBJ - CL - DEL) which will apply after SUBJ - CL - INV to those subject clitics still preceded by their associated NP. The derivation of 'Cela est vrai' will thus be: 'Cela + il est vrai' + SUBJ - CL - INV (inapplicable) + SUBJ - CL - DEL + 'Cela + il est vrai'. The derivation of 'Cela est-il vrai?' will be: 'Cela + il est vrai' + SUBJ - CL - INV + 'Cela est + il vrai?' + SUBJ - CL - DEL (inapplicable).

The rule of SUBJ - CL - DEL will be stated: [NP' - SCL] + [NP' -  $\phi$ ].

In order not to incorrectly delete the subject clitics in (71), SUBJ - CL - DEL must apply after the deletion of the strong form of the pronoun, i.e., we take the deep structures for (71) to be approximately: 'Lui + il est malin', 'Eux + ils sont partis',<sup>47</sup> and postulate a rule deleting non-clitic subject pronouns. Let us call this rule STR - FRM - DEL (strong form deletion). The derivation of 'il est malin' will be then: 'Lui + il est malin' + STR - FRM - DEL + ' $\phi$  + il est malin' + SUBJ - CL - DEL

(inapplicable). With third person pronouns, STR - FRM - DEL may fail to apply in emphatic environments:<sup>48</sup> 'Lui est parti', in which case SUBJ - CL - DEL becomes applicable. We shall very tentatively state STR - FRM - DEL as:<sup>49</sup> [Pro - SCL] - V + [ $\phi$  - SCL] - V.

Finally, we postulate a rule of subject clitic adjunction (SUBJ - CL - ADJ), which will adjoin to the verb any subject clitic that has neither been attached post-verbally by SUBJ - CL - INV nor deleted by SUBJ - CL - DEL. The rule of SUBJ - CL - ADJ can be stated as follows:<sup>50</sup> [X - SCL] - NP

V - [X] - SCL + V. We leave open the question of exactly what type of NP

adjunction is involved. The derivation of 'Il est malin' will now be: 'Lui + il est malin' + STR - FRM - DEL + ' $\phi$  + il est malin' + SUBJ - CL - DEL (inapplicable) + SUBJ - CL - ADJ + ' $\phi$  + il est malin'. Neither the derivation of 'Est-il malin?' nor that of 'Cela est vrai' will involve application of SUBJ - CL - ADJ. For example, the derivation of the former will be: 'Lui + il est malin?' + STR - FRM - DEL + ' $\phi$  + il est malin?' + SUBJ - CL - INV + ' $\phi$  est + il malin?' + SUBJ - CL - DEL, SUBJ - CL - ADJ (both inapplicable).

Before turning to the precise formulation of SUBJ - CL - INV, we shall reconsider the derivation of the subject clitics 'ce' and 'on' in the light of the above analysis. We argued earlier against the copying hypothesis by noting that post-verbal 'ce' and 'on' did not lend themselves to a description in terms of a pronominal copy rule. [The facts supporting that argument (V. (53)-(57) and (64)-(68)) can equally well be taken to indicate that 'ce' and 'on' should likewise be treated differently from the other subject clitics under the inversion hypothesis.] The problem with the copying hypothesis was, specifically, that one needed more than one rule to get all the subject clitics to post-verbal position. Under the inversion hypothesis, once 'ce' and 'on' are introduced into pre-verbal subject clitic position in the manner to be described below, a single rule (SUBJ - CL - INV) will move all subject clitics to post-verbal clitic position under the appropriate conditions. We note, moreover, that the problem of getting 'ce' and 'on' to pre-verbal position is shared by both hypotheses, since 'ce' and 'on' exhibit clitic behavior in pre-verbal position (V. (58)-(63)). The need for but one post-verbal positioning rule is thus a decisive advantage for the inversion hypothesis. As a subject clitic, 'ce' has an extremely limited distribution; it occurs primarily with the verb 'être':

- (73) C'était vrai.  
Ce n'est pas faux.  
Ce sera Jean qui gagnera.  
Il ne faut pas que ce soit mal fait.  
Ce sont des filles intelligentes.

With most verbs, it is not a possible subject:

- (74) \*Ce correspond très bien à ce qu'il a dit.
- \*Ce compte énormément.
- \*Ce va embêter tout le monde.
- \*Ce ne veut rien dire.
- \*C'évoque les années 30.

What is possible here is 'ca':

- (75) Ça correspond très bien à ce qu'il a dit.
- Ça compte énormément.
- Ça va embêter tout le monde.
- Ça ne veut rien dire.
- Ça évoque les années 30.

There is moreover an odd gap in the distribution of 'ca': 'ca' cannot occur directly before 'est' (or 'était'):

- (76) \*Ça est faux.
- \*Ça est Jean qui me l'a dit.
- \*Ça est un type intelligent.
- \*Ça était excellent.

Compare:

- (77) Ça ne lui était pas inconnu.
- Ça va être Jean qu'on choisira.
- Ça m'a l'air d'être un type intelligent.

The ungrammaticality of (76) is not entirely attributable to the vowel following 'ca':

- (78) Ça intéresse tout le monde.
- Ça amuse pas mal ton copain.
- Ça évitera de tout refaire.

The fact that a gap in the paradigm of 'ca' is found precisely with the verb which allows 'ce' suggests that 'ce' and 'ca' be considered realizations of the same underlying element. This decision is supported by the occurrence of 'ce' and 'ca' alone (even to the exclusion of 'cela') in two rather particular constructions. One is the cleft-sentence construction:

- (79) Ce sera Jean qui gagnera.
- C'est toi qui l'as dit.
- Ça va être Jean qu'on choisira.
- Ça pourra être Jean qui gagnera.

- \*Cela sera Jean qui gagnera.
- \*Cela va être Jean qu'on choisira.

The other is a construction in which 'ce' (or 'ca') has a specific human referent; this is possible in sentences with predicate nominals such as the following:

- (80) C'est un garçon intelligent, ton ami.
- Ça m'a l'air d'être un garçon intelligent, ton ami.
- \*Cela est un garçon intelligent, ton ami.
- \*Cela m'a l'air d'être un garçon intelligent, ton ami.

Most strikingly, both 'ce' and 'ca' occur, in this construction, along with the word 'tous' (morphologically a plural):

- (81) C'est tous des salauds.
- Ça m'a l'air d'être tous des salauds.<sup>52</sup>

Compare:

- (82) \*Cela est tous des salauds.
- \*Cela m'a l'air d'être tous des salauds.
- \*Ce groupe partira tous demain.
- \*Sa famille aime toutes Jean-Jacques.

If one postulates a rule replacing a third person pronoun by a demonstrative in the predicate nominal construction to account for the appearance of 'tous', then the rule need mention only a single 'replacing element' if 'ce' and 'ca' are ultimately the same.

We consequently propose the following analysis for 'ca'/'ce': the two are realizations of an underlying element, call it 'C', which is introduced as a NP. The phrase structure rules given above will introduce an adjacent subject clitic node which could subsequently show up as 'il'. Thus we would have, schematically: [[C<sub>i</sub>] - [il]]. We now postulate a transformation, which shall be called CE - CL ('ce' - cliticization), stated as follows:<sup>53</sup>

CE - CL: [C<sub>i</sub> - [X]] - 'être' + [Ø - [C<sub>i</sub>]] - 'être'  
NP SCL NP SCL

In other words, 'C<sub>i</sub>' is inserted into subject clitic position when followed by 'être'. The rule CE - CL will precede both SUBJ - CL - INV<sup>54</sup> and SUBJ - CL - ADJ. [The rule SUBJ - CL - DEL, which, since it follows SUBJ - CL - INV, must follow CE - CL, will never be applicable to 'ce'; when 'ce' is in clitic position, the NP' position to its left is necessarily empty.] When in subject clitic position, 'C<sub>i</sub>' will be spelled out as 'ce'.<sup>55</sup>

When in NP position, it will be spelled out as 'ca', except if followed by a complement (dominated by the node S) such as the following:

- (83) Elle apprécie tout ce que tu fais.  
Ce à quoi elle pense, c'est ceci.

(Notice that in NP position the 'e' of 'ce' is not subject to elision: \*Ç'a quoi...').

- (84) Elle tient à ce que tu t'en ailles.  
Ce qu'il est bête.

In standard French at least, the 'ce' of (83)-(84) is not replaceable by 'ça'.<sup>56</sup>

The preceding analysis accounts for the fact that 'ce' does not co-occur with 'il' in the complex inversion construction (v. (59)). In addition, if the only source of subject clitic 'ce' is the rule CE - CL, as we would claim, then we have successfully accounted for the fact that 'ce' never appears as the inverted element in the complex inversion construction (v. (53)).

The fact that, in our analysis, the rule CE - CL is the only source of subject clitic 'ce', implies, moreover, that 'ce' may not be introduced by the rule(s) which account for the appearance of the other subject clitics. For example, if the node SCL is expanded in the base as a complex of features, including only whatever features are necessary to describe the different persons, plus the features + masculine, + singular (if these features are fully specified, i.e., with either '+\_m' or '-\_m', then there must be a filtering mechanism to insure that NP<sub>i</sub> and SCL match correctly, e.g., '\*le garçon-elle'), then the set of subject clitics 'il(s)', 'elle(s)', 'je', 'tu', 'nous', 'vous' represent the spelling out of the various combinations of different values of these features. In the third person, '+ masculine' will yield 'il(s)', '-masculine', 'elle(s)'. No combination of these features will be realizable as 'ce'.

Interestingly, this lack of parallelism between 'ce' and the other subject clitics is mirrored elsewhere in the grammar of modern French. 'Il(s)', 'elle(s)', 'je', 'tu', 'nous', 'vous' are paralleled by the strong form 'personal pronouns', which are all subject to the rule of clitic placement and to the rule involved in the derivation of possessive pronouns (cf. fn. 49):

- (85) Jean le(s)/la/me/te/nous/vous connaît.  
\*Jean connaît lui/eux/elle(s)/moi/toi/nous/vous.

son/leur/mon/ton/notre/votre livre.

'ça'/'ce' do not fall into this class:

- (86) \*Jean ça/ce comprend. Jean comprend ça.

That is, 'ça' is not subject to clitic placement. Nor does it have a possessive form; there is no form which is to 'la description de ça' as 'son portrait' is to 'le portrait de toi' (clearly 'cette description' is not a possessive corresponding to 'la description de 'ça)').

The subject clitic 'on' might seem to be more like the personal pronouns than is 'ça'/'ce'; semantically (and hence informally) speaking. In one of its uses, 'on' is interchangeable with the subject clitic 'nous'. There is no obvious difference in meaning between 'Nous sommes tous là' and 'On est tous là'.<sup>57</sup> In another of its uses, 'on' is similar (not identical) to the indefinite use of the subject clitic 'ils': 'Ils m'ont dit de ne plus revenir', 'On m'a dit de ne plus revenir.' Furthermore, unlike 'ce', and like the other subject clitics, 'on' is not severely constrained with respect to the range of verbs with which it may occur.

In the analysis we have proposed, the subject clitics 'il(s)', 'elle(s)', 'je', 'tu', 'nous', 'vous' can be considered to play no semantic role. In a sentence like 'Tu es bien', which will be derived from 'Toi-tu es bien', the semantic content of the subject can be attributed to the NP-like pronoun 'toi'. In at least two of its uses, however, 'on' does not lend itself to this type of description, i.e., there does not seem to be any NP-like pronoun to which one could attribute the semantic content of the 'on' in the sentence: 'On ne nous aime plus'. Nor is there an acceptable NP-like counterpart to the 'on' of: 'Quand on ne boit pas assez, on tombe malade'.<sup>58</sup>

We propose, then, that 'on' be the only meaning-bearing element introduced in the base under the node SCL. The deep structure of the two sentences in the preceding paragraph will contain a subject NP of the form: [Ø - [on]].<sup>59</sup> In sentences such as 'On est tous là', the subject

NP in deep structure will be: [NP<sub>i</sub> [nous] - [on]] (thereby accounting for

the appearance of 'tous'), 'On' will be specified as being compatible with a first person plural NP, but no others.<sup>60</sup> One could think of these conditions as subcategorization features. The deep structure of sentence (54b) - 'Pourquoi Jean et moi ne devrais-on pas partir tout de suite' will contain a subject NP of the form [[Jean et moi] - [on]].<sup>61</sup> The derivation

of sentence (54b) will subsequently involve application of the transformation SUBJ - CL - INV.

Let us now turn to the formal statement of this transformation. We recall that SUBJ - CL - INV is triggered by the environment 'question' rather than by the presence of an initial WH-word. Let us assume that there is a marker '+Q' associated with the initial question word: 'Çu...?'<sup>62</sup>

Since interrogative words also serve other purposes e.g., 'qui', 'quoi', 'lequel', 'ou' are also possible relative pronouns, and since there is no overt interrogative element in yes-no questions, the marker '+Q' will be considered to have originated in sentence-initial position.<sup>62</sup>

An apparent problem for this analysis is posed by the fact that SUBJ - CL - INV does not apply in questions not exhibiting WH-movement:<sup>63</sup>

- (87) Tu habites où?  
Elle a dit quoi?

While the sentences in (87) can be interpreted as simple requests for information, the following can only be interpreted as echo questions:

- (88) Habite-t-il où?  
A-t-elle dit quoi?

The sentences of (88) imply a previously asked question of the form:

- (89) Habite-t-il à Paris?  
A-t-elle dit qu'elle va se suicider?

The sentences of (87) can have this kind of interpretation, i.e., as follow-ups to:

- (90) J'habite à Paris.  
Elle a dit qu'elle est malade.

but do not need to. The problem is that if (87) contains the marker '+Q', then SUBJ - CL - INV will apply and we would expect (88) to be possible as requests for information.

However, it is not clear that one must assume the existence of the same marker in (87) as in questions with WH-movement:

- (91) Où habites-tu?  
Qu'a-t-elle dit?

To do so would amount to saying that WH-movement was optional in questions, although obligatory in relatives and exclamations:<sup>64</sup>

- (92) La fille avec qui il est sorti est là.  
Quelle belle voiture vous avez?

- \*La fille (qu')il est sorti avec qui est là.  
\*Vous avez quelle belle voiture?

A funny coincidence would then be left unexplained, namely, of the three WH-constructions, the only one that need be specified as undergoing optional movement is precisely the one which has a corresponding 'echo' construction (there do not seem to exist echo relatives or exclamatives). This suggests that (87) might be derived as echo questions, even in their use as requests for information. In other words, (87) would not be syntactically ambiguous, but would derive from a single deep structure

(not containing the marker '+Q'). The semantic component would then assign such sentences two distinct 'meanings'. If this is correct, we might expect to find syntactic differences between (87) and (91) which are not explainable simply in terms of difference in position of the WH-word. There are several such differences. First, there are no embedded questions corresponding to (87):

- (93) Elle sait très bien où tu habites (corresponds to (91)).

- (94) \*Elle sait très bien tu habites où.  
\*Elle sait très bien si tu habites où.

Second, there is a difference in certain impersonal constructions:

- (95) \*Lesquelles a-t-il été mangé?

- (96) ?Il a été mange lesquelles?

Third, we have the contrasts:

- (97) Comment ça se fait que tu n'étais pas là?

- (98) \*Ça se fait que tu n'étais pas là comment?  
\*Ça se fait comment que tu n'étais pas là?

- (99) Comment est-il possible que tu partes déjà?

- (100) \*Il est possible comment que tu partes déjà?  
\*Il est possible que tu partes déjà comment?

Fourth, based on the word 'diable':<sup>65</sup>

- (101) Où diable est-il allé?  
Que diable a-t-il laissé dans le four?

- (102) \*Il est allé où diable?  
\*Il a laissé quoi diable dans le four?

The crucial point is that the ungrammaticality of (94), (98), (100) and (102) and the grammaticality of (96) are independent of the meaning, i.e., independent of whether the interpretation is as a request for information or as an echo question. We conclude that questions in which WH-movement has not applied should be treated parallel to echo questions, and that there is no marker '+Q' in their deep structure.<sup>66</sup>

The formal statement of the transformation SUBJ - CL - INV will therefore include a term representing the interrogative element: X (X can be null in the case of yes-no questions in which case the marker is unattached.)

Since in the general case, the interrogative element is not the (subject) NP which contains the subject clitic to be inverted we must have a term:

[Y SCL]. Let us then write:

NP  
X [Y SCL] V + X [Y] V + SCL  
+Q NP +Q NP

Y is a variable<sup>67</sup> and V a verb, in particular the verbal element adjacent to the subject (i.e., the finite verb). Y can be null, e.g., as in the case of 'ce'. The string V + SCL will be dominated by the node V in derived structure (cf. fn. 38). The derivation of 'Cela est-il vrai' will now be: +Q [Cela-il] est vrai + SUBJ - CL - INV + +Q Cela est + il vrai?'. The derivation of 'Est-ce vrai?' will be: +Q[C, - il] est vrai + CE - CL + +Q [Ø - C, ] est vrai + SUBJ - CL - INV + +Q[Ø] est + C, vrai' + morphonemics + 'est-ce vrai?'.

The formulation of SUBJ - CL - INV given above predicts, correctly, that if the questioned element is itself the subject NP, then the rule will be inapplicable; i.e., the structural description will not be met if the marker +Q is attached to the only NP preceding the verb. The SCL contained in the questioned subject will therefore not be attached to the verb and will subsequently be deleted by the rule of SUBJ - CL - DEL. Thus we will have:

(103) Qui vous a offert ce livre?  
Lesquelles te plaisent le plus?  
Quelle femme t'a dit cela?

and not:<sup>68</sup>

(104) \*Qui vous a-t-il offert ce livre?  
\*Lesquelles te plaisent-elles le plus?  
\*Quelle femme t'a-t-elle dit cela?

In non-colloquial French, the rule of SUBJ - CL - INV is obligatory. The following sentences are only possible in colloquial French:

(105) Où tu vas?  
Pourquoi il pleure?

The same holds true with complex inversion. Only in colloquial French may we have:

(106) Quand ton ami va venir?  
Pourquoi ton fils a fait ça?

In non-colloquial French, we thus get:

(107) Où vas-tu?  
Pourquoi pleure-t-il?

Quand ton ami va-t-il venir?  
Pourquoi ton fils a-t-il fait ça?

Sentences such as (106), however, raise the further question of the interaction between SUBJ - CL - INV and the transformation discussed in Section I, STYL - INV, since one also gets:

(108) Quand va venir ton ami?

An important observation is that STYL - INV may not apply if SUBJ - CL - INV has previously applied. For example, if SUBJ - CL - INV applies as in (107) to yield 'Quand ton ami va-t-il venir?', STYL - INV may not then apply to produce:

(109) \*Quand va-t-il venir ton ami?

A sentence like (109) is only possible as an instance of detachment. This is clearly shown by the following, where confusion with detachment is impossible (cf. \*Il est faux, cela - v.(47)):<sup>69</sup>

(110) Depuis quand tout cela t'amuse-t-il?  
A quoi tout cela vous a-t-il fait penser?

(111) \*Depuis quand t'amuse-t-il tout cela?  
\*A quoi vous a-t-il fait penser tout cela?

In the same vein, STYL - INV may apply to an intermediate '\*Que tout cela veut dire' to yield:

(112) Que veut dire tout cela?

but it may not apply to an intermediate '\*Que tout cela veut-il dire' to yield:<sup>70</sup>

(113) \*Que veut-il dire tout cela?

The above facts would follow naturally if STYL - INV were ordered before SUBJ - CL - INV; this ordering would immediately exclude (109), (111), and (113). In the derivation of (108), STYL - INV would apply first, after which SUBJ - CL - INV would be inapplicable. The ordering of STYL - INV before SUBJ - CL - INV (which one might attempt to relate to the latter's applying only in non-embedded sentences) has, moreover, an additional desirable consequence. Consider the following:

(114) A quelle heure le concert va commencer?

(115) Elle sait très bien à quelle heure le concert va commencer.  
L'heure à laquelle le concert va commencer ....

In both (114) and (115), STYL - INV could have applied:

(116) A quelle heure va commencer le concert?

(117) Elle sait très bien à quelle heure va commencer le concert.  
l'heure a laquelle va commencer le concert ...

but didn't. The problem is that (114) is grammatical only in colloquial French, whereas (115) is possible in both colloquial and non-colloquial. This might seem to indicate that in non-colloquial French, STYL - INV need be specified as optional in embedded sentences but obligatory in non-embedded sentences.

The ordering of STYL - INV before SUBJ - CL - INV, however, permits us to regard STYL - INV as uniformly optional, i.e., both in embedded and non-embedded structures, even in non-colloquial French. Recall that in non-colloquial French, SUBJ - CL - INV is obligatory (cf. (105)). Consider now the derivation of (114), with STYL - INV everywhere optional. First, STYL - INV may or may not apply. If it does apply, we get (116). If it does not apply, we move on to SUBJ - CL - INV. In colloquial French, SUBJ - CL - INV need not apply and we derive (114). In non-colloquial style, SUBJ - CL - INV is obligatory and therefore must apply, yielding:

(118) A quelle heure le concert va-t-il commencer?

Sentence (114) is not generable in non-colloquial French because SUBJ - CL - INV is obligatory there; STYL - INV may therefore be considered uniformly optional.

The ordering of STYL - INV before SUBJ - CL - INV, combined with the ordering, suggested earlier, of SUBJ - CL - INV before SUBJ - CL - ADJ, implies that STYL - INV will invariably apply at a point at which the subject clitics have not yet been moved out from their original NP.<sup>71</sup> The latter part of the derivation of (116) is, then: 'A quelle heure [le concert-11] va commencer' → STYL - INV → A quelle heure va commencer [le concert-11] → SUBJ - CL - INV (inapplicable) → SUBJ - CL - DEL → A quelle heure va commencer [le concert - 81]'.<sup>72</sup>

The grammar of French will thus contain two distinct "subject-inversion" transformations, STYL - INV and SUBJ - CL - INV, applying in that order. In addition we have postulated a number of other transformations related to the syntax of subject clitics: STR - FRM - DEL, SUBJ - CL - DEL, SUBJ - CL - ADJ and CE - CL (See Appendix), and proposed that subject clitics originate as a kind of NP affix. We shall at present turn to a brief discussion of some issues related to this proposal.

One of the considerations that motivated our analysis of subject clitics was the impossibility of a complex inversion construction of the form '\*Pourquoi cet enfant pleure lui?' (v. (69)). The analysis given here could not readily be extended to describe such a construction without allowing NP-like pronouns to be generated as affixes on NP's. Insofar

as the generation of clitics as affixes is far more natural than the generation of NP's as affixes, we can claim to have explained, e.g., why French, a language with subject clitics, is the only Romance language to have a complex inversion construction.

The interaction of subject clitics and the problem of coreference may turn out to provide additional support for the present analysis. Given that the deep structure of 'il est là' will contain a NP of the form [[lui] - [il]], there is no longer any reason to have such subject clitics NP<sub>i</sub> SCL involved in coreference relationships. For example, the possible coreference between 'jean' and 'il' in 'jean croit qu'il est malade' could be described in terms of coreference between 'jean' and the ultimately deleted 'lui': 'jean<sub>i</sub> croit que lui<sub>i</sub> -il est malade'. [The term 'coreference' would then be inappropriate for the relationship between 'lui' and 'il' here, or between 'cela' and 'il' in 'cela est-il faux?']. This may in fact provide an explanation for the facts of (47), (48) and (50), i.e., the impossibility of establishing a true coreference relationship between 'il' and 'cela', 'ce qu'il a dit', 'que + S', 'tout', 'rien'. This would follow, under the hypothesis that coreference is determined by 'lui' rather than 'il', from the impossibility of coreference between 'lui' and the NP's in question:

(119) \*Cela<sub>i</sub> m'intéresse parce que tu as parlé de lui<sub>i</sub>.

\*Ce<sub>i</sub> qu'elle a dit, je pense souvent à lui<sub>i</sub>.

\*Que<sub>i</sub> tu sois malin n'intéresse personne; on ne pense plus à lui<sub>i</sub>.

\*Tout<sub>i</sub> est tombé parce qu'elle s'est appuyée sur lui<sub>i</sub>.

\*Rien<sub>i</sub> n'est tombé parce qu'elle (ne) s'est (pas) appuyée sur lui<sub>i</sub>.

The ungrammaticality of (119) might in turn be explained by the absence of a head noun in any of the relevant NP's,<sup>72</sup> if the rule determining the possibility of coreference with 'lui' depends on the presence of a head noun.

One apparent difficulty with the above proposal is that 'cela', 'ce que tu dis', and 'que S' can sometimes be referred to by 'le' (although to analyze such instances of 'le' as a kind of special neuter pronoun not derived from 'lui'. This in turn might be linked to the existence of a pro-predicate 'le', as in 'Malin, tu ne l'as pas'. There is also a problem with 'lui' referring to inanimates:

(120) ?Je n'aimé pas ce livre<sub>i</sub> parce que tu m'as trop parlé de lui<sub>i</sub>.



For many speakers, sentences like (120) are not possible, despite the presence of the head noun 'livre'. If we are correct in our account of the ungrammaticality of (119), then the ungrammaticality of (120) must be due to some additional mechanism, perhaps one that imposes an animate interpretation on overt occurrences of the strong form pronouns. The difference in explanation between (119) and (120) would then correlate with the fact that judgments about (120), but not (119), vary greatly from speaker to speaker (some accept (120)) and even seem to depend on the choice of verb. Such an analysis would also be consistent with the fact that 'il' can refer readily to inanimates: 'Ce livre, te plaît parce qu'il n'est pas long' (as can dative 'lui', with certain verbs).<sup>73</sup>

Finally, the special status of subject clitics, combined with the assumption that coreference involving 'lui' depends on the presence of a head noun, would suffice to explain the fact that 'on' (a subject clitic) cannot enter into a coreference relationship with 'lui', 'il', 'le':

- (121) \*On<sub>i</sub> m'a dit de lui<sub>i</sub> envoyer ce colis.
  - \*On<sub>i</sub> m'a demandé de l<sub>i</sub> aider.
  - \*On<sub>i</sub> m'a dit qu'il<sub>i</sub> était triste.
  - \*On<sub>i</sub> m'a longuement parlé de lui<sub>i</sub> (-même).
- The above are instances of 'on' meaning approximately some unspecified person. The same paradigm holds for generic 'on':<sup>74</sup>
- (122) \*Quand on<sub>i</sub> croit qu'il<sub>i</sub> est malade, ...
  - \*Quand on<sub>i</sub> parle trop souvent de lui<sub>i</sub> (-même) ...
  - etc.

and for the 'on' associated with 'nous'.

APPENDIX

For convenience, we repeat the formulation of the various transformations given in the text:

- STR - FRM - DEL (deletion of the strong form subject pronoun):<sup>75</sup>
- [Pro - SCL] - V + [Ø - SCL] - V
- NP NP
- STYL - INV (stylistic inversion):
- [ A (que) NP X] → [A (que) X NP]
- S +MH S S S

SUBJ - CL - INV (subject clitic inversion):<sup>76</sup>

X [Y SCL]V + X [Y] V + SCL

+Q NP +Q NP

SUBJ - CL - DEL (subject clitic deletion):<sup>77</sup>

[NP' - SCL] → [NP' - Ø]

NP NP

SUBJ - CL - ADJ (subject clitic adjunction):

[Y SCL] - V + [Y] - SCL + V

NP NP

CE - CL ('ce' - cliticization):

[C, - [X]] - 'être' + [Ø - [C,]] - être

NP SCL NP SCL

Except for CE - CL, the rules will apply in the order given (see text: for relevant discussion), i.e.:

- STR - FRM - DEL
- STYL - INV
- SUBJ - CL - INV
- SUBJ - CL - DEL
- SUBJ - CL - ADJ
- CE - CL

CE - CL must apply before SUBJ - CL - INV, but its ordering with respect to the first two of the above is unclear.

NOTES

1. An example of this type, using the expression 'monter à cheval' is given by Renchon (1967:74).
2. There are other factors involved. The sentence:
  - (a) ?De quel œil voit double celle-ci?
 is better if 'celle-ci' refers to someone being pointed out ('this one here') than if it refers to someone previously mentioned in the conversation ('the latter'). Comparable distinctions may play a role in sentences like 'Il est arrivé ceci'.

3. Counterparts (with respect to the linear sequence of constituents) to many of the examples of (4) can be found which are grammatical:

- (b) On n'arrive pas à faire changer cette fille d'avis.  
Il connaît sa femme mieux que toi.  
Tu devrais prévenir ce charlatan que tout risque d'aller de moins en moins bien pour lui.

so that there is no hope of accounting for (4) in terms of "unlikely sequences" of constituents. (In fact it is rather the sequence "subject pronoun plus complément" which is "unlikely", since it occurs only as a result of SUBJ - CL - INV.)  
In particular the first two of the above sentences show that there is another rule in French (v. Kayne (forthcoming-d) which can 'break up' expressions like 'changer d'avis', and the sequence 'devenir' plus adjective, even though STYL - INV cannot (since STYL - INV is not a subject-verb inversion rule). Furthermore, no insight would be gained into the ungrammaticality of sentences such as:

- (c) \*Où voudrait ton ami aller?  
\*Que va Jean faire?
- (d) Que laissera tomber Jean?  
\*Que laissera Jean tomber?
- (e) \*Quand laissera-t-il partir sa fille?  
\*Quand laissera Jean partir sa fille?

Even though the verb 'laisser' can occur separated from a following infinitive by a NP in sentences such as:

- (f) Marie a laissé Jean tomber.  
On a accepté de laisser Jean partir.
- (g) Que laissera-t-il tomber?

STYL - INV may still not place the subject of 'laisser' in between 'laisser' and the infinitive in (d) and (e). As expected, SUBJ - CL - INV acts differently, as shown by the first sentence in (e), as well as by:

4. The opinions of various grammarians seem to bear out this observation; v. Cledat (1928), Renchon (1967). For many examples bearing on the question of exactly which complements exhibit what behavior, see Engwer (1933, 1935) and especially Strohmeyer (1935).

5. The question of VP constituency in English is considered in Chomsky (1965), Lakoff and Ross (1966), and Michelson (1969).  
6. If STYL - INV is maintained as a rule moving subject NP's to sentence-final position, then the derivation of (11) must involve some subsequent reordering rule to place the complement in final position. The nature of such a rule is unclear; in particular, pairs such as:

- (h) \*Quand écrira à Jean la fille dont nous avons parlé l'autre jour?  
Quand écrira la fille au garçon dont vous avez parlé l'autre jour?
- (i) ?On donnera à ce garçon ce livre.  
On donnera à ce garçon le livre qu'on a trouvé chez toi.

may not apply to the result of STYL - INV. This could be accounted for by ordering STYL - INV after "length-inversion", or perhaps, noting that the two rules have certain formal similarities, e.g., difference in acceptability due to factors of length, by claiming that such rules are to be interpreted as a disjunctive block. The type of reordering shown in (i) need not throw things to sentence-final position:

- (j) ?Il a fait porter à sa femme des livres.  
Il a fait porter à sa femme des livres par son domestique.
- (k) \*Où mettra cette fille ses livres?  
Où mettra-t-elle ses livres?  
\*Où mettra ses livres cette fille?

but a long subject increases acceptability but little:

- (l) \*?Où mettra ses livres la fille qui est entrée en retard?
- (m) A quelle heure aura lieu la manifestation qui a été interdite par le gouvernement?

If the object is the nominal part of an idiom, the sentence is improved (cf. below with respect to relative clauses):

Whether or not the result is perfect may depend on the idiom (v. Renchon (1967:69)).

7. Those speakers who accept certain of the sentences in (4) will accept the corresponding embedded questions (and relatives - v. below). In embedded questions, STYL - INV is optional:

- (n) Tu sais très bien à quelle heure arrivera ton amie.  
Il voudrait savoir depuis quand cette fille est malade.

We shall take up in Section III the question of whether STYL - INV is to be considered optional or obligatory in non-embedded questions.

8. For some discussion of the embedded counterpart of yes-no questions, see Katz and Postal (1964). For some speakers, the inversion in embedded questions is more acceptable than in direct questions in the presence of a pronominal object:

- (o) ?Dites-nous quand les fils votre fils.  
?Quand les fils votre fils?

If the object is attached to an embedded infinitive, we have:

- (p) Dites-nous quand voudrait les fils votre fils.  
?Quand voudrait les fils votre fils?

The facts concerning such sentences are on the whole extremely unclear. There are no such "restrictions" on SUBJ - CL - INV:

- (q) Quand les fils ira-t-il?  
9. SUBJ - CL - INV seems to be able to apply in embedded sentences in the case of "est-ce que":

- (r) Je ne savais pas pourquoy est-ce qu'il était parti.  
Vous saurez bientôt quand est-ce qu'il va rentrer.  
Tu te rappelles parfaitement bien ou est-ce que tu as mis les billes.

This is not a general fact about the combination "ce est":

- (s) \*Tu sauras bientôt pourquoy est-ce important.  
\*Il ne comprend pas pourquoy est-ce à Paris qu'il doit aller.
- More striking, it is not true of embedded yes-no questions:
- (t) \*Tu sauras bientôt (si) est-ce qu'il va rentrer.  
\*Je ne savais pas (si) est-ce que je devais partir ou non.  
\*Il ne sait pas (si) est-ce qu'il peut se permettre cela.

The special behavior of 'est-ce que' here is certainly related to its semi-frozen character (v. Langacker (this volume)). In embedded questions, another reflection of this semi-frozenness lies in the fact that only with 'est-ce que' is interrogative 'que' (rather than 'ce que') permitted:

- (u) Tu sais très bien ce qu'il a fait.  
\*Tu sais très bien qu'il a fait.  
Tu sais très bien qu'est-ce qu'il a fait.

10. This is true even of NP's which can otherwise occur between the finite verb and the infinitive or past participle (cf. fn. 3):

- (v) Il voulait presque tout remettre en cause.  
Il a presque tout fait par lui-même.
- (w) ?Au moment où allait tomber presque tout  
\*Au moment où allait presque tout tomber  
?Le fils a qui a été laissé presque tout  
\*Le fils a qui a été presque tout laissé

These examples further indicate that STYL - INV is ordered after the rule moving "tout" / "tous" to the left (v. Kayne (forthcoming-d)).

11. Sentences such as (21) are more readily accepted than the corresponding interrogatives. Correspondingly, it is somewhat easier to find examples of STYL - INV applying even in the presence of an object, in particular in the case of idioms:

- (x) le jour où a pris fin la guerre de trente ans

See Le Bidois (1952:265) and Lerch (1934:388) for additional examples. Especially interesting in the light of the analysis proposed in the text is the fact that of the literary examples found by Le Bidois in which STYL - INV has applied despite the presence of a true direct object, all exhibit the order object-subject, e.g. (p. 266):

"Les plaisirs...auxquels danssa mémoire avaient donné leur forme ces canapés sur lesquels..."

rather than the order subject-object.

12. The linguistic significance of the generalization concerning clauses introduced by a WH-element is supported by the parallelism in the historical development of subject NP inversion in relatives and embedded interrogatives: see Orlopp (1888:27-8), Koopman (1910:103ff), Foullet (1921:246-7) and Phillipps (1886:23).

13. STYL - INV is also applicable in cleft sentences. The logic of the argument in the text leads to the conclusion that at that point in the

derivation of sentences such as:

(y) C'est à Paris qu'habite ce garçon.

at which STYL - INV applies there be a relative element to the left of "que". That clefts and relatives have something in common is suggested by the existence of sentences like:

(z) C'est ce garçon-là dont a parlé ton frère.

(cf. \*C'est à Jean à qui il a parlé, which was possible in earlier stages of French). For a detailed comparison of differing analyses of cleft sentences, see Moreau (1970).

Not surprisingly, SUBJ - CL - INV is inapplicable in clefts:

(a') \*C'est à Paris qu'habite-t-il  
\*C'est alors qu'a-t-elle éclaté.

For many speakers, STYL - INV is not applicable in sentences of the following type (although such sentences are often found in journalistic prose):

(b') ?Quand a crié l'enfant, tout le monde s'est affolé.

?Tu changeras d'avis quand rentrera ta femme.  
?Alors que chantait Marie, une bombe a éclaté.

Compare:

(c') Je ne sais pas quand a crié l'enfant.  
C'est alors qu'a éclaté la bombe.

The clear difference in status between (b') and (c') suggests that the derivation of such time-adverbial subordinate clauses does not involve the rule of MH-preposing, i.e., that they are not to be assimilated to relative clauses.

Such adverbial clauses also differ from constructions involving MH-preposing in that the former, but not the latter, are subject to a rule replacing the 'adverbial word' by 'que' in conjoined structures (v. Kayne (forthcoming-b)):

(d') Quand il viendra et qu'il verra ce qui s'est passé, il se fâchera.

(e') \*Elle sait quand il viendra et qu'il verra ce qui s'est passé.

One might wonder whether, for those speakers who accept (b'), the inversion there should be handled by some extension of STYL - INV. A similar question arises with the following constructions:

(f') Demain reviendront les deux mêmes personnes.  
Ici passera la nouvelle autoroute.  
A Jean correspond Paul.

The inversion triggered by certain preposed adverbials and prepositional complements, as in (f'), resembles that of STYL - INV in the placement of the subject:

(g') Demain vont venir les deux mêmes personnes.  
\*Demain vont les deux mêmes personnes venir.

and in its not taking place with subject pronouns:

(h') \*Demain reviendront-elles.  
\*Ici passera-t-elle.  
\*A Jean correspond-il.

cf. \*Quand a-t-il crié, tout le monde s'est affolé.

Since there is no preposed MH-element in these cases, the formulation of STYL - INV given in the text could not account for the inversion. Since it is not clear how to characterize the class of complements that can trigger inversion as in (f'), and since even there complete homogeneity is lacking:

(i') Demain les deux mêmes personnes reviendront.  
\*A Jean Paul correspond.

We shall leave open the question of whether it is (some extension of) STYL - INV itself that is to account for these cases.  
For discussion of the marginal:

(j') Viendront ensuite celles dont je vous ai parlé hier.

and related constructions, see Spitzer (1941).

14. This judgment accords with that of Nøjgaard (1967), Lerch (1934: 409), Le Bidon's (1952), Papic (1970), and Clédat (1928:88).

15. For discussion of this Q-marker, see Katz and Postal (1964) and Baker (1970). 'Q' might be reformulable as a feature attached to a COMPLEMENTIZER node - v. Chomsky (1971) and Bresnan (1970).

16. One might argue that the derivation of direct questions involves a deletion of "si", in which case the explanation for (28) would rather be like that for (31), but only if it is assumed that the deletion of "si" follows STYL - INV.

Equally plausible would be the assertion that 'si' is inserted in non-embedded questions lacking a WH-element, in which case the starred sentence in (31) would be excluded parallel to (28), if the insertion of

'si' followed STYL - INV. If it preceded STYL - INV, there would still be no problem, since an inserted 'si' is clearly not an element subject to WH-preposing.

We recall that "si" acts differently from the true WH-words with respect to the appearance of "est-ce que" in embedded questions, (v. fn. 9) although it is unclear how to relate that fact to the present discussion. 17. 'Si' corresponds much more closely to English 'if' than to 'whether'; the latter may be a WH-word synchronically, and apparently was definitively one in earlier stages of English (v. Klima (1965)):

(k') He doesn't know whether (\*if) to leave.

\*Il ne sait pas si partir.

(l') He doesn't know whether (\*if) or not he should leave.

\*Il ne sait pas si ou non il doit partir.

What is possible for (l') is: 'Il ne sait pas s'il doit partir ou non' and 'Il ne sait pas si, oui ou non, il doit partir.' The sentences in (k') are particularly revealing in that WH-words usually are possible with infinitives (for some discussion of 'pourquoi' - 'why' in this regard, see below): 'Il ne sait pas quand partir, à quelle heure partir, ou aller, laquelle choisir.'

In fact, there is no one word in French that corresponds to 'whether':

(m') He'll stay, whether or not you leave.

Il restera, que tu partes ou non.

This would seem to be significantly related to the absence of a true equivalent of 'either' (as well as 'neither' and 'both'):

(n') Either John or Mary           Ou Jean ou Marie  
Neither John nor Mary       Ni Jean ni Marie  
Both John and Mary           Et Jean et Marie

(o') Either one                   L'un ou l'autre  
Neither one                   Ni l'un ni l'autre  
Both (of them)               (Tous) les deux

18. Perhaps the 'si' of embedded questions should be related to that in:

(p') Si Marie vient, dis-lui d'attendre.

which, notably, does not allow STYL - INV:

(q') \*Si vient Marie, dis-lui d'attendre.

The absence of infinitivization in (k') might then be related to:

(r') Tu arriveras en retard si tu pars à cinq heures.

\*Tu arriveras en retard si partir à cinq heures.

The two 'si' differ, however, parallel to (d') and (e') with respect to 'replacement' by 'que':

(s') S'il vient en retard et qu'il se conduise mal, enquêtle-le.

\*Elle se demande s'il viendra en retard et qu'il se conduise mal.

19. STYL - INV is formally unlike subject-auxiliary inversion in English in that it is not a simple inversion of subject and verbal element, as shown by (4) and (5), and in that it is not triggered by the environment 'question', as shown by (2) and (3), as well as by its being optimally statable in terms of a preposed WH-element. In this regard, the grammatical sentences of (27) contrast with: What a fool he's been! \*What a fool has he been! How very right you are! \*How very right are you!

Both subject-auxiliary inversion in English and SUBJ - CL - INV in French occur with certain preposed elements, such as:

(t') Not once did he apologize

Peut-être viendra-t-il.

The classes of such elements are different in the two languages. In neither are they the same as those discussed in fn. 13 (f').

20. It is clear that in Emonds' framework SUBJ - CL - INV cannot be "structure preserving", but it is also necessary that it not fit the description of a "minor movement rule". This will be true by virtue of the formal properties of such rules if SUBJ - CL - INV is construed as attaching the clitic to the verb (v. Section III).

Relevant to this problem is the observation that in Middle French, the second half of a conjoined structure could act like an embedded sentence with respect to SUBJ - CL - INV: "est-ce vrai ou (si) c'est faux?" as well as with respect to the formally similar rule of clitic inversion in Imperatives: "fais-le cuire et le mange ensuite" (v. Haase (1969)) and Orlopp (1888:21).

21. Similarly, in environments other than questions in which SUBJ - CL - INV is applicable, e.g.:

(u') Peut-être est-il parti.

Sans doute reviendra-t-elle.

we have:

(v') \*Peut-être est Jean parti

\*Peut-être est parti Jean

\*Sans doute reviendra cette fille.

22. By subject clitic pronouns, we mean those pronouns subject to SUBJ - CL - INV. These exhibit clitic-like behavior (see text) and in this way share significant properties with the object clitic pronouns: 'Jean *ça* connaît'. Under certain circumstances, the non-clitic strong forms may be used as subjects: 'Toi seul aimes Marie'. (There is some morphological overlap between clitics and strong forms, e.g. 'nous', 'vous': 'Connaissez-vous Jean', 'Vous seul connaissez Jean', cf. 'Jean vous connaît', 'Jean ne connaît que vous.'). As NP's, the strong forms, when used as subjects, might be expected to undergo STYL - INV, but we have:

- (w') \*Quand partira lui?  
 \*Ce que dirai moi, c'est ceci.  
 \*C'est Jean que préfères toi.

In other cases, NP's with a coreferential function are subject to STYL - INV:

- (x') Un homme est entré. Que dira cet homme?  
 Voilà ce que dira cet homme.

The ungrammaticality of (w') is to be related to the impossibility of:

- (y') \*Moi dirai ceci.  
 \*Toi préfères Jean.

and to the fact that "Lui partira" is only possible with very special intonation. Evidence that this is the correct approach is constituted by the following paradigm:

- (z') \*Quand partira moi-même?  
 \*Que direz vous autres?  
 \*Ce que ferons nous deux, c'est ceci.

- (a'') \*Moi-même partira.  
 \*Vous autres direz cela  
 \*Nous deux ferons ceci.

although for some speakers (a'') is slightly better than (z') (cf. what was said above about 'lui').

As expected, application of SUBJ - CL - INV to the strong forms is totally impossible: \*\*Quand est lui parti? \*\*Partira lui? (cf. \*\*Ce que dira-t-il, c'est ceci.), and distinctly worse than: \*Ce que dira lui, c'est ceci.

23. For more detailed discussion and additional arguments in favor of the non-NP status of subject clitic pronouns, see Kayne (forthcoming-c), and especially Kayne (forthcoming - d).

24. As a subject pronoun, 'ce' is a clitic and so cannot be modified. In non-verbal environments (where it could not be a clitic), 'ce' has a very limited distribution, but when possible, it can as expected be modified: 'Il a écouté tout ce qu'elle a dit.' (NB 'ce' here is in an NP position: il a écouté l'histoire qu'elle a racontée.)

Possessive pronouns, whether in article position or not, cannot be modified or conjoined:

- (b'') \*Le nôtre autre est meilleur que celui de Jean.  
 \*Leur deux livre est mauvais.  
 \*Mon et ton professeur est très bon.

Significantly, possessive pronouns occupy a position in which NP's are impossible:

- (c'') \*Le cette fille est meilleur que celui de Jean.  
 \*Jean livre est mauvais.  
 \*Mes amis professeur est très bon.

For some additional discussion of possessives, see Kayne (forthcoming - d).

25. We have as yet no explanation for the fact that STYL - INV is dubious if the WH-word is 'pourquoi' (v. (3) and (16)). Rather than codify our inability to find a solution to this problem by imposing an ad-hoc constraint on the rule, we prefer to leave the question open (after mentioning a number of considerations which may be relevant).

First, one must ask why it is STYL - INV, rather than SUBJ - CL - INV, which exhibits this (superficial) anomaly. Second, one must ask why it is 'pourquoi' (rather than 'où', or 'de quoi', or 'depuis quand') which is singled out. A number of grammarians (v. Renchon (1967), Lerch (1934), Koopman (1910) have suggested that one factor may be that 'pourquoi' is not closely linked to the verb. Clédat (1928) states that 'en vue de quoi' acts like 'pourquoi'. Several informants find that inversion of the NP with 'pour quelle raison' is distinctly better than with 'pourquoi'. Compléments of place and time permit inversion. Adnominal complements are rather unclear: \*?La table dont a cassé le pied; le livre dont ont été critiqués les 2 premiers chapitres.

'Pourquoi' differs from other interrogative words with respect to infinitives: Dis-moi où aller, qui voir, avec qui parler, ??pourquoi partir (cf. Pourquoi partir?). Compare the English: tell me where to go, who to see, ?? why to leave; \*Where go? \*Who see? Why leave? and negation: 'Pourquoi pas?' \*Quand pas? Perhaps most pertinently, 'pourquoi' can sometimes be replaced by 'que', unlike other interrogatives: 'Je me demande pourquoi il peut rester et que moi, je dois partir' (cf. fn. 13 - (e')).

26. 'Complex inversion' is not possible with 'que', although SUBJ - CL - INV alone is (so is STYL - INV):

(d'') \*Que cet enfant a-t-il fait?

Qu'a-t-il fait?  
Qu'a fait cet enfant?

We would attribute this fact not to a restriction on the rules producing the complex inversion construction, but to the very special status of 'que', and would relate it to the following:

(e'') \*Que, à votre avis, a-t-il fait?

Où, à votre avis, est-il allé?  
Quand, à votre avis, est-il parti?

Notice that in both cases, addition of 'diable' results in an improvement:

(f'') Que diable cet enfant a-t-il fait?  
Que diable, a votre avis, a-t-il fait?

For more detailed discussion of this question, see Kayne (forthcoming-b), where we, in addition, propose an explanation for the impossibility of 'que' as subject:

(g'') \*Que tombera?  
\*Qu'a été fait par cet enfant?

This explanation is not exactly the same as that for (d''), cf. \*Que diable tombera? but is rather related to the behavior of 'que' in relatives:

(h'') Ce que cet enfant a fait, \*ce que tombera

At present, we have no explanation for the following facts concerning 'quel', which, at least superficially, resemble those of (d''):

(i'') Quel est-il? Quel est cet argument?

\*Quel cet argument est-il?  
\*Quel, a votre avis, est-il?

Compare also:

(j'') Je me demande quelle peut être la raison  
\*Je me demande quelle la raison peut être.

These paradigms may be related to the existence of the alternation 'quel' / 'lequel'.

27. STYL - INV is impossible in this construction:

(k'') \*Reviendrait cette fille que je ne serais toujours pas content.

There is one case in which inversion of the subject pronoun occurs, while 'complex inversion' does not:

(l'') Cela, a-t-il dit, est faux.  
\*Cela, Jean a-t-il dit, est faux.

One possibility would be to claim that 'complex inversion' is impossible in these 'incises' because there is some kind of constraint requiring that the verb not be preceded by a NP:

(m'') Cela, a dit Jean, est faux.  
\*Cela, Jean a dit, est faux.

If (m'') were an instance of STYL - INV, which is doubtful (v. Strommayer 1935)), then it would be one case in which that rule is obligatory. We note that the 'incise' construction has been exceptional in many ways throughout the history of the language (v. Franzen (1939) and Buscher-bruck (1941)). Specifically relevant here is the fact that in Old French, there was a rule postposing object clitics from sentence-initial position. Normally a complement moved to sentence-initial position blocked the postposition of the clitics. Significantly, the rule was not blocked in the 'incise' construction. Thus even if the inversion of footnote 13 were ultimately to be incorporated into the realm of STYL - INV, (m'') might still remain apart. Moreover, while the environments for the inversion of the subject clitic in (44) and (45) may turn out to have something in common with questions (e.g. (45) is paraphrasable with 'meme si', recalling the 'si' of embedded questions), it is much less obvious what common property could be found between questions and (l''). More likely, the inversion in (l'') and (m'') should be accomplished by a single rule specific to the 'incise' construction.

28. These last two cases are even more striking than the previous ones, in that 'tout', 'rien', and 'assistance' cannot be associated with 'le', (''la') either (although 'cela', 'ce que je dis' and 'que S' often can):

(n'') \*Rien n'est tombé parce qu'on l'avait (pas) collé au mur.  
\*Bien que tout soit tombé, je ne compte pas le ramasser.  
\*Assistance a été prêtée à cette personne-ci mats on ne la pretera pas à l'autre.

29. Since in the general case the copying rule would have to be stated with respect to subject NP's, it would not be possible to have the following derivation: il est la --> il est-il la --> est-il la?, since 'il' is not a NP.

30. It would be difficult to claim that (54b) is an instance of detachment, rather than copying, since a 'detached' (v. Gross (1968) ) NP is not readily placeable in between interrogative word and verb: 'Pourquoi est-ce mauvais, l'argent?'; '??Pourquoi, l'argent, est-ce mauvais? In particular, there are speakers who find (54b) perfectly grammatical while rejecting outright all examples with interrogative word followed by detached NP (cf. also the clear difference between (54b) and the starred sentences of (53) ).

31. See Kayne (forthcoming - c).

32. The reflexive clitic likewise 'agrees' with the clitic subject:  
(o'')  
\*Pourquoi Jean et moi ne s'amuserait-on pas à la soirée?  
\*Pourquoi Jean et moi ne nous amuserait-on pas à la soirée?

Both verb agreement and reflexive clitic 'agreement' are 'internal' to the verb group. Agreement outside the verb group is rather with the NP subject:

(p'')  
\*Pourquoi Jean et moi ne devrait-on pas aller voir notre professeur?  
\*Pourquoi Jean et moi ne devrâit-on pas aller voir son<sub>i</sub> professeur?

For further discussion, see Kayne (forthcoming - c).

33. In addition, we would claim that looking at syntactic processes in the light of transformations formulated in terms of syntactic categories allows one to understand the disappearance, around the fifteenth century, of the construction "Partira ce garçon?" (grammatical in Old French), an historical development which has long puzzled philologists; see Kayne (forthcoming - a).

34. Sentences like "C'est-y faux?" are possible in popular French, which uses an interrogative particle 't'i'. This particle is independent of the subject: 'Marie aime-ti Paul? J'suis-ti comme elle?'

35. 'Ce' is not a clitic in certain other environments (v. fn. 24). See also below.

36. The apparent exception to the word 'exactly' (namely, the 'incise' construction) would disappear if the inversion of the subject pronoun there were not accomplished by SUBJ - CL - INV; see fn. 27.

37. For further discussion of the historical development of the transformations discussed in this paper, see Kayne (forthcoming - a).

38. We argued earlier that subject clitics were not NP's. This does not immediately imply that they are dominated by the node V. An argument that they are so dominated can be constructed on the basis of their similarity to object clitics, which in turn can be shown to be dominated by V (v. Kayne (forthcoming - d) ). A related argument can be based on the contrast:

(q'') \*On boira du bon vin et mangera de la bonne viande.  
On a bu bon vin et mangé de la bonne viande.

Although there is no rule deleting a second 'on' in conjoined structures, the second of two 'on' can be deleted via a rule of auxiliary-deletion; i.e., 'on' can 'fall' with the auxiliary since it is attached to it. For more detailed discussion of the problem of subject clitics in conjoined structures, see Kayne (forthcoming - c).

39. It is unlikely that 'celui-la' in sentences like:

(r'') Celui-la, il est dingue.

is in subject position at all, although it is not clear exactly what structural configuration these 'detached' NP's are in. Note that they also occur sentence-final (though not under the same conditions), and can coexist with actually occurring subjects:

(s'') Il est dingue, celui-la.  
Celui-la, tout le monde l'aime beaucoup.

40. One possible formulation of the copying hypothesis is given in Langacker (1965).

41. We recall that complex inversion must be distinguished from 'detachment'. Thus sentences like 'Cela est-ce vrai?' are instances of the latter. The detachment construction does not in general depend on clitics: it exists, for example, in spoken English:

(t'') That friend of yours we were talking about, is he really all that smart?

and can occur in French with non-clitic pronouns (the same is not true of detachment to the right):

(u'') Celui-la, tout le monde a peur de lui.

42. Since the complex inversion construction only occurs in non-embedded sentences, and in Emonds (1969) framework would thus involve the application of a root transformation, one might ask whether Emonds' characterization of such transformations would not be pertinent to the problem at hand. However, as far as we can see, nothing specific to Emonds' theory would prohibit inserting, in root sentences, a copy of the subject to the right of the subject and then inverting it with the verb. Emonds' theory would not allow placing a copy of the subject to the right of the verb, given the node VP in French, if he were correct in claiming that root transformations only attach material to the node S. This restriction seems to be violated, though, by SUBJ - CL - INV, a root transformation which nonetheless attaches material inside the verb group. Furthermore, it appears that in Swedish, adverbs (of all kinds) can occur in between verb and object only in root sentences (and in between subject and verb only in embedded sentences), suggesting, within Emonds' framework, that



there is a root transformation placing adverbs in between verb and object, i.e., not attached to the node S (assuming the node VP in Swedish).

43. For an argument against a pronominalization transformation in French, see Kayne (1971). For further discussion of the pronominalization controversy, see Kuroda (1971) and the references cited therein, as well as those cited in Kayne (1971).

44. Note that placing a pronominal copy of some constituent somewhere else in the sentence is formally similar to a transformation which would move a constituent, leaving a pronominal copy behind. In the latter case, a constituent would be copied and the original then pronominalized.

For example, the detachment construction might be derived as follows:

'Celui-là est bête' → 'Celui-là est bête, celui-là' → 'Il est bête, celui-là'. If the suggestion in the text is correct, then such an analysis is impossible, and detachment would have to be derived otherwise, perhaps by an extension of the base plus new interpretive mechanisms, perhaps by reduction from conjoined structures.

45. The use of the nodes NP, NP' would not appear ad-hoc in the context of the theory of base rules proposed by Chomsky (1970b); in Chomsky's

notation, one might have, e.g.,  $\bar{N}, \bar{N}'$ .

46. In standard French, sentences such as:

(v'') Celui-là, il est bête.

can only be instances of detachment. NP's which are incompatible with detachment to the left cannot appear as in (v''), even if under other conditions they can be 'coreferential' with 'il':

(w'') Quelqu'un d'autre, m'a dit qu'il était malheureux.

\*Quelqu'un d'autre, il est malheureux.

The contrast between 'celui-là' and 'quelqu'un d'autre' is mirrored, as expected, in 'detached' sentences having nothing to do with subject clitics:

(x'') Celui-là, tout le monde l'aime beaucoup.

\*Quelqu'un d'autre, tout le monde l'aime beaucoup.

In popular French, sentences such as (v'') are not necessarily instances of detachment. The significant relation between the popular construction and the standard French complex, inversion was noticed by Damourrette et Pichon (1934:464).

47. A number of arguments to the effect that 'lui', 'eux' must be postulated as deep structure subject NP's are given in Gross (1968).

48. Some speakers do not accept such sentences. For all speakers, the corresponding sentences with 'moi' and 'toi' are impossible:

\*Moi n'aime pas ça, \*Toi aurais dû le faire. Possible is: 'Toi seul es fou'.

49. If STR - FRM - DEL applies prior to the rule of STYL - INV, the sentences of (w') - fn. 22 will be excluded. One problem with the formulation given in the text is that it does not exclude (a'') (nor, consequently, (z'')) - fn. 22. We would like to be able to say that sentences such as '\*Moi-même partirai' are impossible for the same reason as '\*Moi partirai'. If STR - FRM - DEL were obligatory (with certain exceptions - v. fn. 48) and if its structural description were met by the 'moi' of 'moi-même', then (a'') would simply be a case of having failed to apply an obligatory rule. (Applying the rule would not yield a grammatical sentence either, presumably because its application would violate constraints of the type discussed in Chomsky (1971)). Similar facts can be found with respect to the rule of clitic placement (v. Kayne (forthcoming - d)):

(y'') \*Il connaît moi-même.

\*Elle a vu vous autres hier soir.

\*Il voudrait tuer nous deux.

Another problem common to STR - FRM - DEL and clitic placement (and also, in this case, to the rule placing pronouns in article position in possessives - v. fn. 24) is how to formally characterize the class of elements to which the rule is applicable - the label 'pro' needs close examination.

50. One might explore the possibility of replacing SUBJ - CL - ADJ by a convention on the placement of affixes (v. Emonds (1969)).

SUBJ - CL - ADJ must precede the rule of auxiliary deletion (v. fn. 38).

51. This construction was referred to in fn. 13.

52. We do not have:

(z'') \*Ça m'a tous l'air d'être des salauds.

This would follow if the rule taking 'lui' - 'eux' - 'elle(s)' to 'ça/ce' applied in (z'') before the rule of subject-raising discussed by Ruwet (1970) did, and did not apply to any but a bare pronoun, i.e., 'tous' + 'eux' ≠ '\*\*tous ça'. The 'tous' of (81) would have been moved off the subject prior to the introduction of 'ça' (and therefore prior to subject-raising).

53. CE - CL is optional in certain cases (cf. (76)):

(a'') Ça/ce serait mieux.

Ça/ce sera merveilleux.

Est-ce qu'il faut que ça/ce soit comme ça.

As an auxiliary, 'être' permits 'ce':

(b'') C'est devenu inutile.

C'est resté incompréhensible.

If 'être' is preceded by an auxiliary, 'ce' is questionable:

(c''') ?C'aurait été mieux. cf. Ça aurait été mieux.  
\*?C'a été mal fait.

\*Ce n'aurait pas été bon.  
\*Ce n'a pas été mal fait.

The presence of 'ne' is not usually incompatible with CE - CL:

(d''') Ce ne sera pas merveilleux.  
Ce n'est pas bon.  
Ce n'était pas mauvais.

If 'être' is preceded by a 'subject-raising' verb (v. Ruwet (1970)), 'ce' is generally not possible:

(e''') \*Ce va être bon.  
\*Ce vient d'être approuvé.  
\*Ce commence à m'ennuyer.  
\*?Ce pourrait être Jean qui somme.  
\*Ce paraît être juste.  
\*Ce semble être illégal.  
\*?Ce devrait être plus long.

but: (f''') Ce doit être vrai. cf. \*Ce doit embêter tout le monde.

This suggests that CE - CL be ordered after 'subject raising'. Sentence (f''') could be generated either by allowing for an optional 'devoir' before 'être' in the structural description of CE - CL or by considering (f''') to be a partially frozen expression. In this regard, we note that SUBJ - CL - INV may not apply to 'ce doit': \*Pourquoi doit-ce être vrai? (cf. fn. 54), although 'devrait-ce', 'pourrait-ce' seem possible - cf. (g''').

The sentences of (d''') suggest either that CE - CL be complicated to allow for an intervening 'ne': [C, - [X]] - (ne) - être or that 'ne'

has not yet been placed in pre-verbal position at the point of application of CE - CL. A related fact, valid for at least some speakers, is that CE - CL is obligatory with 'est' and 'était' (v. (76)) even in the presence of 'ne': \*Ca n'est pas vrai' vs. 'Ce n'est pas vrai' (for these speakers).

The non-negative sentences of (c'''), if perfectly grammatical, would require allowing for an intervening 'avoir': [C, - [X]] - (ne) - (avoir) - être thereby making the wrong prediction for the second half of (c'''), and necessitating some kind of filtering device, the need for which might be further indicated by the following paradigm:

(g''') Ca (\*ce) m'est égal. C'est égal.  
Ca (\*ce) m'est resté indifférent.  
Ca (\*ce) lui est inconnu.

(but: C'en est l'auteur. C'en est un.)

Lui est-ce vraiment inconnu?  
T'est-ce vraiment égal?

'Ce' is not possible with dative clitics unless post-verbal. This suggests that CE - CL applies regardless of intervening clitics (necessarily the case, without special statement, if CE - CL precedes clitic placement) and that one filter out, subsequent to SUBJ - CL - INV, sequences of the form 'ce' + ('ne') + dative'. Before the existence of such filtering mechanisms can be countenanced as being the most insightful means of describing the facts under discussion, much more study is required, both of the general form of potential filters and of the syntax of 'ca'/'ce' (e.g., with other clitics: 'Ca y est', 'Ca l'est', etc.).

The paradigm for reflexive clitics with true verbs is slightly different from that of (g'''):

(h''') Ca (\*ce) s'est mal passé.  
\*S'est-ce mal passé?

This would follow if 'être' with reflexives was derived from 'avoir' and if that change took place after CE - CL.

54. The application of SUBJ - CL - INV to the output of CE - CL will yield:

(i''') Est-ce Jean qui pleure?  
N'est-ce pas important?  
Était-ce vraiment comme cela?

In other cases, a somewhat unnatural sentence results:

(j''') ?Sera-ce mieux?

?Sont-ce des garçons intelligents?

55. The fact that there exists a rule of CE - CL (it would be surprising to find a rule inserting 'la liberté' into SCL position) should no doubt be attributed to the relationship between 'ca'/'ce' and the demonstrative article 'ce'/'cette'/'ces'. One might speculate, for example, that [ca] = [ [C, ] - [Ø] ]. 'Cela' and 'ceci' might then be [ [C, ] - [Ø] ] - [ -la ]  
NP<sub>i</sub> [Art N] NP<sub>i</sub> [Art N] NP<sub>i</sub> [Art N]

and therein might lie the incompatibility (due to the absence of a head noun) between 'cela' and 'lui' with respect to coreference (see below and (47)). The underlying article character of 'C, ' would allow its being

substituted, under Emonds' structure preserving hypothesis, for a subject clitic pronoun, if the latter had something in common with articles. For discussion relevant to this footnote, see Gross (forthcoming).

56. There is an important difference between 'ce' and 'ça' that we have not yet mentioned. In the predicate nominal construction discussed in the text (v. (80)-(81)), the verb may agree either with 'ce' or with the plural predicate nominal:

- (k'') C'est tous des salauds.  
Ce sont tous des salauds.

With 'ça', plural agreement is not possible:

- (l'') \*Ça sont des salauds.

These facts may be described by postulating a rule in effect marking the verb (or perhaps 'ce') as plural in the presence of a plural predicate nominal. If this rule follows CE - CL, then (k'') and (l'') can be distinguished; e.g., if the rule applied in the environment: [C.] - être-NP.

57. We have so far been unable to find any clear counterexamples to this claim. See Kayne (forthcoming - c) for further discussion.

58. Although a possible coreferent for generic 'on', 'soi' does not fill the bill; it is not a possible subject of a verb, even in conjoined structures, and is a possible coreferent for NP's (e.g., 'chacun') which are not possible coreferents for 'on' (any coreferent of 'lui', on the other hand, is a possible coreferent of 'il'). In addition, 'soi' may be semantically inappropriate.

59. Rather than 'ø', one might think in terms of a dummy pronoun. We leave this question open.

60. This will exclude the ungrammatical sentence of (64).

61. For a viable analysis of conjoined NP's compatible with the base generation of 'jean et moi', see Dougherty (1970, 1971).

The rule of SUBJ - CL - DEL may not apply to such NP's:

- (m'') \*Jean et moi devrait partir tout de suite.

More precisely, the rule must apply (since it is obligatory), but when it does it violates the principle of recoverability of deletion (v. Chomsky (1965)), thus yielding an ungrammatical result.

The deletion of 'nous' from the structure [nous-on] would probably not violate that condition if the rule deleting it (STR - FRM - DEL) referred to a specified set of elements rather than a syntactic category (cf. fn. 49).

For more detailed discussion of the entire question of 'on', see Kayne (forthcoming - c).

62. This was proposed in Katz and Postal (1964). The feature '+Q' (cf. fn. 15) might be considered to be attached to a node COMP (v. Bresnan (1970)).

On the other hand, whatever feature it is that triggers SUBJ - CL - INV with adverbs like 'à peine' would seem to come to sentence-initial position along with the adverb:

- (n'') Sans doute est-il déjà parti.  
Peut-être cette fille reviendra-t-elle demain.

\*Est-il sans doute déjà parti.

\*Cette fille reviendra-t-elle peut-être demain.

63. The relevance of these facts to our analysis is pointed out by Langacker (this volume).

64. Movement in relatives and exclamations is not always obligatory:  
(o'') La fille qu'il est sorti avec elle est là (popular)  
Vous avez une si belle voiture!

but in such constructions, there is no WH-word, although there is in (87), so the asymmetry would remain.

65. With 'donc', we have:  
(p'') Où donc est-il allé?  
\*Il est allé où donc?

although some may accept, with an intonation break:

- (q'') Il est allé où, donc?

Also:

- (r'') Quand part-il donc?  
\*Il part donc quand?

66. Echo questions must therefore have no such marker in their deep structure. We note that rather than considering sentences like (87) as semantically ambiguous, one might think in terms of a single construction being 'used' in different ways. Unfortunately, we have no clear idea as to the derivation of echo questions. The arguments in the text would be strengthened if an explanation were found, consistent with our hypothesis, for the observed contrasts. For example, 'echoes' seem natural only upon the heels of a specific statement. If someone says 'I ate three apples', one can reply, incredulously, 'You ate how many apples?', but not if he had said 'I ate some apples'. The contrast between (100) and 'Tu l'as fait comment?' might be related to the possibility of 'Je l'ai fait de la façon suivante.' vs. '\*Il est possible de la façon suivante que je parte.' It goes without saying that we have but scratched the surface of this topic.

67. For clarity, we omit the end variables:  $\bar{M} X [Y SCL] V \bar{Z}$

68. In fact, given our claim that subject clitics originate as a kind of NP affix, plus the use of a marker attached to the preposed interrogative element, if any, there is no way to write a single transformation that would move the clitics off the NP's both in (104) and in the general case of complex inversion. One could, however, conceive of a new formalism which would permit this:  $NP \begin{matrix} +0 \\ X \end{matrix} + \begin{matrix} +0 \\ X \end{matrix} [Y] V + SCL$  i.e., if one

allowed a double structural description with the interpretation that the string in question must satisfy both halves separately. The ungrammaticality of (104) could then be taken as an argument in favor of the standard formalism, with a single, linear structural description. Some speakers accept sentences like:

(S'') ?Combien de familles françaises ont-elles plus de deux voitures?

although not those in (104). Such speakers might be analyzing (S'') as: interrogative element = 'combien', NP = 'de familles françaises' rather than the expected: interrogative element = 'combien de familles françaises', NP =  $\bar{X}$ . This in turn might be related to the possibility of having 'combien' separated from an 'associated' complement: 'Combien connaît-il de familles françaises?'

69. In some cases, there may be overlapping with a kind of extra-position. Thus, 'Pourquoi quelque chose d'effroyable est-il arrivé?' is the complex inversion corresponding to 'qch. d'effroyable est arrivé'. The sentence 'Pourquoi est-il arrivé qch. d'effroyable?' is not an instance of STYL - INV, but rather of SUBJ - CL - INV applied to the extraposed form: 'Il est arrivé qch. d'effroyable'.

70. Sentence (113) contrasts with: 'Que voulait lui dire sa petite soeur?'

71. This accounts for the fact that STYL - INV cannot leave a subject clitic behind:

(t'') \*Qu'il veut dire tout cela?  
\*Ce qu'il veut dire tout cela, c'est...  
\*Elle sait très bien à quoi il vous fait penser tout cela.

since the subject clitic will be moved along as part of the subject NP. Notice that this means that the explanation proposed earlier (v. (34)) for the inapplicability of STYL - INV to subject clitics is not quite correct, although it is still true that subject clitics are not NP's. The problem is how to exclude, e.g., '\*Ce que dit-il, c'est ceci' as opposed to 'Ce que dit Jean'. (Actually, the hyphens in (34) are misleading; we would not at all expect STYL - INV to attach the clitic to the verb.) We suggested in fn. 49 that STR - FRM - DEL precede STYL -

INV. If this is correct, then at the point of application of STYL - INV, we will have 'Ce que  $\begin{matrix} NP \\ \bar{X} \end{matrix}$  -il] dit'. Although 'il' is not a NP, it is

contained in a larger NP which should apparently be subject to STYL - INV: 'Ce que dit  $\begin{matrix} NP \\ \bar{X} \end{matrix}$  -il]'. One possibility for excluding such a derivation would be (cf. fn. 77) in terms of a convention filtering out surface structures containing 'affixes' not in clitic position. (Since STYL - INV must itself follow (object) clitic placement (cf. fn. 10 and the ordering of 'tout'-movement after clitic placement given in Kayne (forthcoming-d)), the 'il' could not be attached to any verb form by clitic placement (even assuming the latter to be formulated in such a way as to make the question of ordering meaningful). The alternative of a filtering convention might find support in a study of 'en' and 'y', which lack corresponding string forms. We leave this question open.

72. See fn. 55. We are analyzing 'tout' as  $\begin{matrix} NP \\ \bar{Q} \end{matrix}$  [tout] -  $\bar{Q}$ ], where  $\bar{Q}$  equals whatever node dominates 'tout' in 'tout le gâteau'. The correctness of such an analysis for 'rien' is less obvious. We note, however, that 'rien' is subject to the transformation moving 'tout', 'tous', 'chacun' to the left, all of which are quantifiers (v. Kayne (forthcoming-d)).

73. The 'il' of 'il est arrivé trois enfants', 'Il pleut', 'Il est important qu'elle parte', need not have anything to do with 'lui'. If such 'il' are inserted transformationally into a vacant subject position, the rule could be stated so as to insert 'il' directly into subject clitic position, leaving the NP position empty. The absence of 'lui' might then play a role in an explanation for the failure of this 'il' to show up as an accusative:

(u'') \*Je l'entends pleuvoir.  
\*On l'a vu arriver trois enfants.  
\*Tout le monde le croit important qu'elle parte.

An adequately detailed study of the interaction of (object) clitic placement and subject clitics is beyond the scope of this article.

74. Generic 'on' can be coreferential with 'soi' and with a possessive pronoun derived from 'soi': 'Quand on aime son travail, ...', 'celui', 'que S', etc. The notion 'head noun' used here is in need of further study. The following can be coreferential with 'il(s)': 'quelqu'un', 'chacun', 'ces deux-là', and 'lui' itself. Thus 'lui' might be considered a pro-noun (v. Gross (forthcoming)), 'ce deux-là' an instance of a deleted 'eux', and 'un' a (pro-) noun (cf. 'les uns'). Forms such as 'celui-là' provide further support for the fundamental distinction claimed earlier between 'ce' and the personal pronouns.

75. See fn. 49. The symbol ' $\bar{Q}$ ', the null element, indicates deletion. The verb probably does not have to be specified as finite since there may not be any cases of strong form pronoun before non-finite verb at the point of application of the rule.

Alternatively, we could use the more usual number notation:  
[Pro - SCL] - V +  $\beta$ 2 3  
1 2 3

76. As mentioned earlier, the clitic will be attached to the finite verb, rather than the past participle, by virtue of the former's adjacency to the NP. There is no question in French of 'auxiliary + past participle' being dominated by the node V: 'Ils ont sans doute presque tous presque tout très bien compris'.

As stated, SUBJ - CL - INV does not allow for material intervening between the subject NP and the verb. The derivation of sentences like: 'Le comais-tu?', 'Pourquoi Jean t'en voulaît-il?', with intervening object clitics, will in fact proceed correctly if the sequence 'object clitic(s) + verb' is itself dominated by the node V (as argued in Kayne (forthcoming - d)). The same will be true of 'ne': 'Ne le fera-t-il pas?' if 'ne' is dominated by the node V with finite verbs. Adverbial elements can intervene between subject NP and verb in French only if flanked by pauses; in the absence of a theory of syntactic pauses, it is difficult to say whether sentences like: 'Pourquoi tout cela, à votre avis, est-il important?' bear on the formulation of SUBJ - CL - INV. Of course, if elements like 'à votre avis' are placed between subject NP and verb after SUBJ - CL - INV, the answer is necessarily negative.

77. Given context-free base rules, subject clitics will be generated as part of NP's occupying deep structure positions other than that of subject. This is moreover a necessary fact, insofar as subject clitics may occur overtly corresponding to deep structure objects: 'Pourquoi ce garçon sera-t-il fusillé?', 'As-tu été mis à la porte?', SUBJ - CL - DEL will consequently apply in surface object NP's: 'Elle aime bien [ce garçon - il] + SUBJ - CL - DEL + 'Elle aime bien [ce garçon -  $\beta$ ]', as well as in deep structure subjects moved out of subject position by transformation: 'La police - elle fusillera ce garçon - il' + Passive + 'Ce garçon - il sera fusillé par la police - elle + SUBJ - CL - DEL + 'Ce garçon -  $\beta$  sera fusillé par la police -  $\beta$ '. If a NP of the form [ $\beta$  - on] (see text) is in an object position in surface structure, the derivation will block (SUBJ - CL - DEL will be inapplicable), perhaps by virtue of the filtering mechanism suggested in footnote 71.

The decision to generate NP's of the form [cette fille-elle] in the base is independent of the set of transformations given in the text. An alternative analysis compatible with all the transformations proposed would retain the PS-rules as in the text but would have the node SCL unfilled in the base except in the case of 'on' ('ce' would continue to be introduced via CE - CL). There would then be a kind of agreement transformation introducing the grammatical features of NP' under the empty SCL node: such a transformation could be ordered after rules such as Passive and subject-raising and stated so as to apply only in (derived) subject NP's. This proposal might be empirically distinguishable from the text proposal with respect to the interaction of subject clitics and object clitics; we leave this question open.

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SENTENCE COMPLEMENTS ON NOUNS

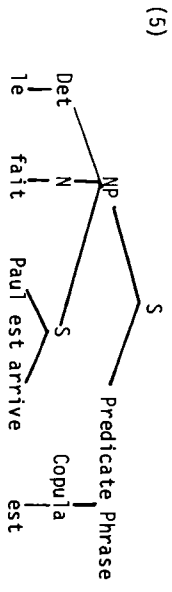
This paper concerns noun phrases of the following sort, which I will call the "noun-complement" construction.

- (1) Marie accepte le fait que Paul est arrivé.
- (2) La suggestion que nous faisons cela a été rejetée par tout le monde.

For convenience, let us call the noun on which the complement depends, the "head noun", for example, *le fait*. Let us call the phrase introduced by *que*, for example, *que Paul est arrivé*, the complement. The contention of this paper is that the complement is an "appositive" on the "head noun", that is, the complement comes from an underlying non-restrictive relative clause of the form, *qui est que S*, which modifies the head noun. Let us first consider some of the restrictions on the noun complement construction. In his "Remarks on Nominalization", Chomsky (1970:197) notes that while there are sentences like (3a), there are none like (3b).

- (3) a. Le fait (que Marie accepte) est que Paul est arrivé.
- b. \*Le fait que Paul est arrivé est que Marie est riche

Chomsky suggests that deriving (3a) from (5) would account for the non-occurrence of (3b).



A transformation would move the complement, *Paul est arrivé*, after the copula, yielding (3a).