

Stylistic Inversion, Symmetry, and In situ Subjects*

Clemens Mayr
Harvard University

1 Introduction

The present article is a short version of (Mayr 2007) and proposes a theory for restrictions on the number of direct arguments inside the verbal domain. The empirical basis is formed by the phenomenon referred to as *Stylistic Inversion* (SI) (Déprez 1988; Déprez 1990; Kayne & Pollock 1978; Kayne & Pollock 2005) and others. In particular it is argued that subjects (S) are merged as specifiers of V. Novel data show that Ss stay in situ in SI. The reason for them surfacing to the right of the verb is due to V-v movement, i.e. affix hopping in the sense of (Chomsky 1975). We further show that only one direct argument can remain in situ. The proposed *phrase structure compatibility* (PSC) algorithm computing the probeability of nodes forces one of the direct arguments of the verb to remerge (see Alexiadou & Anagnostopoulou (2001)), if the verb moves. This is so because, the DPs left behind stand in a symmetric relation to each other wrt. probing. The proposed theory owes many insights to (Moro 2000; Moro 2007), where symmetry is first used to account for certain movement phenomena. It is shown that in SI it is the *wh*-direct object (DO), which moves in order to resolve the symmetry and this movement makes it unnecessary for S to externalize too.

Section 2 introduces the basic data and the crucial evidence for the assumption that post-verbal Ss do not undergo movement in French SI. In the following two sections the mechanisms of PSC and probing are discussed and applied to SI. Section 5 concludes the paper.

2 The structure of Stylistic Inversion

2.1 The basic paradigm

In SI S is in a post-verbal position, which is peculiar for French. As noted by Kayne & Pollock (1978) there are in essence two possible structural configurations that allow for SI. One is instances of *wh*-movement (1), the other subjunctive clauses (2). As can be seen *wh*-movement of, for instance, adverbials (1-a) and indirect objects (IO) (1-b) allows post-verbal Ss. This further holds for embedded *wh*-questions (1-c) and relative clauses (1-d). Subjunctive environments are introduced by verbs like *wish* (2-a) and sentential subjects (2-b) (examples from (Kayne & Pollock 1978; Kayne & Pollock 2005)):

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- (1) a. Quand partira ton ami?
when leave-FUT your friend
'When will your friend leave?'
- b. Avec qui jouaient tes enfants?
with whom were.playing your children
'With who were your children playing?'
- c. Je me demande quand partira ton ami.
I self wonder when leave-FUT your friend
'I wonder, when your friend will leave.'
- d. La maison où habite cet homme est très jolie.
the house where lives this man is very pretty
'The house, where this man lives, is very pretty.'
- (2) a. Je souhaiterais que téléphone ton ami.
I would.wish that telephone-SUBJ your friend
'I wish your friend called.'
- b. Qu'ait téléphoné ton ami me surprend.
that has-SUBJ telephoned your friend surprises me
'That your friend has called, surprises me.'

Post-verbal Ss in non-*wh*-questions (3) and indicative clauses (4) are impossible:

- (3) a. *Partira ton ami?
leave-FUT your friend
- b. *Est sortie Marie?
has left Marie
- c. *Je me demande si partira ton ami.
I self wonder if leave-FUT your friend
- (4) a. *A téléphoné ton ami.
has telephoned your friend
- b. *J'ignore si a téléphoné ton ami.
I NEG.know if has telephoned your friend

We will focus on SI in *wh*-questions.^{1,2} The following section introduces novel data from coordination showing that post-verbal Ss stay in situ.

¹Subjunctives are put aside as in most studies of SI. We leave the implementation of the proposed mechanism for (2-a)-(2-b) for future research, as it is not clear how to do so at this moment.

²SI varies with *Complex Inversion* (CI) (Rizzi & Roberts 1996), (Sportiche 1993). (i-a) shows the SI and (i-b) the corresponding CI construction. In CI S is pre-verbal and a subject-clitic is attached to the verb. Mayr (2007) argues that CI differs from SI in externalization of S rather than of *wh*-DO:

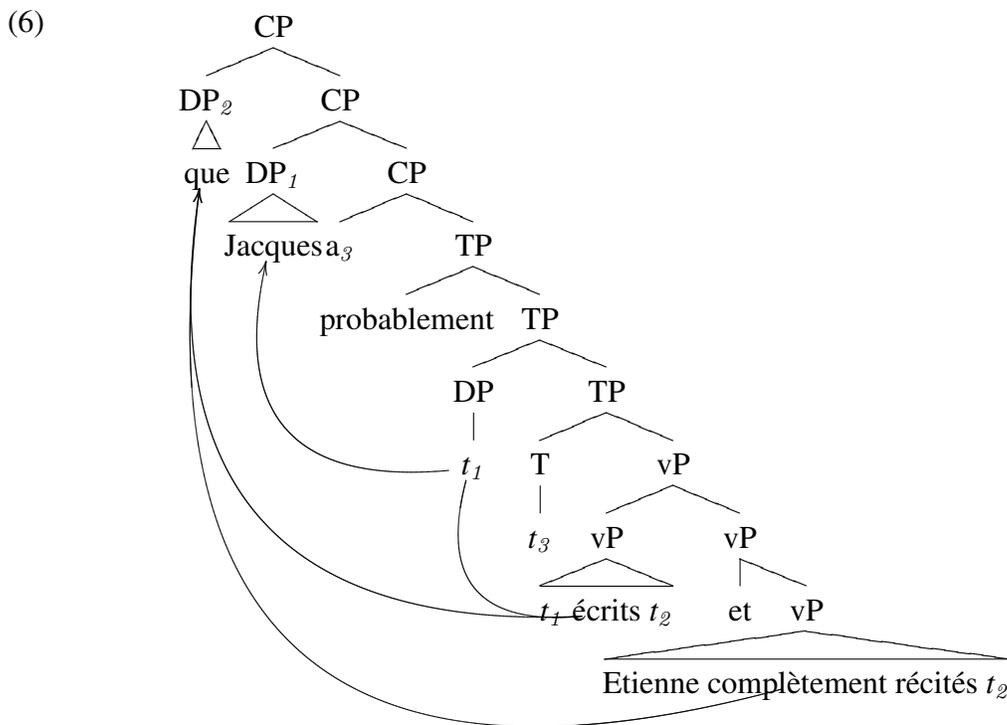
- (i) a. Quand partira ton ami?
when leave-FUT your friend
- b. Quand ton ami partira-il?
when your friend leave-FUT-CL
'When will your friend leave?'

2.2 In situ post-verbal subjects

2.2.1 Post-verbal subjects remain in vP/ VP

Consider coordination in relative clauses (5). It must be assumed that the relative pronoun undergoes ATB-movement (e.g. Williams (1977) and many others) thereby triggering participle agreement as shown in (6):³

- (5) Les livres, que Jacques a probablement écrits et Etienne complètement récités, sont sur la table.
 the books which Jacques has probably written and Etienne complètement récités, sont sur la table.
 fully recited are on the table
 'The books which Jacques probably has written and which Etienne has completely recited, are on the table.'

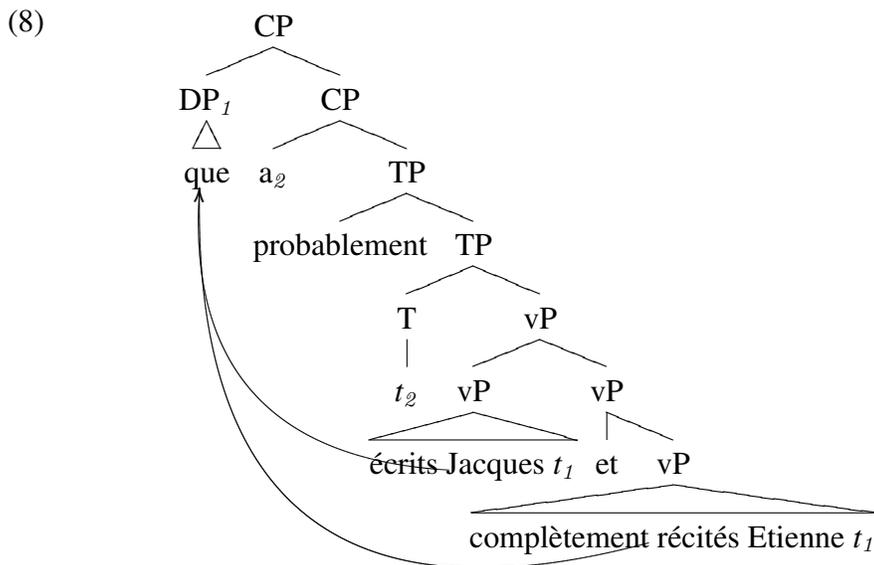


SI in relative clauses is also possible. In the case at hand SI is possible in both conjuncts (7):

³The theory of obligatory reconstruction for Ss undergoing A-movement out of coordinated structures is assumed. See (Lin 2001) and (Johnson 2003). In the case of (6) it is the S *Jacques* of the first conjunct which moves to satisfy the EPP of T. The first S moves, because economy reasons prevent the second S from moving, which is more distant from T under an asymmetric analysis of coordination (Munn 1993). No CSC-violation arises because of obligatory reconstruction of the moved S at LF. See the works cited above for detailed discussion.

- (7) ?Les livres, qu'a probablement écrits Jacques et complètement
 the books which has probably written Jacques and fully
 récités Etienne, sont sur la table.
 recited Etienne are on the table
 'The books which Jacques probably has written and which Etienne has completely recited, are on the table.'

The structure for (7) must be as in (8), provided that this is a case of low coordination. On the latter assumption see below. SI is observed in both conjuncts in (8). If the first S moved to [Spec,TP], the linear order in (7) could not be obtained. First, if [Spec,TP] were linearized before T', S would precede its verb. Second, if it were linearized after T', it would linearly follow the second S, which must remain in situ. As mentioned in fn. 3 the asymmetric nature of coordination (Munn 1993) will prevent the second S from movement anyway. The second conjunct shows that no [Spec,TP] position need to be present for SI:



vP-coordination must be assumed for (8), because the high adverb *probablement* cannot be used in the second conjunct (9), whereas the low adverb *complètement* occurs without any restriction (7). No TP must be present in the second conjunct:

- (9) *Les livres, qu'a complètement écrits Jacques et probablement
 the books which has completely written Jacques and probably
 récités Etienne, sont sur la table.
 recited Etienne are on the table

Further repeating the auxiliary in the second conjunct makes (7) ungrammatical as in (10). This again suggests that we are not dealing with TP-coordination:⁴

⁴In (Kayne 2000) it is argued that structurally case-marked pronouns must be doubled by a clitic in certain constructions. However, this is impossible in cases of gapping. Compare (i-a) with (i-b):

- (10) *Les livres, qu'a probablement écrits Jacques et a récités
 the books which has probably written Jacques and has recited
 Etienne, sont sur la table.
 Etienne are on the table

We have shown that post-verbal Ss do not leave the verbal domain. In the following section it is further suggested that no movement at all takes place.

2.2.2 Post-verbal subjects do not move to the right

Sportiche (1988) argues that quantifier float in French consists in stranding of the quantifier by its DP undergoing movement. In this sense the quantifier marks the pre-movement position of the DP in cases such as the following:⁵

- (11) a. Tous les enfants ont vu ce film.
 all the children have seen this movie
 'All the children have seen this movie.'
 b. Les enfants ont tous vu ce film.
 the children have all seen this movie
 'All the children have seen this movie.'
 (Sportiche 1988:426)

Déprez (1990) shows that contrary to (11) quantifier float under SI is impossible (see also (Drijkoningen 1997)):

- (12) a. *Qu'ont tous fait les enfants?
 What have all done the children
 b. *Quand ont tous fini les enfants?
 When have all finished (their work) the children

- (i) a. Jean aime la physique et moi la chimie.
 Jean likes the physics and me the chemistry
 b. *Jean aime la physique et (moi) je la chimie.
 Jean likes the physics and (me) I the chemistry

This leads Kayne to conclude that no T-level is present in the second conjunct that could assign nominative case to a pronoun. If gapping is to be analyzed as a case of vP-coordination as argued for by (Johnson 2003) (and as assumed by Kayne (2000) too), then the data in (i-a)-(i-b) favor the assumptions in the text too. However, Benjamin Spector (pc.) suggests that the ungrammaticality of (i-b) could be due to the impossibility of putting focus on clitics, though.

⁵We remain silent on the issue of whether the quantifier is of adnominal or adverbial nature (e.g. (Bobaljik 2003), (Fitzpatrick 2006)). In either case movement of S to the right (i) should make it possible for the post-verbal S to linearly follow the quantifier, contrary to fact. In a theory favoring the adverbial analysis (i) would still argue against movement of S as *tous* would be adjoined to vP and the post-verbal S were moved to the right, possibly adjoining to vP too:

- (i) [CP quand ont ... [vP [vP tous dormi₁ t₂ t₁] les enfants₂]

- c. *les lettres qu'ont tous écrites les enfants.
 the letters that have all written the children
 (Déprez 1990:56)

As (12) shows *les enfants* does not move to the right adjoining to vP and strand *tous* in its pre-movement position. This fact taken together with the facts from the preceding section suggest that post-verbal Ss are not dislocated at all.

2.2.3 The verb does not move high enough

V could move beyond S, thereby making S appear post-verbal in SI. For infinitives it is argued by (Pollock 1989) that in French they undergo short movement. This can be assumed for cases of analytic verbal morphology and maybe also for infinitives under modals, too. In all of these cases V-raising would not be high enough for S to become post-verbal, as it is located in [Spec,vP] under current theoretical assumptions (Chomsky 1995; Kratzer 1996). As (13) shows post-verbal Ss do occur under modals:

- (13) Quand peut partir ton ami?
 when can leave your friend
 'When can your friend leave?'

This suggests that theories relying on verb movement alone to account for SI (Déprez 1988; Déprez 1990)⁶ and others cannot be correct. V does not raise high enough in contexts such as (13). I.e. only cases where the lexical verb is finite could be accounted for. Since we showed that in addition S-movement cannot be assumed either contra (Kayne & Pollock 1978; Kayne & Pollock 2005) among others, we are left with a conundrum.

2.3 vP/ VP-Externalisation

As already shown in (Kayne & Pollock 1978) DO cannot linearly precede (14-a) or follow (14-b) the post-verbal S. However, if DO is cliticised (14-c) or undergoes *wh*-movement itself (14-d), the resulting structure is grammatical:

- (14) a. *A qui a donné ce livre Jean?
 to whom has given that book Jean
 b. *Ou enverra votre frère le paquet?
 where will send your brother the package
 (Déprez 1988)
 c. A qui l'a montré Jean-Jacques?
 to whom it has shown Jean-Jacques
 (Kayne & Pollock 2005)
 d. Qu'a montré Jean-Jacques?
 what has shown Jean-Jacques

⁶In fact (13) immediately rules out accounts such as (Déprez 1990), where it is assumed that verbs raise to C in SI. This is independently doubtful given the fact that the verb is not in complementary distribution with complementizers as in CI and occurs in root contexts. See (Mayr 2007).

The ungrammatical (14-a)-(14-b) contrast with (15), which shows that IOs, PPs, can follow the post-verbal S (15-a). In fact this order is highly preferred over (15-b):

- (15) a. Que dira ton frère a Jean?
 what tell-FUT your brother to John
 'What will your brother tell John?'
 b. ??Que dira a Jean ton frère?
 what tell-FUT to John your friend
 (Déprez 1988)

Descriptively, (14)-(15) suggest that there is only room for one direct argument within vP/ VP. To account for this Alexiadou & Anagnostopoulou (2001) argue that only one structurally case-marked element can occur within vP. Richards (2006) on the other hand appeals to a linearisation principle which does not allow more than one syntactic object (SO) of a particular category within a given Spell-Out (S-O) domain.⁷ Indeed, an account making overt movement crucial is likely to be correct, since covert movement of a scope-bearing DO is ungrammatical. I.e. covert movement does not save the structure as overt *wh*-movement does:

- (16) a. *A donné un homme chaque cadeau a Sophie.
 has given one man each present to Sophie
 b. *Admira chaque homme une chanteuse.
 admired each man one singer-FEM

In the following section we will try to account for the data discussed.

3 Merge, phrase structure compatibility, and dependencies

3.1 Location of the subject

In the preceding section we established the following facts:

- (17) a. Post-verbal Ss remain in situ.
 b. Only one direct argument can remain in situ.
 c. Externalization of one of the direct arguments must be overt.
 d. Verb movement alone cannot account for SI.

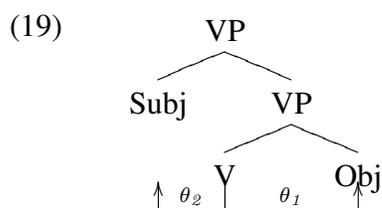
The restriction in (17-b) pertains to the reported fact that the VP and the external argument often do not act as a unit. It is therefore that post-verbal Ss in SI can provide insight into this phenomenon. (17-c) suggests two possible theoretical consequences. First there is the stronger possibility that the restriction that the grammar imposes on the realisation of two direct arguments within the verbal domain is essentially PF-driven. The second weaker generalisation would hold that movement must be overt, because only this type of movement results in a representation that syntax imposes. In the latter case one cannot claim that it is PF which directly influences the computation, but rather the relation is an indirect one. In what follows the

⁷Due to space reasons we cannot address these accounts in any more detail. But see (Mayr 2007).

second line of inquiry is pursued.⁸ But for both possible theories the restriction on argument realisation in the verbal domain can be described as follows, rephrasing Alexiadou & Anagnostopoulou (2001); Alexiadou & Anagnostopoulou (2007)'s generalization:⁹

(18) Only one direct argument can be in vP/ VP at S-O.

The investigation of the descriptive statement in (18) forms the core of the present work. We assume that the direct arguments are base generated as in (19), where the external argument does not receive its θ -role from v, but rather from V. This way the issue of the infinitive not moving high enough in SI in order to make S post-verbal is solved. In fact, given the data from section 2, this move is mandatory.¹⁰



It is assumed that v is merged above VP as usual. As can be seen from (19), though, its role is different from other theories. In particular, as soon as both the external and internal θ -roles are assigned by V, the question arises, how accusative case is assigned. In most current theories it is assumed that v both assigns accusative case and the external θ -role, so that Burzio's generalization (Burzio 1986) can be captured by one functional head. If Haider (1985) and Marantz (1991) are correct in their argument that case is assigned following a case realization hierarchy, then Burzio's generalization becomes a non-issue for the present proposal.¹¹

⁸It must be noted that these two competing theories are not the only logically possible ones. However, they are two theories that have the restriction of overt movement at the very heart of their proposal. For difficulties for an account relying on linearisation, namely (Richards 2006), see (Mayr 2007). The present account follows (Moro 2000)'s in making it a problem of syntax proper, which influences PF.

⁹For discussion of this generalization in a much broader setting see the works cited.

¹⁰Another option would be that both the external and internal θ -roles are assigned in an ECM-fashion, i.e. from "left to right." This interesting possibility was suggested by David Pesetsky (pc.). For more discussion on this see (Mayr 2007). A third possibility is an approach along the lines of Hale & Keyser (2002), where θ -relations are established structurally. The present theory seems to be compatible with such a view.

¹¹Note also that the facts established so far reject a too simple theory in terms of case, i.e. where externalisation is driven by the need to assign case. As pointed out by Luigi Rizzi (pc.), the need to unambiguously assign the two structural cases could be modeled as a requirement such that the two direct arguments must not be in the same locality domain. I.e. the need to have case assigned to all the direct arguments would drive the externalisation of one of the two. Such an approach, however, runs afoul of the fact that QR does not seem to remedy the ambiguous structural configuration. In particular, what would be needed is a situation where *wh*-movement applies before case assignment and QR after case assignment. This type of rule ordering seems to be unlikely under current theoretical assumptions. Further, the problem arises, why nominative case is not assigned to the *wh*-DO, if it moves to save the structure. Case assignment acts as known from non-SI contexts. Andrea Moro (pc.) reminds me of copular constructions in this respect. There two DPs show the same structural case, but nevertheless one must externalize.

3.2 Merge and probing

Chomsky (1995:243ff.) defines an SO K as in (20):

$$(20) \quad K = \{\gamma, \{\alpha, \beta\}\}, \text{ where } \alpha, \beta \text{ are SOs and } \gamma \text{ is the label of } K.$$

In particular it is assumed that γ equals one of the SOs α or β , which yields the notion of projection. By convention this is assumed to be the head of $\{\alpha, \beta\}$.

On the other hand, in what follows it is assumed that K is made up of the structure in (21), which yields structures of the form in (22):

$$(21) \quad K = \{\alpha_H, \beta\}, \text{ where } \alpha_H, \beta \text{ are SOs, } \alpha_H \text{ the head,}^{12} \text{ and the head is the label.}$$

(21) stipulates that the head acts as the label for further computation, but it is not projected. The structure that follows for transitive VPs under the present assumptions is as in (22), where again the label of the whole structure is the head:

$$(22) \quad \{\gamma, \{\alpha_H, \beta\}\}, \text{ where e.g. } \gamma = S, \alpha_H = V, \beta = DO, \text{ and } \alpha_H = \text{label}$$

We make the assumption that all probe-goal relations are driven by heads (Chomsky 2005). I.e. heads act as probes and the goals of heads are again heads. In that sense, informally, new phrases come about with the introduction of new heads and thereby change with labels. Consider the following:

$$(23) \quad \{\epsilon, \{\delta_H, \{\gamma, \{\alpha_H, \beta\}\}\}\}, \text{ where } \delta \text{ is the label of } \{\epsilon, \{\delta_H, \{\gamma, \{\alpha_H, \beta\}\}\}\} \text{ and } \alpha \text{ is the label of } \{\gamma, \{\alpha_H, \beta\}\}.$$

Assume that upon probing it becomes necessary to distinguish between complex and simple SOs. There are two types of SOs, namely such of type p as type for full phrases and such of type $\langle \tau \langle p, p \rangle \rangle$ for heads. τ stands for p , $\langle p, p \rangle$. Elements can be probed if Merge has produced compatible phrase types (for instance, if a node p is made up of a head $\langle \tau \langle p, p \rangle \rangle$ and an element of type p). What is important, is to understand the consequences of these assumptions, which are as follows: a head combining with a complex SO will give another complex SO. A complex SO combining with another complex SO, although syntactically well-formed since Merge does not care about the results, will be illegible upon probing. See the discussion immediately below:¹³

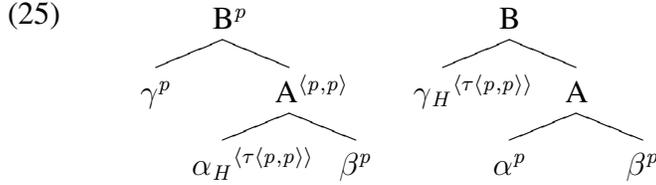
- (24) *Probeable nodes:*
- a. non-heads of type p or $\langle p, p \rangle$
 - b. heads of type $\langle \tau \langle p, p \rangle \rangle$

¹²A head is trivially defined as SO that does not dominate any other SO.

¹³Symmetry arises also if two heads are merged (Moro 2000; Moro 2007). This is circumvented by head adjunction producing another head. See (Mayr 2007) for further discussion. The concept of labels is not central in the present theory, in contrast to (Moro 2007).

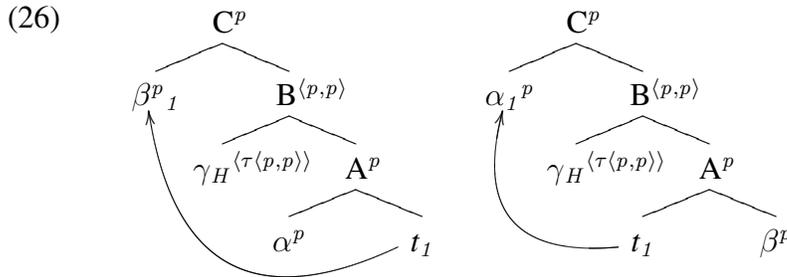
The notation used is a version of bare phrase structure. However, features of X'-theory come in when probe-goal relations are established. I.e. heads must be combined with phrases, but this requirement is only checked upon probing. As will become clear below the phrase types created by Merge can easily become changed by IM. This is in fact why it was chosen to use a new notation.

Two merged non-heads cannot be probed, because they do not qualify for the type p , i.e. they are in a symmetrical relationship. The consequence is that one of the symmetrical elements is forced to move. Consider two simple examples:



In the first tree in (25) every node created by Merge is probeable. From B^p it is possible to infer that the elements dominated can be of types p and $\langle p, p \rangle$, i.e. one is a full phrase and the other a bar-level constituent in more classical terminology. For the node γ^p the same holds. From $A^{\langle p, p \rangle}$ the probing algorithm can infer that the dominated nodes are of types $\langle \tau \langle p, p \rangle \rangle$ and p .

In the case of the second tree in (25) no such inferences can be drawn. Two elements of type p do not give a permissible node for probing. The result is that the structure has to be changed by movement, so that correct compatibility relations are established. The assumption is that a trace does not count for probing and therefore it is not possible to compute compatibility relations over it as in (26). After movement nodes A and α or β are both of type p . I.e. if some node has type p it is inferred that one and only one of the immediately dominated nodes is of type p . Nothing is inferred about the second element. In principle there should be optionality wrt. which of the symmetrical SOs moves:



Something must be said about probe-goal relations. Probing proceeds through c-command. I.e. a head H can probe every node that it has undergone Merge with:

- (27) *Possible probe-goal relations:*
 For all nodes n , where n is either p , $\langle p, p \rangle$, or $\langle \tau \langle p, p \rangle \rangle$, in the probe-domain of H , H a head, H probes n .

The probe-domain (PD) of H is defined as follows:

- (28) *Probe-domain:*
 Node n , where n is either p , $\langle p, p \rangle$, or $\langle \tau \langle p, p \rangle \rangle$, is in $PD(H)$, H a head, if H either merged with n itself, or if H merged with n_2 , where n_2 dominates n , and no node n_1 dominating n and dominated by n_2 has induced S-O.

PD(H) is the c-command domain of H minus material that has already undergone S-O. All nodes conforming to the requirement in (24) are probed. This excludes nodes that are the result of merging two *p* elements. By extension any node dominated by such a symmetrical node cannot be probed either. Movement of one of the two non-heads will remedy the structure, so that probe-goal relations are again possible. In the next section French SI is related to this theory.

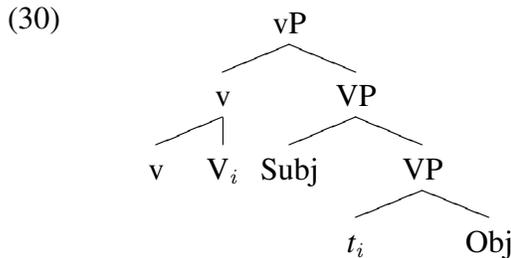
4 The derivation of Stylistic Inversion

4.1 Deriving externalization

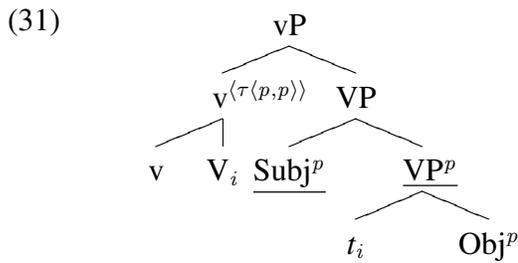
Following Moro (2007) α in (29) does not allow probing of any SO contained in it:

(29) [... [α [XP ...X...] [YP ...Y...]] ...]

This can be used to account for externalization of arguments from VP. Recall further the assumption that both direct arguments are generated inside VP. The present paper follows the argument that V enters into a dependency with a higher head. This goes back to (Chomsky 1975)'s analysis of affix hopping. Consider the following structure, where V stands in a discontinuous dependency with the head *v*. At this stage V is not solely dominated by VP anymore, but also by vP:

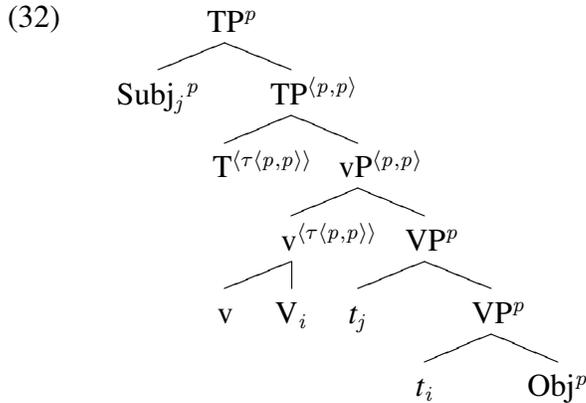


Since it is the last instance of Merge of an SO that is the one relevant upon probing from a higher head, V can only be probed at the position, where it is contained in one of the segments of *v*. In fact it must be indistinguishable from *v* at this point of the derivation and must not be probed alone, because we assume, following standard practice that head-movement proceeds via adjunction. But this verb-movement results in a node which has two *p*-nodes as daughters, as the trace left by movement of V does not count for probing (underline indicates non-probeable nodes):¹⁴



¹⁴In (Mayr 2007) we differentiate between head movement adding morphological information and such without. Only the former alter PSC relations. Thanks to Gennaro Chierchia (pc.).

One of the arguments must move. Let us, for expository convenience, assume that T is introduced and Subj moves to [Spec,TP].¹⁵



The crucial point in the derivation is, where V and v enter a relation and V becomes invisible for probing purposes in its External Merge (EM) position in (31). This has the result that both S and DO cannot be found by T due to a violation of (24). I.e. Subj and VP are in a symmetrical relation. This in turn triggers externalization of one of the two direct arguments, which makes both S and DO visible for probing (32). S is visible, because only the last instance of Merge counts for probing and DO is, because the immediately dominating VP is now disambiguated for probing. The phrase type of the DO is therefore passed up to the sister-node of v. As can be seen, verb-movement has consequences for the rest of the structure left behind. In particular, the nodes created upon EM can be altered, in fact must be altered, once the head moves. Nodes thereby become entities that can change over the course of the derivation. This is also the reason, why the new notation is introduced. Classic phrase structure notation cannot yield the shifting nature of PSC relations. Note, however, that phrasal movement will never have this effect, because if an XP with type p is moved, any head with $\langle \tau(p, p) \rangle$ will yield a probeable dominating node.

At this moment the question of QR posed by the ungrammatical constructions in (16) can be answered. Given the present rationale QR must apply at a point in the derivation, where phrase structure compatibility does not play a role anymore, i.e. after probing. Next, we will consider some applications of the proposed algorithm.

4.2 Externalization in French SI

Consider the sentence in (33) and its derivation in (34):

- (33) Que fait Etienne?
 what does Etienne
 'What is Etienne doing?'

¹⁵The traditional category labels are kept for expository convenience. Note that they do not change with the phrase types, of course.

Further it should be noted that v-T movement would have no effect in the present case, because then vP would be p and T of type $\langle \tau(p, p) \rangle$ would again combine without problems.

- (34) a. [_{VP^p} Etienne^p [_{VP<p,p>} fait^{<τ<p,p>p}]]
 b. [_{VP<p,p>} v<sup><τ<p,p>VP^p Etienne^p [_{VP<p,p>} fait^{<τ<p,p>p}]]]
 c. [_{VP} v-fait_i<sup><τ<p,p>VP Etienne^p [_{VP^p} t_i que^p]]]
 d. [_{VP^p} que^p [_{VP<p,p>} v-fait_i^{<τ<p,p>VP^p Etienne^p [_{VP} t_i t_j]]]]]}</sup></sup>

What we observe in (34) is that in French a *wh*-DO moving to [Spec,vP] will remedy a symmetrical structure, so that probe-goal relations can be established again.¹⁶

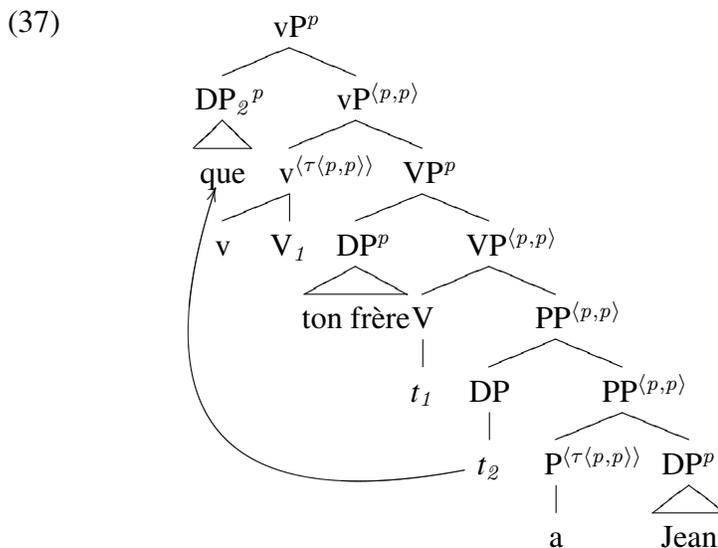
A slightly more complex construction is the following one from above:

- (35) Que dira ton frère a Jean?
 what tell-FUT your brother to John
 'What will your brother tell John?'

What is shown by (35) is that IOs can remain in VP together with the post-verbal S. Assume the following SC (Kayne 1984) structure for DO and IO:

- (36) [_{VP} S [_{VP} V [_{PP} DO [_{PP} P IO]]]]

The structure is licit according to condition (24). When the verb undergoes movement it is again S and the DO that follow each other and create a problem for probing and one must externalize as a result. Consider the point of the derivation, where the problem in the vP is resolved. If DO did not move *ton frère* and its sister VP would both be of type *p*:



¹⁶This way S can remain in situ. A question arises, why this is impossible for English for instance, where it is always S that moves and why this is further impossible for non-*wh*-DOs in French. See (Mayr 2007) for discussion of cases, where S externalizes.. For the moment suffice it to say that it is a non-trivial interaction between A- and A'-movement that is observed in SI. The intuition that is pursued is that it is only SOs that must undergo a relation with a higher position anyway, which allows them undergo externalization.

The present mechanism can account for the fact that IOs do not interact in externalization with S and DO. In (37) a derivation of SI is shown, where DO moves successive-cyclically to [Spec,vP]. This has the effect that wrt. probing S behaves as if it were the specifier of P. Further it should be noted that, once the complex v-V is in a dependency with T, further movement of an XP will have to take place. Again, successive-cyclic movement of DO to [Spec,CP] will repair the structure. This applies to (34) as well.

Thereby the argument restrictions of SI are explained. To summarize: post-verbal Ss in French stay in situ. Obligatory VP-externalization is the result of the verb entering a discontinuous dependency with v, which creates a phrasal mismatch in the VP. In particular S and DO are in a symmetrical relation wrt. each other in the sense of (Moro 2000; Moro 2007). In SI successive-cyclic movement of *wh*-DO can repair the structure. IOs never interact with post-verbal Ss or DOs, which means that the former can remain in situ, when either one of the latter does. Note that it is crucial that the DO is merged as specifier to PP. Only by virtue of this is it possible for IO to not interact with S. Note that we have adopted the view that SI is triggered by *wh*-movement in the sense of (Kayne & Pollock 1978).

5 Conclusion

The present paper investigated VP-externalization by looking at SI. We showed that S in SI remains in situ and proposed that Ss are base generated in [Spec,VP]. A mechanism was introduced that computes, whether a syntactic node produced by Merge can be probed or not. By virtue of this discontinuous dependencies of verbal heads can be related to facts of subsequent XP-movement, because symmetry holds between S and DO (Mayr 2007). In most cases S externalizes to remedy the symmetry. SI, being one of the cases, where S stays, was used to show that S nevertheless is part of the VP and that A'-movement of DOs supports this view. In addition it was suggested that QR applies after probe-goal relations are established in contrast to *wh*-movement.

References

- Alexiadou, Artemis, & Elena Anagnostopoulou. 2001. The subject-in-situ generalization and the role of case in driving computations. *Linguistic Inquiry* 32.193–231.
- , & ———. 2007. The subject in-situ generalization revisited. In *Interface + Recursion = Language? Chomsky's Minimalism and the View from Syntax-Semantics*, ed. by Hans-Martin Gärtner & Uli Sauerland, 31–60. Walter de Gruyter.
- Bobaljik, Jonathan. 2003. Floating quantifiers: Handle with care. In *The Second Glot International State-of-the-Article Book: The Latest in Linguistics*, ed. by Lisa L.-S. Cheng & Rint Sybesma, 107–148. Mouton de Gruyter.
- Burzio, Luigi. 1986. *Italian Syntax*. Reidel Publishers.
- Chomsky, Noam. 1975. *The Logical Structure of Linguistic Theory*. Chicago: University of Chicago Press.
- . 1995. *The minimalist program*. Cambridge, Massachusetts: MIT Press.

- , 2005. On phases. ms. MIT.
- Déprez, Viviane. 1988. Stylistic Inversion and Verb Movement. In *Proceedings of ESCOL 1988*, 71–82.
- . 1990. Two ways of moving the verb in French. In *Papers on wh-movement*, ed. by Lisa Lai Shen Cheng & Hamida Demirdash, 47–85. MITWPL.
- Drijkoningen, Frank. 1997. Morphological strength: NP positions in French. In *Rightward Movement*, ed. by Dorothee Beerman, David LeBlanc, & Henk van Riemsdijk, 81–114. Amsterdam: John Benjamins Publishing Company.
- Fitzpatrick, Justin M. 2006. Two types of floating quantifiers and their A/A-bar properties. In *Proceedings of NELS 36*.
- Haider, Hubert. 1985. The case of German. In *Studies in German Grammar*, ed. by Jindrich Toman, 65–102. Dordrecht, The Netherlands: Foris Publications.
- Hale, Ken, & Samuel Jay Keyser. 2002. *Prolegomenon to a theory of argument structure*. Cambridge, Massachusetts: MIT Press.
- Johnson, Kyle, 2003. In search of the English middle field. ms. University of Massachusetts at Amherst.
- Kayne, Richard. 1984. *Connectedness and binary branching*. Dordrecht, Holland: Foris Publications.
- . 2000. *Parameters and Universals*. Oxford University Press.
- , & Jean-Yves Pollock. 1978. Stylistic inversion, successive cyclicity, and Move NP in French. *Linguistic Inquiry* 9.595–621.
- , & Jean-Yves Pollock. 2005. New thoughts on Stylistic Inversion. In *Movement and Silence*, 3–49. Oxford: Oxford University Press.
- Kratzer, Angelika. 1996. Severing the external argument from its verb. In *Phrase Structure and the Lexicon*, ed. by Johan Rooryck & Laurie Zaring, 109–137. Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Lin, Vivian. 2001. A way to undo A movement. In *West Coast Conference in Formal Linguistics*, ed. by Karine Megerdooimian & Leora Anne Bar-el, volume Proceedings of the 20th West Coast Conference in Formal Linguistics, 358–371.
- Marantz, Alec. 1991. Case and licensing. In *Eastern States Conference on Linguistics*, ed. by Germán Westphal, Benjamin Ao, & Hee-Rahk Chae, 234–253, Cornell University, Ithaca, NY. Cornell Linguistics Club.
- Mayr, Clemens, 2007. Stylistic Inversion and VP-externalization. ms. Harvard University.
- Moro, Andrea. 2000. *Dynamic Antisymmetry*. Cambridge, Mass.: MIT Press.
- , 2007. Some Notes on Unstable Structures. ms. Università San Raffaele, Milano.
- Munn, Alan Boag, 1993. *Topics in the syntax and semantics of coordinate structures*. The University of Maryland dissertation.
- Pollock, Jean-Yves. 1989. Verb movement, UG and the structure of IP. *Linguistic Inquiry* 20.365–424.
- Richards, Norvin, 2006. A distinctness condition on linearization. ms. MIT.
- Rizzi, Luigi, & Ian Roberts. 1996. Complex inversion in French. In *Parameters and Functional Heads*, ed. by Adriana Belletti & Luigi Rizzi, 91–116. Oxford University Press.
- Sportiche, Dominique. 1988. A theory of floating quantifiers and its corollaries for constituent structure. *Linguistic Inquiry* 19.425–449.
- . 1993. Subject clitics in French and Romance: Complex inversion and clitic doubling. In *Studies in Comparative Romance Syntax*, ed. by Kyle Johnson & Ian Roberts. Kluwer Academic Publishers.
- Williams, Edwin. 1977. Across-the-board application of rules. *Linguistic Inquiry* 8.419–423.