

Adverbs, Negation, and OCP Effects¹

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This paper attempts to provide an account of certain adverbs and negation in English and French. It is suggested that VP-adverbs and negation are Case-bearing elements. In English, they are specified for accusative Case, hence an OCP effect triggers their movement outside the constituent domain they make up with the verb. While adverbs straightforwardly move outside the OCP domain, movement of negation is thwarted by the superiority condition, which forces the insertion of *do* to settle the conflict. In French on the other hand, adverbs and negation are specified for nominative Case, and therefore they move to the right edge of the verb so as to avoid OCP' and/or a crossing-lines effect. In Spanish negation triggers a crossing-lines effect, but this conflict is avoided by dropping the subject. Under this analysis, *do* in English and null-subject in Romance appear to be strategies to avoid problems that arise in negated structures.

Keywords: OCPs, adverbs, negation, do-support, null-subject, superiority condition, Case tiers, optimality.

1. Introduction

In this article I propose an analysis of VP-adverbs and negation in French and English. It presents many novel features that arise both from the theoretical framework I build on, basically nonlinear phonology, and independent conceptual considerations.

I shall take the opposite direction to current analyses of the phenomenon. Since work by Pollock (1989) and Emonds (1978) current generative analyses assume that negation and adverbs occupy a fixed position in the phrase structure and that cross-linguistic variation in their position is due to movement of other categories, mainly the verb. Conceptually speaking, this is a highly unobvious decision, since the main element of the structure that selects argument and modifiers has to move while a satellite that slightly modulates its meaning remain in situ throughout the derivation.

I will show that lexical verbs move neither in French nor in English. Instead adverbs have to move, either rightward (French) or leftward (English), the driven force of the movement being the Obligatory Contour Principle (McCarthy 1981, Desouvrey 2000, 2001, 2005, etc.). As forced by the representations, a rightward movement ends up to the right

¹ This paper was written in 2002 and will be revised at a later point. Comments are welcome.

edge of the verb, while a leftward movement targets the right edge of whatever element preceding the verb.

In the next section I present the main aspect of the theory of features and constraint interaction developed in Desouvrey (2000) and other work. Section 3 presents the main claim of this article, namely VP-adverbs and negative morphemes are specified for Case. Section 4 presents in some detail the treatment of negation in English, and section 5 shows that the same analysis carries over to negation in French and Spanish. Section 6 deals with some residual effects of negation in French and English. Section 7 proposed a feature-based typology of negation, accompanied of known and possible syntactic effects. Finally section 8 concludes the paper.

2. Theoretical framework

The theory I shall assume is thoroughly developed in Desouvrey (2000) and other work. The main features of it is that syntactic structure does not contain any functional elements, like IP, CP, etc., which appears to be artefacts of Government and Binding Theory (GB) and its current successor, the Minimalist Program (MP). Features play a key role and are displayed in independent tiers, just as in nonlinear phonology and morphology. Finally a well-formed syntactic structure results from the interaction of a few constraints, some of which are violable and others are not. Both types of constraint belong to different grammatical levels; as discussed in Desouvrey (2001), violable constraints are enacted in the Phonology, whereas absolute constraints are dealt with in the Evaluator, which is much like an interpretive component and which outranks the Phonology.²

2.1 Tiered features

Consider a simple sentence like *Mary repaired the truck*. Under the minimal assumption that the verb enters the syntax with its tense morphology, its representation may contain neither an IP projection, nor a CP projection since all of the complementizer effects can be derived from other assumptions, among which the π feature (see Desouvrey 2000, 2001, and below). Thus, the representation will be highly parsimonious, showing only actual lexical elements and obviously the binary constituents, as seen in (1).³

² This view is similar in principle to Derivational OT, as discussed in Rubach (2000).

³ Such a view is usually referred to as Lexicalism. In fact, Lexicalism is not crucial for the proposal. It is adopted in order to avoid irrelevant discussion on morphology, just as the SVO assumption is adopted without taking a stand on whether it is basic or derived from other principles. Indeed, the same results would be obtained in the course of this paper under the assumption that inflectional morphology occurs in the

(1) [Mary [repaired [the truck]]]

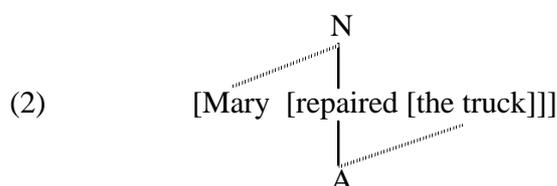
This structure, I assume, is constructed by successive applications of Merge (Chomsky 1995), that is, the verb is first merged with the object [the truck], previously constructed by merging *the* and *truck*, and forming the constituent [repaired [the truck]] which is merged with the subject, yielding the final structure. The first grouping is, in current generative theory, referred to as DP, the first projection of the verb is a V' and the last a VP. I keep these names, although they may not have further relevance to the following discussion. In fact, projections like DP, VP, V', etc., are to be taken as class nodes, as in nonlinear phonology, and are convenient names for each grouping. In fact, when these labels are not omitted in the structure, integers will be used instead for convenience. It is important to notice that constituents are constructed dynamically out of real lexical elements and, further, they do not (pre)-exist independently of them. That is, one cannot assume a skeletal clause which contains designated slots where relevant elements are to be inserted. Further, there can't be any distinction between heads, specifiers and complements, either between A and A' positions. In (1) a further projection may be created by merging the structure with a sentence adverb, like *yesterday*, or any other element provided that it can be licensed in the structure. Licensing of syntactic elements is not the purpose of this article, but one may note that the arguments in (1) are licensed independently of any syntactic process by the lexical structure of the transitive verb, which must have two arguments: a subject and a direct object.

In (1) suppose that the verb is specified for both nominative (N) and accusative (A) Case. This hypothesis is not new and therefore may not be controversial. Recall that GB theory includes a Case theory which postulates that nominative Case is assigned by a tensed IP, i.e. a tensed verb, while accusative Case is assigned by the verb, both processes being subjected to certain conditions internal to this theory, for instance government, c-command, etc. Assuming that each Case of the verb is on its own tier (see also Yip, Mailing and Jackendoff 1987) and that this type of arguments (DP/NP) are unspecified for Case, Case

syntax, under a structure like (i), where the verb and the tense affix are merged in the same way as *the* and *truck*. Such a structure would work under the plausible assumption that relevant features are borne by the tense affix. What seems to be incompatible with our view is the generation of the tense affix in a position not adjacent to the verbal root, as in (ii), so that it would take a rule, like the famous Affix Movement, to obtain the correct linear order verb+ed. Such a rule cannot be motivated under the present assumptions, at least at this point of the development of the proposal made in Desouvrey (2000).

- (i) [Jane [[repair ed] [the truck]]]
(ii) [ed [Jane [repair [the truck]]]]

assignment by the verb is reduced to a simple spreading process, as seen (2).⁴ (For obvious technical reasons, spreading lines will not be shown in further examples.)



In the structure in (2) it is assumed that the arguments are in their canonical position (with respect to the verb), that is, in a SVO language, left of the verb for the subject and right of the verb for the object. Grammatical relations are taken to be semantic primitives, each of which is related to a Case: subject is related to nominative Case, while direct object is related to accusative Case.⁵ Nominative Case will always spread on the intended subject, and accusative Case will spread on the intended direct object.

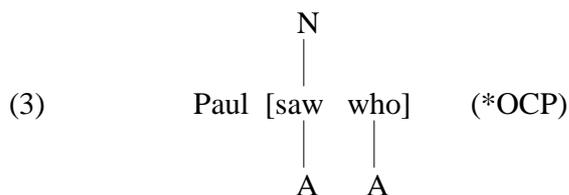
2.2 Constraints and derivation

Spreading does not occur in every context, however. If the argument already bears a Case, it saturates the relevant Case of the verb without any spreading process. Nevertheless the Case-specified argument must appear in the same position with respect to the verb as Caseless arguments. For instance in (3), the *wh*-operator is specified for accusative case (Desouvrey 2001), and therefore it need not be Case-marked by the verb.

⁴ An element which is unspecified for Case may be either the subject, the object of the verb or the object of a preposition. In contrast, a Case-specified element may not have such a large distribution. Indeed it will appear only in the position compatible with its Case, namely subject position if it is specified for nominative Case and direct object position if it is specified for accusative Case (see Desouvrey 2000 for a discussion).

The spreading process can also be seen as an alignment process, as in OT, in which the argument is aligned in Case with the verb.

⁵ The correspondence between Case and grammatical relations is a strong constraint and any structure which fails to satisfy it may not be grammatical. This constraint is crucial in the account of *do*-support in interrogative structures, as discussed in Desouvrey (2001). Notice that the grammatical relation of indirect object is related to an oblique Case, the nature of which is discussed in Desouvrey (2000). This case will not be encountered in the facts to be discussed below.



(3) is not a well-formed sentence in English. But it is a possible input for the derivation. Each step of a derivation, including the initial input, may yield the output if it is optimal, that is, if it contains no or lesser constraint violations than an alternative step or input. Certain constraints, essentially the OCPs, as formulated in (4) and (5), may be violated in the output, while some others are not. Violable-type constraints are not ranked, but must be satisfied as much as possible. That is, given that OCP and OCP' are not mutually ranked, if an output contains a violation of OCP, it cannot be overridden by an alternative output which included a violation of OCP'. In other words, an alternative output is possible if it does not violate a constraint related to the same grammatical level. In (3) the constraint that is violated is the OCP, the relevant domain being bracketed. Notice that (5) is really a gemination effect, since in a given syntactic structure, all occurrences of the same Case will fuse, yielding a single Case linked to several morphemes (in fact two of them in the best case). The feature fusion will force the displacement of intervening elements, which come to be in an intergeminate position; for technical reasons, feature fusion, i.e. the replacement of all occurrences of a Case by a single one associated to many morphemes, is not shown in the examples.

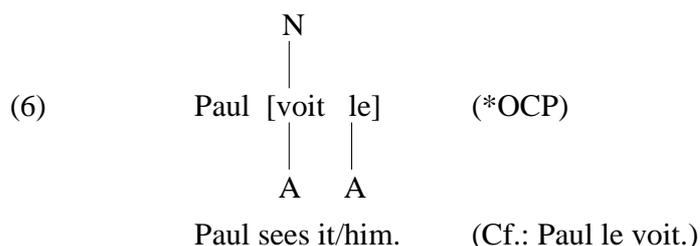
(4) Obligatory Contour Principle (OCP)

Two elements with identical Case features are not allowed in the same syntactic domain.

(5) Gemination effect (OCP')

No elements can stay between two other identical Feature-bearing elements.

Since constraints are universal, a configuration like (3) may not yield a well-formed sentence in any language, everything being equal. In (3) the Case-bearing argument is a wh-operator, but it may in fact be any type of argument, including a relative pronoun, a clitic and even an adverb as I will show in the next section. (6) shows a similar configuration in French with a third person clitic.



In general, all constraints tend to be satisfied in the derivation, and many processes can be used to do so, including movement, feature delinking, deletion, and as a last resort an alternative input with further morphemes. However, violation of OCPs is allowed, when no alternative derivation is successful. Thus the structures in (3) and (6) must be altered in order to obtain a better output. Indeed (6) will straightforwardly yield an acceptable output under movement of the clitic outside the relevant domain, as discussed in Desouvrey (2000, 2005). However, a derivation with (3) as its input will never give rise to a well-formed sentence, because once the operator moves to the front of the clause, it triggers a fatal violation of another constraint belonging to the Evaluator, AMB (basically a mismatch between Case and grammatical relation), which will not be discussed here. A correct output will eventually be obtained with an alternative input structure with *do*-support (see Desouvrey 2001).

Besides the OCPs, enacted at the Phonology as just discussed, a constraint that plays a central role in this article is the Superiority Condition (7), which is adapted from Chomsky (1973). This constraint belongs to the Evaluator and therefore is inviolable.

(7) Superiority Condition

Sigma-specified elements (i.e. operators) may not commute within a sentence.

To sum up, a derivation proceeds from an input. Whenever a constraint is violated in the input, movement (or other operations) take place in order to rescue the structure. There are well-formedness conditions on the derivation. Association lines must not cross and string-vacuous movement is not allowed (these will be illustrated in due course). Further, if several derivational options are possible, the one that is shortest, with a minimal violation of constraints, is preferable, a result ensured by an obvious principle of economy on the representation, as will be shown.

2.3 Tiered morphemes

In nonlinear phonology phonemic material must be associated with a skeleton, referred to as x-slots (see Kenstowicz 1994 for discussion).⁶ Since to the best of my knowledge no syntactic theory has ever mentioned the x-slot theory or the like, one must assume that syntacticians build their analysis by abstracting away from an important piece of phonological information. In effect, if x-slots are seriously taken into consideration, the adjunction process may not be seen as it is currently assumed in syntax.

In phonology and morphology each phonemic element making up a word is associated with a timing unit and obviously all timing units are aligned in the same axis. Similarly in a string of words, like a syntactic structure, every skeletal tier will be aligned on the same axis, yielding a single timing tier, as shown in (8a), omitting phonemic melodies. It may not be something like (8b), where the skeleta are not aligned

- (8) a. xxx xxxx xx xxxx-----T
 b. *xxx
 xxxx
 xx
 xxxx-----T

Let's refer to each skeleton in (8a) as A, B, C and D respectively. Suppose that C is to adjoin to A. Once it leaves its position in the structure, it may no longer be on the original tier T. In current conception of adjunction, which ignores the skeletal tier, C-to-A adjunction creates another occurrence of A and transforms the original one in a nonterminal element to which C is attached, yielding either (9a) or (9b). According to the logic of the x-slot theory, it appears that A and C are no longer in the same timing tier as A', B and D, a fact that is obliterated by this type of adjunction. Furthermore, the appearance of A', now a nonterminal node, in the same tier as terminal elements B and D casts doubts on the well-formedness of this representation. Indeed, at the output it is not known how this type of structure can be linearized, since A and A' are really the same element. Moreover, a further undesirable feature is that it yields two different outputs, one of which is chosen by the analyst according to the desired result (but see Kayne 1994 for a solution to this problem in GB theory).

⁶ In nonlinear phonology, x-slot theory is challenged by the moraic theory of the skeleton; we may not enter this debate here.

- (9) a.
$$\begin{array}{c} A' \quad B \quad t \quad D \text{-----}T \\ \swarrow \quad \searrow \\ A \quad C \end{array}$$
- b.
$$\begin{array}{c} A' \quad B \quad t \quad D \text{-----}T \\ \swarrow \quad \searrow \\ C \quad A \end{array}$$

In Desouvrey (2000) the above problems is avoided by taking full advantage of nonlinear representations. Instead of creating a new node A, C is attached to A via an association line. More exactly the leftmost element of the melody of C, call it *c*, is linked to the rightmost x-slot of A, as seen in (10). This type of adjunction is reminiscent of the Morpheme Tier Hypothesis (McCarthy 1981). A multitiered structure like (10) is linearized by the convention in (11). Needless to say that if an adjunction structure is not processable by (11) it may not yield a well-formed sentence.

- (10)
$$\begin{array}{c} xxx \quad xxxx \quad t \quad xxxx \text{-----}T \\ | \\ c \\ | \\ xx \text{-----}T' \end{array}$$

(11) Linearization Convention

Proceeding from left to right and the original tier, embed the adjunct onto the initial tier so as to obtain a continuous flow without zigzaging.

A structure like (10) offers a single choice so that adjunction may run on its own, independent of the analyst. Whenever an element is adjoined, it will be linearized to the right of the head. Furthermore, under (11) multiple adjunction to a single element is excluded. For instance D cannot be adjoined to A at the same time as C; rather it must adjoin to C under the same condition and that would create a further timing tier.

Given (10) and (11), the movement under OCP of the clitic in (6) to the subject will yield the desired result, as seen in (12). Hereafter the symbol ' = ' will be conveniently used to indicate adjunction.⁷

⁷ I assume that the accusative Case of the clitic and that of the verb remain in the same tier/plane after the adjunction. Technically this outcome is ensured by an adaptation of the Node Generation Convention

(12) Paul=le voit.

It is clear that an adjoined element is not in the same tier as its host, irrespective of the mechanism we adopt for adjunction, either (9) or (10). Suppose now that some elements, by their very nature, are tightly bound to the tier they are in, so that they are not allowed to be in a new tier by movement. Thus the fact that an operator in English-like languages cannot appear in an intermediate position in the clause, like a clitic, follows straightforwardly. I assume that this anti-adjunction property is due to a feature referred to as π (Desouvrey 2000, 2001). Elements that are π -specified may move to an edge of the clause, however. Such movement does not yield a timing-tier translation, since it is the juxtaposition of the element at an edge of its own clause, either the left edge or the right edge (according to its original position with respect to the verb) as shown in (13), where C is juxtaposed to the left edge of its clause (13a) or to the right edge (13b).

(13) a. [C] [A B t D]-----T
 b. [A B t D] [C] -----T

This is the essential of our assumptions, which are discussed thoroughly in Desouvrey (2000). Other well-formedness conditions on the derivation will be introduced and discussed when relevant.

3. Adverb Case

Adverbs are possibly the less well-known category in the linguistic literature. It is perhaps for this reason that they are usually put in a fixed position in the structure, so that all other elements move around them. Those other elements are verbs and arguments, which possess obvious features such as gender, number, person and, in some extent, Case. Adverbs can agree with nothing, although their semantic function in the sentence is usually clearly known. The reason that it is difficult to deal with adverbs is partly due to their invariability and the limitations of the syntactic analyses available. In the case of VP-adverbs, it is obvious that they modify a verb, adding some piece of information in order to make more precise the verb's meaning. An obvious interpretation of this property is that these adverbs form a constituent with the verb they modify. In the parsimonious structure adopted here, in which there is no distinction between A and A' positions, specifiers and heads, etc., this

proposed by Archangeli and Pulleyblank (1986). The details of this representation are not given in this paper, but see Desouvrey (2000).

means that the verb must merge with the adverb at some point in the building of the structure, either before or after one of the arguments, as seen in (14). (The digital labels should be taken as class nodes and are intended to show the order of the merger, and the exclamation mark means that all of them are input at this point, not output.)

- (14) a. ! [3 Paul [2 [1 saw often] Mary]]
 b. ! [3 Paul [2 often [1 saw Mary]]]
 c. ! [3 Paul [2 [1 saw Mary] often]]
 d. ! [3 Often [2 Paul [1 saw Mary]]]

Ignoring irrelevant concern on linear order (presumably SVO), in (14a) the verb first merges with the adverb, forming a constituent [1] which is then merged with the object, yielding [2], which finally merges with the subject [3], while in (14b) the verb merges first with the object [1] which then merges with the adverb [2] which in turn merges with the subject [3]. Two other variants for (a) and (b) are logically possible: in (14c) the verb makes up a constituent with the object [1] and the latter is merged with the adverb, and so on. In (14d) the adverb is added to the structure after the subject, forming the last constituent. There can be no further relevant alternatives under the assumption that English is a SVO language.⁸

The position of this type of adverbs is not free in English and therefore one has to find a way to rule out all but one of the inputs in (14). We know that each grammatical relation is realized in a canonical position in such a somewhat rigid SVO language like English: subject is left of the verb and object is right of the verb. Further, there is a correspondence with grammatical relations and Case; the subject is related to nominative Case and the direct object to accusative Case. The facts show that whether the argument of the verb is Case-specified or not, it will appear in the position related to its intended grammatical function.

Now if we extend the notion of argument to any associate of the verb so as to include adverbs, it follows that an adverb which appears left of the verb is related to the subject, while an adverb which appear right of the verb is related to the object. Since English VP-adverbs can never appear to the right of the verb, meaning that unlike DPs, they cannot acquire a 'grammatical relation' by position, it must be the case that their obligatory

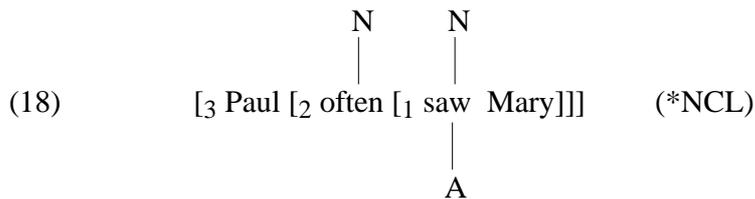
⁸ In fact if the purpose of this paper were to account for linear order, one would have to consider a structure like (i) as well. But in the present article, this is irrelevant.
 (i) [3 [2 [1 saw often] Mary] Paul]

appearance in preverbal position is enforced by some other property, which I assume to be Case. Indeed, there is a strong similarity between adverbs and arguments; Caseless arguments are free to appear in any position, according to the desired meaning, and acquire a Case according to the grammatical relation associated with the position; compare (15a) and (15b). Case-specified arguments may not be free to appear in any position; rather they are usually in the position associated with a grammatical relation compatible with their Case. Thus if the arguments in (16a) are swapped, one obtains ill-formedness (16b), which is obviously due to the fact that *he* is not compatible with the grammatical relation of (direct) object. Just like a Case-specified argument like *he*, VP-adverbs are not free to be used in any position; compare (17a) and (17b).

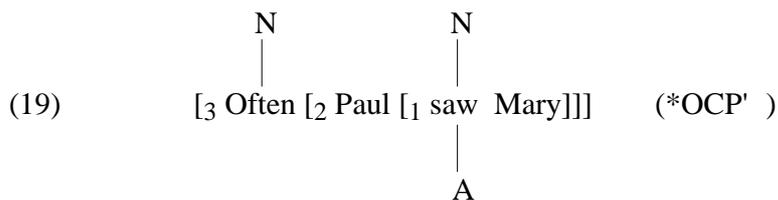
- (15) a. Mary likes Paul
 b. Paul likes Mary
- (16) a. He likes Mary
 b. *Mary likes he.
- (17) a. Mary often sees Paul.
 b. *Mary sees often Paul.

In this perspective it is clear that the hypothesis that adverbs are Case-specified elements is highly plausible, just like the subject pronoun in (16) and unlike the NP in (15). The obvious question is: what is the Case they are specified for? The interaction of constraints should lead us unmistakably towards the correct Case-specification for adverbs in English, namely accusative.

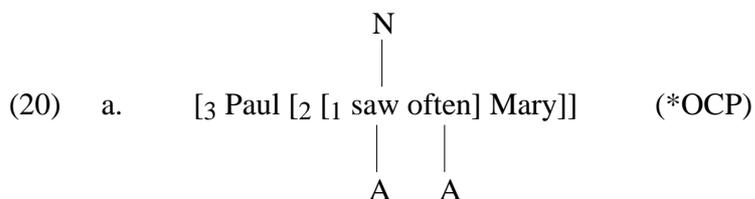
Consider the input (14b), which is apparently a well-formed sentence. Since the adverb is on the subject side of the verb, one might be tempted to assume that it is specified for nominative Case. However, this is incorrect. In effect, such a structure contains a fatal violation of a well-formedness condition on the representation, namely the no-crossing lines constraint (NCL). As can be seen in (18), the nominative Case of the adverb and that of the verb are in the same plane and therefore the latter would Case-mark the subject through an association line. Since NCL is a well-formedness condition on the representation, the structure is ruled out.

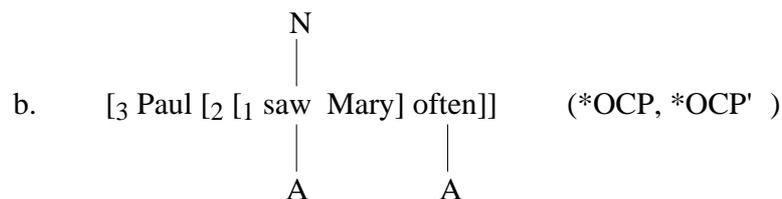


Notice that with (14d) the NCL could be avoided, but another constraint is violated, namely OCP', which excludes configurations where two Case-specified elements are not string-adjacent, (19). Assuming that the subject cannot move from its position (cf. Desouvrey 2001) the structure is ruled out. The same problem would arise if the subject were a pronoun specified for Case. In (18) the adverb would be in an intergeminate position (violation of OCP') and similarly the subject in (19). In any event, no movement may take place to rescue the structure. If the adverb were to move in (18), its only possible host would be the right edge of the verb so as to avoid the ban on string vacuous operation, but we know that adverbs are not allowed to be in this position in English.

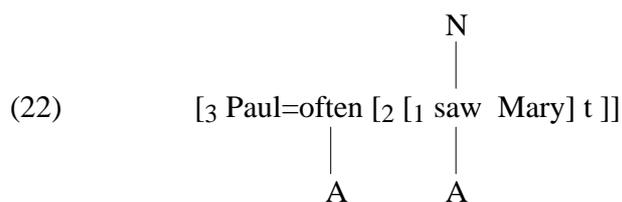
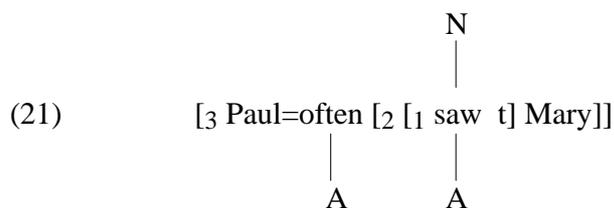


Clearly inputs (14b) and (14d) irremediably yield ill-formedness. Let' s see now what is going on with inputs (14a) and (14c), which are consistent with the accusative Case hypothesis. In (20a), the adverb and the verb are in the inner domain, the one labeled [1], while in (20b) they are in a larger domain, labeled [2]. In the first Case, the OCP is violated, as well as the no-crossing-lines constraint, while in the second both OCP and OCP' are violated. The strategy to avoid these constraints will be the same in both structures, as I show immediately.





Indeed, in (20a) and (20b) movement of the adverb outside the OCP domain yields straightforwardly the desired result, as seen in (21) and (22) respectively.⁹ In both cases, the subject is the only available element outside the original domain of the adverb and it is the nearest host. Notice that in (20b) a single derivational step is needed, although two constraints are violated. Satisfaction of the OCP gets around of OCP', but the contrary is not true. In effect, if the adverb adjoins to the verb, OCP' is avoided, but OCP would persist and the resulting structure may not be grammatical. In the final structure, the adverb is string-adjacent to the verb, hence no violation of OCP' is incurred. (The reader can verify for herself/himself that movement of the verb, the arguments, as well as the adjunction of the adverb to any other position yields a violation of either of the OCPs, the ban on string vacuous movement and/or runs afoul of the linearization convention (11).)



It appears that this analysis yields a very important result. Adverb placement in English and French (see below), as well as clitic placement in Romance (see Desouvrey 2000, 2005) and wh-movement in all those languages come down to an OCP effect.

⁹ The trace *t* familiarly indicates a structure where movement has taken place; it has no real existence in the present proposal. When an element moves, the relevant part of the structure is deleted by some version of the Stray Erasure Convention.

Furthermore, it is worth noting at this point that under the present proposal syntax is a highly deductive system, exempt of arbitrariness.

Let us turn now to French adverbs. As is well-known, VP-adverbs in French appear in exactly the opposite position as English adverbs, as illustrated in (23) with the adverb *souvent* 'o ften'.

- (23) a. Paul voyait souvent Mary.
 b. *Paul souvent voyait Mary.
 ' Paul often saw Mary.'

In my perspective, this can be accounted for straightforwardly under the hypothesis that such adverbs in French are specified for nominative Case, in contrast to English adverbs. Under this hypothesis, adverbs in French initially appear left of the verb, as seen in (24a). The crossing-lines effect is avoided by moving the adverb to the nearest host, namely the right-edge of the verb, as seen in (24b).

- (24) a. [3 Paul [2 souvent [1 voyait Mary]]]
- N N
- | |
- A
- b. [3 Paul [2 t [1 voyait=souvent Mary]]]
- N N
- | |
- A

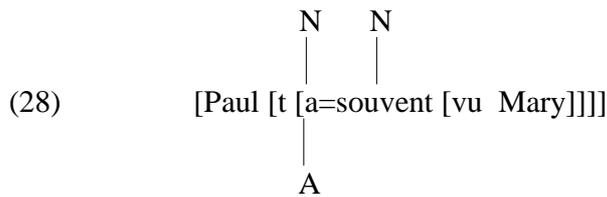
The same result could be obtained if the subject were preceded by the adverb at the input, as seen in (25a). In this case, an OCP' violation is incurred by the presence of the subject between the two Case-specified elements. And since the subject may not move in this context, the adverb must move rightward. Now if the adverb adjoins to the right edge of the subject, a crossing-lines effect would be created and the linear order would be identical to (24a). The derivation would thus be vacuous since it yields an output identical to an input which is ruled out. Notice that if adjunction to the subject were possible in (25), the learner (like the linguist) would have no grounds to rule out (24a). Therefore the only way to obtain a well-formed sentence is to adjoin the adverb to the verb, as seen in (25b).

- (25) a.
$$\begin{array}{c} \text{N} \qquad \qquad \text{N} \\ | \qquad \qquad | \\ [3 \text{ Souvent } [2 \text{ Paul } [1 \text{ voyait } \text{ Mary}]]] (*\text{OCP}') \\ | \\ \text{A} \end{array}$$
- b.
$$\begin{array}{c} \qquad \qquad \text{N} \qquad \text{N} \\ \qquad \qquad | \qquad | \\ [3 \text{ t } [2 \text{ Paul } [1 \text{ voyait=souvent } \text{ Mary}]]] \\ | \\ \text{A} \end{array}$$

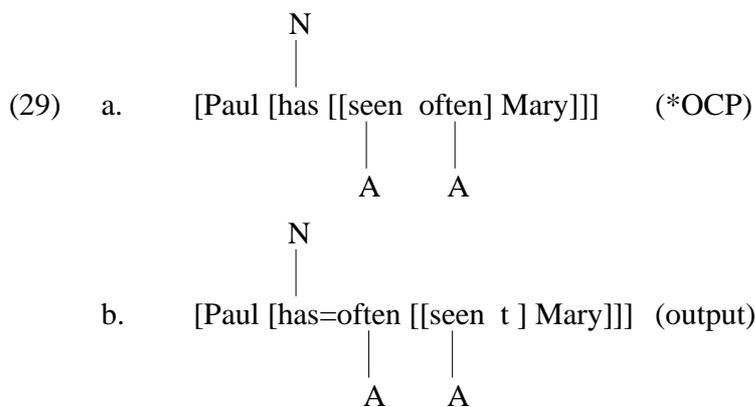
While with simple verbs French and English differ in the way seen above, with compound verbs they pattern alike; compare (26) and (27). Thus in both languages, the adverb cannot precede the auxiliary.

- (26) a. Paul a souvent vu Mary.
b. *Paul souvent a vu Mary.
- (27) a. Paul has often seen Mary.
b. *Paul often has seen Mary.

In the present proposal, variation within and across languages may not be due to parameterization or ranking of constraints or rule application. Constraints are universal, but features may vary from one language to another and even within a given language. The similarity in (26) and (27) has to do with auxiliaries and participles which have different Case property in both languages. As discussed in Desouvrey (2000), participle verbs in French are not specified for Case, so that in compound tenses all features are provided by the auxiliary. That is, tensed auxiliary verbs in French are specified for nominative and accusative Case. In English on the other hand, participle verbs are specified for accusative Case, but not for nominative Case, which is thus assumed by the auxiliary. On this view, the derivation of (26a) patterns exactly like the case involving a simple verb; the adverb adjoins to the nearest host, the auxiliary, as seen in (28).



In English, the adverb and the participle give rise to an OCP effect, and therefore the adverb has to move. The nearest element outside the OCP domain is now the auxiliary, as seen in the derivation in (29).¹⁰



In the structures discussed above, it appears that movement of accusative-specified arguments or adverbs outside the domain of the verb yields the correct result. If one knows why movement of the verb is not possible in this context, the analysis would be stronger. As mentioned above, the OCPs rule out the movement of the verb as well. If the verb is to move instead of the adverb, it may not adjoin to the nearest host, the subject, for this would be a string vacuous movement; in whatever other elements or edge of the clause it moves to, further problems will be created. To take an example, assume that it is juxtaposed to the left edge of the clause, as seen in the following:

¹⁰ Some VP-adverbs in English may appear in pre-auxiliary position, as noted by Pollock (1989, fn. 8) and others; see (i). It appears that in (i) a longer movement takes place, possibly for reason of harmony; see footnotes 24 and 26. But at this point, I do not know why other adverbs like *completely* cannot show up there.

(i) Paul often has seen Mary.

function is to suppress the offending feature of the main verb. The evidence that will be adduced to support this analysis comes essentially from the comparative syntax of negation in English, French and Spanish. The hypothesis that verbs are operators will be considered correct to the extent that the analysis succeeds with cross-linguistic facts, yet in a depth and accuracy inaccessible to other accounts.

4.1 Simple clauses

Unlike adverbs, negation cannot cooccur with a simple tensed verb in English. Independently of our hypotheses on feature specification, the difference between VP-adverbs and negation may not be surprising, since the latter, unlike the former, is an operator, a widely-accepted assumption in syntax and formal semantics. Operators are traditionally considered as scopal elements, that is, they have the property to take scope over the structure they appear in. In GB/MP, as well as in the OT analysis of Grimshaw (1997), they must be in a position to realize their scope. Such a designated position is usually the specifier of some phrase. In the present proposal, which has done away with these notions, I shall simply assume that an operator element has scope over its sentence, irrespective of its position. (In GB theory, when operators do not move in some language, it is claimed that movement to a specifier takes place covertly at LF.) Further, I take the scope of an operator to be due to a special feature, which is referred to as σ (sigma); cf. Desouvrey (2000, 2001). The feature sigma is to be found in every genuine operator. It is thus the common ingredient to negation and wh-elements, which distinguishes them from non-operators.¹¹

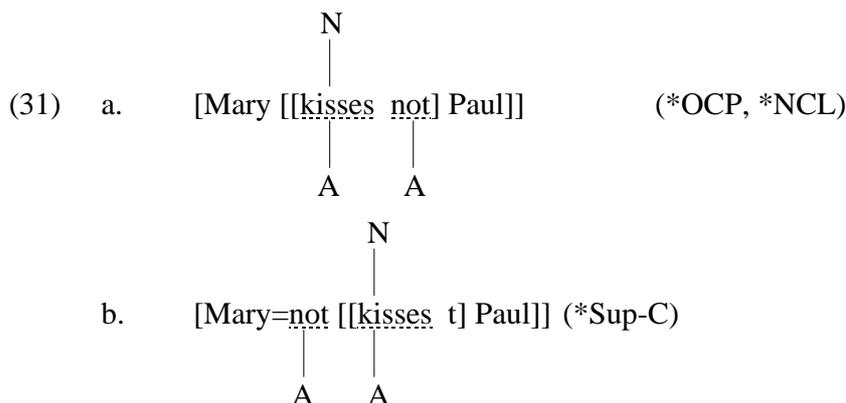
In fact, scope should be seen as a relative notion. If there is a single operator in a structure, it must have complete scope over the structure. But if another operator is present their scope should depend on their relative positions within the structure. Since the scope of an element has to do with the interpretation of the structure, it must be the case that it should not be altered by derivational processes. That is, if a structure contains a single operator, the scope of the latter will not change under movement; but if there are several operators, their relative scope at the input must be maintained throughout the derivation. On this view, the unique constraint relative to scope, Sup-C, may not be violated in any well-formed sentence; such a constraint belongs to the Evaluator level, as mentioned earlier.

Suppose that English tensed verbs, including modals and auxiliaries, are specified for sigma, that is to say they are operators just like negation and wh-elements (Desouvrey

¹¹ In GB the features [\pm WH], [\pm NEG] are used to deal respectively with wh-elements and negation.

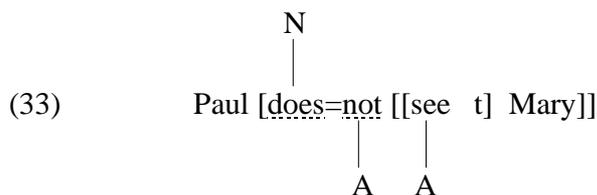
2001). The hypothesis that an element which need not be scopal is specified for sigma may not be seen as ad hoc. It appears indeed to have considerable crosslinguistic interests. It is useful in Romance grammar, at least in Spanish, Italian, and Portuguese (Desouvrey 2000, in preparation), where it is responsible for the failure of clitics to skip over infinitive verbs, for both are specified for sigma. In the generative literature, one finds a similar hypothesis for auxiliary *do* in Pollock (1989). In spite of the limitations of his framework, he has the intuition that this verb behaves in a manner similar to operators. At this point of the development of the present theory, I assume that this feature is rooted to the morpheme, at least for the verb, like root node features in nonlinear phonology (see for instance Halle 1992).

In the light of this hypothesis, consider the derivation of a simple negative structure. The most obvious input must be as seen in (31a) (hereafter, σ -operators are underlined with a dotted line for clarity):

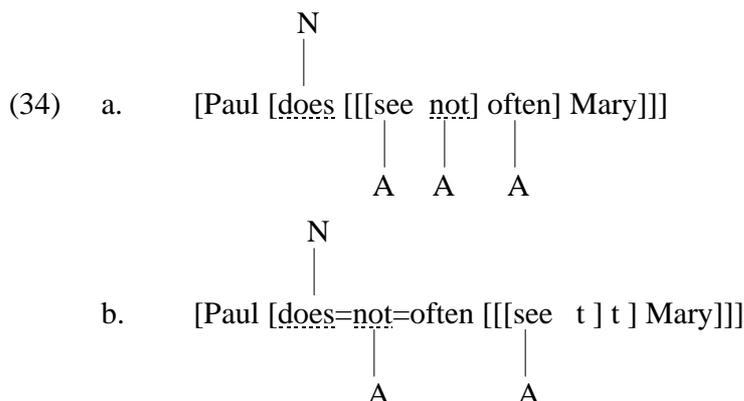


This structure contains an OCP violation and a crossing-lines effect, just like a structure with simple adverbs. However, these problems cannot be avoided by movement of the negative morpheme, since this would incur the violation of Sup-C, which ensures that the relative position of operators may not be altered during the course of the derivation, hence the ill-formedness of (31b).

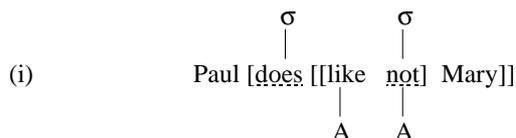
Before considering an alternative derivation, one can immediately show that subjunctives in English strongly supports this analysis. Since these verbs cannot have agreement morphology, it is natural to assume that they are in fact *to*-less infinitives. Since infinitive verbs are not σ -operators, there is no superiority effect that prevents the negative morpheme from adjoining to the subject, outside the OCP domain, as seen in (32) (only relevant features are shown).



Similarly, a structure containing both negation and a VP-adverb, like (34a), produces two OCP effects. In the inner domain, negation moves to the dummy modal and the VP-adverb moves to the complex thus made up, as seen in (34b). It cannot be the other way around; for generally in structures where two elements with equivalent features are to move to the same host, the one which is closer must adjoin first (Desouvrey 2000, 2001). Notice that in the final structure, (34b), the accusative and the nominative features are borne by a single complex element, namely *does=not=often*.¹⁵ The auxiliary verb spreads its nominative Case to the subject, the accusative Case of the main verb is perhaps absorbed by the adverb and, therefore, the object is not Case marked. In this theory Case-marking is not obligatory for DPs which must be licensed by the lexical structure of the verb.

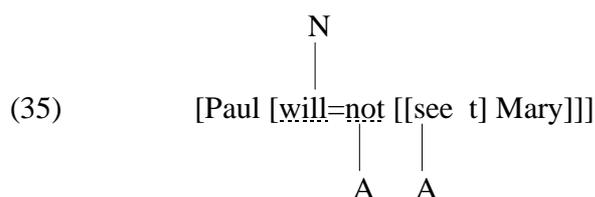


sigma OCP cannot be settled, since the linear order of operators cannot change within the sentence (Sup-C). If this analysis of sigma turns out to be the correct one, the overall analysis is still valid with the same force; but it further entails that the grammar 'prefers' a violation of OCP with modals to a violation of OCP with lexical verbs; otherwise *do* would not be used at all. This is highly plausible. In effect, the output of (i), as shown in (33) above, would contain a single sigma OCP violation, while a *do*-less structure would contain two violations of OCP (sigma and accusative) as well as a violation of the no-crossing-lines constraint.



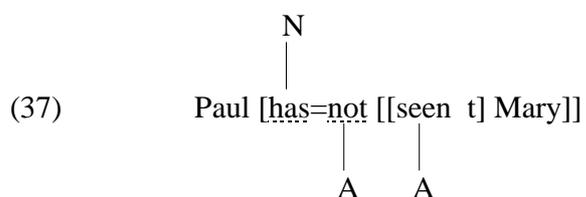
¹⁵ As in nonlinear phonology, feature fusion of the accusative Case of the negative and the adverb takes place and, after that, fusion with the Case of the verb, so that there is no OCP' effect in the output.

It is easy to see that this analysis is valid for any modal, and it makes clear why dummy *do* cannot cooccur with other modals, including itself. In effect, as mentioned above, *do* is inserted because tensed verbs are operators, but if an operator modal is independently needed, the main verb cannot be an operator (because it may not be finite), as illustrated in (35). (36a) and (36d) illustrate the point with modals *can* and *should* (features are omitted, but they should be familiar to the reader at this point.)



- (36) a. Paul can=not see t Mary
 b. Paul should=not see t Mary

The same analysis carries over to compound tenses with *have* (recall that participles are not operators). Thus in (37), the violation of the OCP in the input is avoided by movement of the negative morpheme to the auxiliary, yielding the desired result, with no violation of the superiority condition.



At this point, it is worth comparing this analysis with Grimshaw' s (1997), who relies on two constraints CASE (i.e., a DP must be Case-marked) and SUB (a clause must have a subject). These two constraints (Case>>Sub) are related to X' theory so that the visible subject must be in the subject slot for the sentence to be well-formed. On such grounds, **John not t left* is ruled out because *John* is the specifier of *not*, a subject position, but it is not Case-marked in this position. In contrast, **not John left* is ill-formed because *John*,

although Case-marked, is in [Spec,VP], not a subject position. And therefore *do*-support arises.¹⁶

Notice that there is no need for constraints CASE and SUB in the present proposal. In principle, the subject may appear in any position, but the interaction of constraints reduces the number of possibilities to one. A DP/NP need not be assigned Case, it is always licensed by the lexical structure of the verb, but if it is in a configuration to get Case, an association line must not cross the spreading line.

4.2 More on English negation

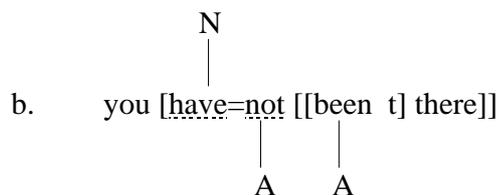
4.2.1 The negative affix *n't*

In the previous examples, there is no distributional difference between *not* and *n't*. Regarding (33)-(37) it is just fine to say that *n't* is a simple contraction of *not*. However, once one considers additional facts, this may not be correct. Indeed, according to the convincing evidence presented in Zwicky and Pullum (1983), it is clear that *n't* does not enter the syntax independently of its host. As they argue, *n't* is not a simple clitic but an inflectional affix to the host.

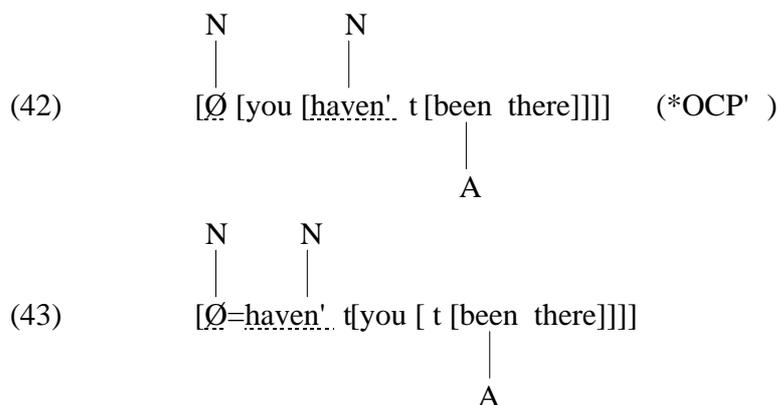
The present proposal is consistent with this view. Moreover, the hypothesis that tensed verbs are σ -operators, combined with the theory of adjunction discussed above, makes it possible to explain the rise of negative auxiliaries/modals in English and to accurately predict contexts in which *n't* is possible or not.

First of all, recall that the essence of the OCPs is that elements with identical features must get together (OCP'), but not in the same minimal syntactic domain (OCP). The concept of "get together" can be realized in two ways: either when the elements are string-adjacent or when one is adjoined to the other. Now, as discussed above, adjunction is traditionally viewed as incorporation of the adjunct into the head, i.e. the adjunct becomes like an affix to the head. The present system is more accurate; in effect, an adjunct is always on the left edge of its host with which it is concatenated into a single word. If the elements concatenated are of identical nature in that they possess some common feature, the relationship between them must be stronger. Indeed, modals (including finite auxiliaries) and negation are both σ -operators and, as discussed above, they appear to be syntactically concatenated (in most contexts). Since modals and auxiliaries make up a closed paradigm

¹⁶ In fact, since CASE outranks SUB in her framework, the second structure should be grammatical, according to standard OT-theoretic assumptions, and a *do*-support should not be necessary at all. In her analysis, it is not clear why the ranking is not sufficient to obtain the desired structure.



Similarly, (39a) must have been derived from (42), assuming that yes-no questions are introduced by an abstract operator, a hypothesis not unusual in the literature (see for instance Grimshaw 1997). In this structure, the subject *you* stands between two Case-bearing elements, which incurs a violation of OCP'. This is settled by movement of the negative modal to the null operator, as seen in (43). Recall that movement of the subject, more generally NPs, is not possible in this context, as discussed in Desouvrey (2001).



Let's turn now to the contrast between (39b) and (40), which incidently illustrates a case of economy in derivation. Since a negative modal is not used, structure (44a) must be posited as the input. This structure contains three different operators (which are underlined) and a violation of both OCP' (nominative tier) and OCP (accusative tier). Since the OCPs are not ranked, operations performed to avoid their violation need not take place in a particular order. In fact, under the economy requirement, ideally all constraints must be satisfied with a minimum of operations and therefore the optimal output must arise from a derivation that satisfies this requirement. On this view, in (44a) the negative might avoid the OCP by moving to the tensed auxiliary, but the derivation cannot go farther under the plausible assumption that adjoined elements cannot move again.¹⁷ The resulting structure (44b), in which OCP' is still violated, may be only acceptable with perhaps an appropriate

¹⁷ As a general rule, no element can move twice in the present system. Multiple short movement, as in GB, is not possible, since this would need costly operations like delinking of the adjunct association line.

pitch movement, as is generally the case in structures containing some constraint violation. Alternatively, if from the input the auxiliary moves first to the operator, the subject *you* becomes then a perfect landing site for negation, as seen in (44c).¹⁸ In the latter superiority effect is not violated, since the relative order of all three operators remains unchanged; OCP' is not violated either, since the negative is incorporated into the subject, forming a single complex element.

- (44) a. $\begin{array}{c} \text{N} \quad \text{N} \\ | \quad | \\ [\emptyset \text{ [you [have [[been not] there]]]] \end{array}$ (*OCP, *OCP')
- $\begin{array}{c} \text{A} \quad \text{A} \\ | \quad | \end{array}$
- b. $\begin{array}{c} \text{N} \quad \text{N} \\ | \quad | \\ [\emptyset \text{ [you [have=not] [[been t] there]]]] \end{array}$ (*OCP')
- $\begin{array}{c} \text{A} \quad \text{A} \\ | \quad | \end{array}$
- c. $\begin{array}{c} \text{N} \quad \text{N} \\ | \quad | \\ [\emptyset=have \text{ [you=not] [t [[been t'] there]]]] \end{array}$ (output)
- $\begin{array}{c} \text{A} \quad \text{A} \\ | \quad | \end{array}$

At this point it should be clear why use of a negative modal is not always successful. It appears that auxiliaries and modals are usually in a position to host the negative morpheme on its way out of the OCP domain. In contexts where the negative morpheme is not adjoined to a modal or a tensed auxiliary, use of *n' t* may not be successful. This is a bold generalization. Consider for instance (45a), where negation has moved to the auxiliary under OCP. The auxiliary is not a σ -operator in this context since it not tensed (a verb complement of another verb is never tensed in English), and therefore this position is not suitable for a negative modal, as seen in (45b). It is now obvious why negative modals like **ben' tor been' tare* are not attested.

- (45) a. Jane must [have=not] [met t] John]]

¹⁸ There is no theoretical neither logical reasons that may prevent us from assuming that movement of *have* and *not* occurs at the same time. While *have* is moving to the operator, the subject *you* becomes a possible landing site for the negation on its way leftwards. *Have* and *not* can never target the string-adjacent element, *you* and *been* respectively, by virtue of the ban on string-vacuous movement.

- b. *Jane must haven' met John.

The accuracy of this system is such that it makes it possible to distinguish grammaticalization from analogous process of reduction of weak melodies in the syntax. Some phonological segments may be omitted or weakened in some syntactic contexts, but this does not necessarily entail they are lexicalized with their host. As reported in Williams (1994), Selkirk (1972) shows that contracted forms with *have* do not pattern like negative modals, as evidenced by the ill-formedness of (46a), to be compared with (43). In my view, the input for this structure must be something like (46b). Just like the case discussed in (45), *have* is not tensed in this context and besides it is not adjoined to the modal. Therefore it may not have been involved in the grammaticalization process discussed above. There is no reason for *have* to move with the modal, and therefore the correct output must be as seen in (46c), where the operator modal is attracted by the abstract operator. In the affirmative equivalent of it (47), some phonological process may alter *have* in 've, independently of the feature sigma.

- (46) a. *Could've e John been there?
 b. [∅ [John [could [have [been there]]]]]
 c. [∅=could [John [t [have [been there]]]]]
 (47) [John [could [(ha)ve [been there]]]]

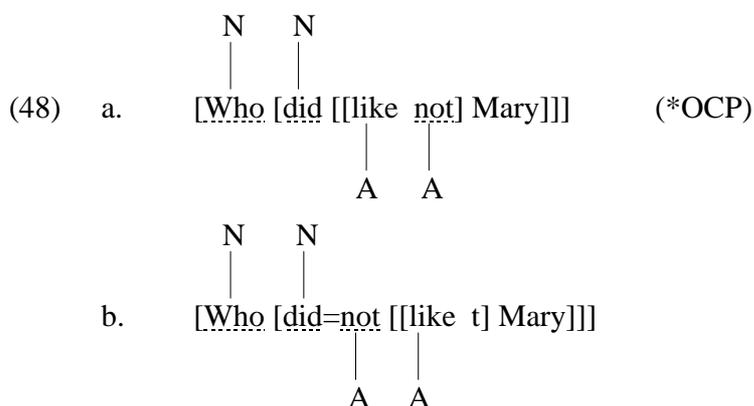
Apparently Selkirk reaches the conclusion that *could've* is not really a contracted form. This is true in the sense that contracted forms with 've do not arise from the lexicon. According to Williams, however, the behavior of *could've* has to do with word formation processes in the language. As he puts it:

. . . [F]orms like *should've* do not qualify as possible words from the point of view of the head-complement relation. If these were words the contracted *have* would occupy the head position of these words, but semantically *have* is the complement of the modal—so these cannot be words. (p. 200)

This view is not diametrically opposed to ours, and in fact such a conclusion can be deduced from the input (46b). Indeed, *could* and *have* do not make up a minimal unit, either by adjunction or merger and therefore there are no grounds to treat them as a word. I will return on some aspect of negation discussed in Williams (1994).

4.2.2 Negation and wh-operators

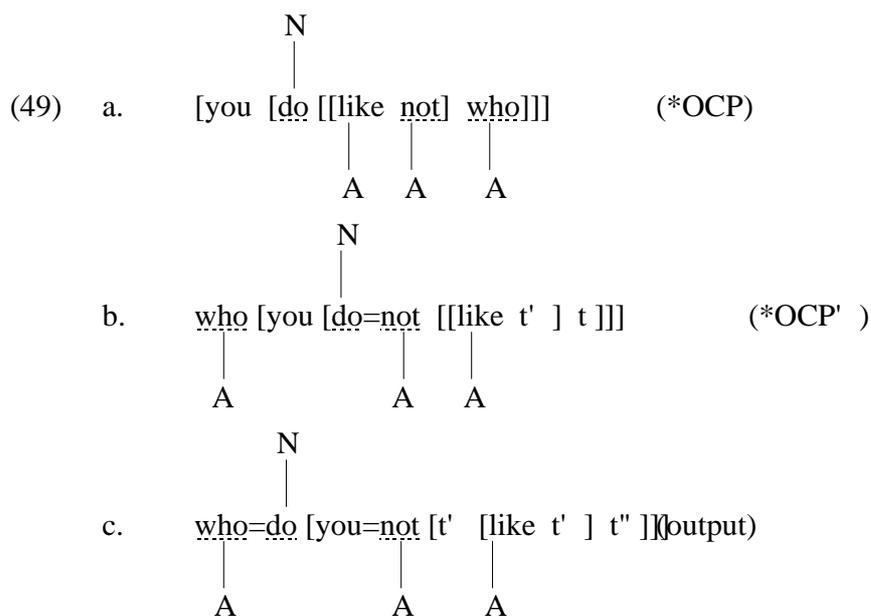
In nonnegated wh-object constructions, *do* must be inserted for independent reasons, thoroughly discussed in Desouvrey (2001). In negated wh-subject constructions, it must be inserted in the input in order to host the negative morpheme, which cannot skip over a tensed verb by virtue of Sup-C, as we now know. Consider the input in (48a) in which the subject is a wh-operator. There are thus three operators in the structure, as indicated by the dotted underlining. The negative morpheme must move as usual under OCP to the auxiliary, but not to the wh-operator, since it cannot skip over another operator (the auxiliary), as seen in (48b).



One can see that the well-formedness of (48b) lies in the fact that elements with identical Case are adjacent to each other, without being in an OCP domain. Further, the relative order of the three operators is the same as in the input. (The negative modal *didn't* could have been used instead, which would allow to avoid the movement).

A more interesting configuration arises when a wh-object construction is negated. In such a case, there are two possible derivations; the successful one must contain lesser constraint violation, if any. Consider input (49a) in which an OCP effect is triggered by both the wh-operator and the negation. As discussed above, the wh-operator is incompatible with adjunction and, therefore, it must juxtapose to an edge of the clause, in fact the left edge in order to avoid a string-vacuous movement. Since this movement puts the operator outside of the sentence domain, Sup-C is not violated. Independently of the wh-operator the negative morpheme must move as well, in order to avoid an OCP violation. It is at this point that the derivation may take two different paths, one of which is to be rejected on OT-theoretic grounds: the one that allows to avoid all constraint violation is to be the output.

First, if the negative adjoins to the auxiliary *do*, the resulting structure (49b) displays a configuration in which OCP' is violated, because the subject *you* intervenes between the newly formed negated modal and the fronted wh-operator, both being specified for accusative Case. This possible output is to be compared with the following alternative. If auxiliary *do* moves first to the wh-operator, which has been fronted, the subject becomes the nearest element outside of the OCP domain and therefore the negative morpheme can adjoin to it, just like the case of (44) above, yielding the structure (49c). It is important to note that this structure is the best that can be obtained from this configuration. (49c) contains three syntactic elements: *like*, *who=do* and *you=not*, all of which are specified for accusative Case; two of them are also σ -operators and they are adjacent in the relevant sense as well. Yet (49c) is not perfect. Indeed, the complex *you=not*, though it is specified for accusative Case, induces an OCP' effect since it intervenes between two other accusative-specified elements.



Notice that an alternative derivation with negated modal *don't* is possible as well. Very plausibly, this modal is not specified for accusative, as assumed above. The OCP violation in the initial input is settled by movement of the operator to an edge of the clause, which triggers a double violation of OCP', since the subject and the negated modal come to intervene between the verb and the fronted operator. The negated modal moves to the wh-

operator, yielding the optimal output (50c), in which OCP' is still violated, due to the subject intervening between the verb and the complex *who=don'*.¹⁹

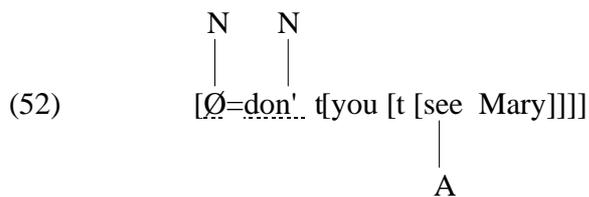
- (50) a. $\begin{array}{c} \text{N} \\ | \\ [\text{you } [\underline{\text{don'}} \text{ like } \underline{\text{who}}]] \\ | \quad | \\ \text{A} \quad \text{A} \end{array}$ (*OCP)
- b. $\begin{array}{c} \text{N} \\ | \\ \underline{\text{who}} [\text{you } [\underline{\text{don'}} \text{ t}[\text{like } \text{t}]]] \\ | \quad | \\ \text{A} \quad \text{A} \end{array}$ (*OCP' (2))
- c. $\begin{array}{c} \text{N} \\ | \\ \underline{\text{Who=don'}} [\text{you } [\text{t}' \text{ [like } \text{t}]]] \\ | \quad | \\ \text{A} \quad \text{A} \end{array}$ (Output)

In yes-no questions, the same configuration obtains as in object wh-questions. The best output is obtained under movement of *do* to the null operator, which allows the movement of *not* to the subject, as seen in (51b).

- (51) a. $\begin{array}{c} \text{N} \quad \text{N} \\ | \quad | \\ [\emptyset [\text{you } [\underline{\text{do}} \text{ [[see } \underline{\text{not}}] \text{ Mary}}]]] \\ | \quad | \\ \text{A} \quad \text{A} \end{array}$ (*OCP, *OCP')
- b. $\begin{array}{c} \text{N} \quad \text{N} \\ | \quad | \\ [\underline{\emptyset}=\underline{\text{do}} [\text{you}=\underline{\text{not}} \text{ [t } [\text{see } \text{t}'] \text{ Mary}}]]] \\ | \quad | \\ \text{A} \quad \text{A} \end{array}$ (Output)

However, if negated modal *don'tis* is used, the only constraint involved is OCP' and it is solved by moving the complex modal to the operator, as shown in (52).

¹⁹ Movement of the subject to the right edge of the clause would yield a fatal violation of AMB, a constraint which plays a crucial role in the insertion of *do* in wh-questions (see Desouvrey 2001).



Summing up, *not* must move outside the domain containing itself and the verb by the OCP. It may not skip over any tensed verb, which are σ -operator, by virtue of the superiority condition. If the object of the verb is a wh-operator, the auxiliary may not host the negative. Instead the latter adjoins to the subject, while the auxiliary moves to the fronted operator in order to avoid an OCP' effect. It is further shown that the reduced form of negation can be used only in contexts where negation is adjoined to a tensed auxiliary. The facts covered in the next subsection will strengthen this analysis by showing that when negation adjoins to a null subject, *n'* cannot arise either.

4.3 Negation in untensed clauses

As seen above with the subjunctive example, movement of negation is not blocked by nontensed verbs. The reason is that these verbs are not sigma operators and their skipping by *not* does not incur a violation of the superiority condition. The various facts to be discussed in this section turns out to be reducible to the simple case of the subjunctive; the crucial assumption we need is the following, which is obvious: if a simple verb cannot take inflection in the present tense, it must not be finite, whether it is preceded or not by *to*.

4.3.1 Settlement of OCP in imperative verbs

I take imperative verbs to be defective in that they are incompatible with a subject, whether overt or null. Example (53a) illustrates the structure of an imperative verb; as can be seen, there is no need for *do*, and indeed its appearance yields ill-formedness (53b). In negated imperative, however, *do* is obligatory, as seen in (54).

- (53) a. [Open [the door]]
 b. *Do open the door!

- (54) a. *Open not the door!
 b. Do not open the door!

Structure (54b) must have been derived from structure (55a). Such a structure is similar to other *do*- constructions discussed so far, except that the dummy modal does not have a subject to its left. The main verb, as a complement of the modal, cannot be finite, hence is not a σ -operator. Therefore, the negative morpheme adjoins to the modal, thus avoiding OCP without violating Sup-C, as shown in (55b), which is the optimal structure.²⁰ Alternatively the relevant negated modal can be used, as seen in (56).

- (55) a. [Do [[open not] the door]]
 | |
 A A
- b. [Do=not [[open t] the door]]
 | |
 A A
- (56) [Don' [open [the door]]]
 |
 A

Notice that this alternative structure for imperative verbs, which allows to avoid the OCP violation, is possible because the dummy modal is used for similar reasons elsewhere in the grammar. In French, however, where there is no dummy verb, when the argument is a clitic, the violation of the OCP cannot be avoided in positive imperative verbs. In effect due to the lack of an adjunction site to the left of the verb, movement may not take place; compare (57a) and (57b); see Desouvrey (2000).

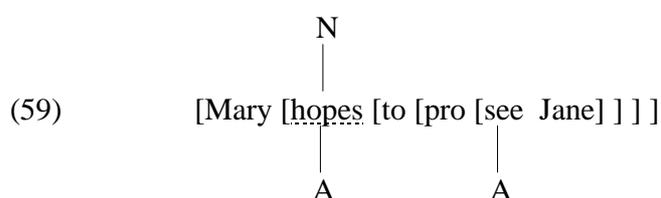
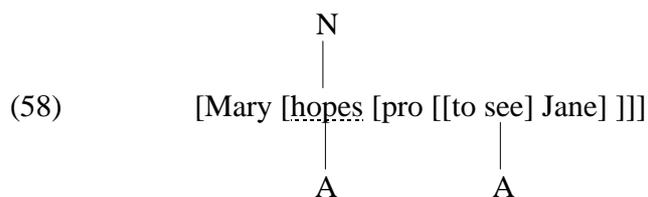
- (57) a. Regardez-la! (*OCP)
 ' look at her.'
- b. Ne=la regardez pas!
 ' Do not look at her.'

4.3.2 Structural variation in infinitive verbs

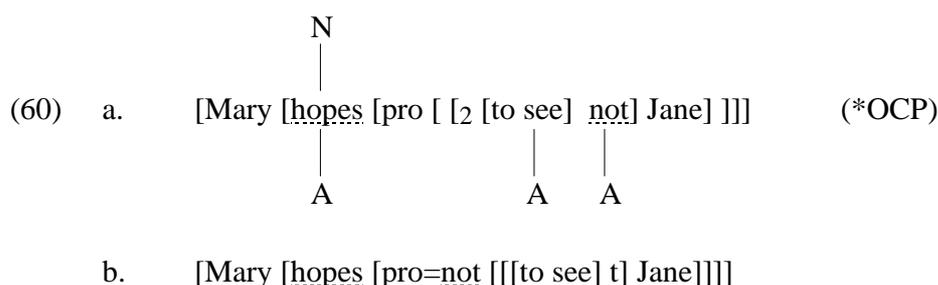
In positive infinitive clauses, there is no need to insert *do*, neither in the matrix clause, nor in the infinitive clause, for all constraints are satisfied, in particular the argument structure of the infinitive verb is satisfied by the presence of the null argument, as seen in (58). In fact, a second structure may be posited: in contrast to (58) in which the particle *to* is

²⁰ It is irrelevant in this context whether the dummy modal is specified or not for nominative Case.

prefixed to the verb prior to the merger with other elements, it is possible that *to* is merged in the last place, after the merger with the arguments, as seen in (59). As far as I can tell, there is no direct evidence that would allow us (including learners) to rule out one of these structures. Indeed, as I will show, it appears that this lack of evidence is the cause of much variation observed in negated infinitives.

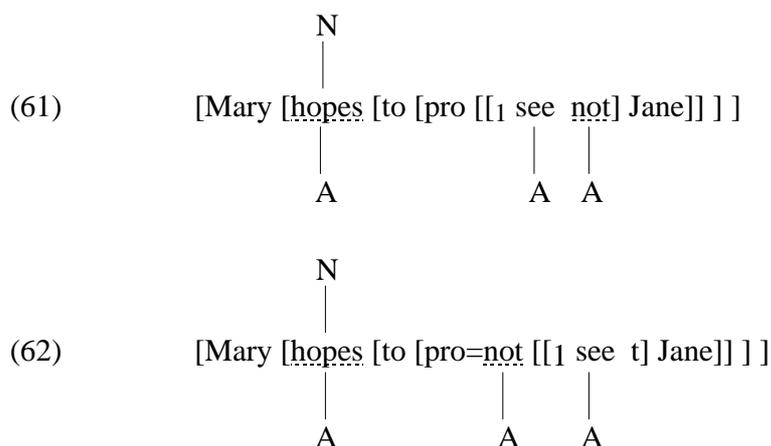


Suppose now that the infinitive structure in (58) is negated. As discussed above, the negative marker must initially appear to the right of the verb, yielding a violation of the OCP in the second domain [2], which includes the *to*-infinitive and the negation, as seen in (60a). Therefore, the negative morpheme moves to the null subject, yielding (60b), which is the optimal output. There is no superiority effect here, since infinitive verbs are not operators.



However, English grammar displays variation in the position of negation in infinitival clauses. Although most school grammars stipulate that the negative morpheme must precede *to*, as in (60b), it is common to find structures where negation appears between *to* and the verb. This might be due to the nature of *to* on which speakers cannot make a strong decision regarding whether it is a strict modifier of the verb (58) or a clausal modifier (59).

If a structure like (59) is negated, the input must be as seen in (61) in which the OCP is violated in the inner domain [1]. As usual, the negative morpheme must leave its position, adjoining to the nearest element outside of the OCP domain, namely the null subject.²¹ Therefore, *to* precedes negation, as seen in (62).



In the same vein, one can account for multiple positions of negation in cases where a modal is followed by a sequence of auxiliaries and participles, as shown in (63), due to Williams (1994), his example (17c). It appears that a well-formed sentence is obtained, whatever the position of the negative morpheme. We may not immediately see that two positions are absolutely forbidden to the marker of negation: the post verbal position (**thinking not*) and the premodal position (**not must*). This is obviously due to OCP and Sup-C respectively. Further, neither *have* nor *been* are sigma operators and therefore, it is not surprising that negation may skip over them. I show that the variation observed in (63) is brought about by an indeterminacy in constituent structure, just like the case of (60) and (61). Basically an OCP effect will force the negative morpheme to move, but the landing site will vary according to the content of the OCP domain; elements inside this domain may not be a possible landing site.

(63) John must (not) have (not) been (not) thinking.

²¹ Speakers who favor (60) are likely to take *to*, in this context, to be sublexical, just like an infinitival affix. This is consistent with our assumption, largely supported elsewhere in the grammar, that the null subject slot is adjacent to the verb it is an argument of. It cannot be involved in any rule of movement, given the ban on string vacuous operations.

Summarizing, by positing that the negative operator is specified for accusative Case, its syntax is the by-product of the interaction of the OCPs and the superiority condition. *Do*-support is thus used to settle the conflicting demands of these constraints, namely movement of an operator over another operator and respect of the relative order of the same operators. Since the dummy modal takes a nonfinite complement, just like true modals, the negative can move over the verb with no superiority effect resulting in. In the next section, I consider possible ways constraint conflicts are settled in a crosslinguistic perspective.

This analysis lies on two crucial hypotheses: VP-adverbs and negation are Case-specified elements and tensed verbs are operators, both of which are supported by evidence in English grammar. In fact, facts from French and Spanish will be shown to support the analysis as well.

5. Π -effect in Romance

In this section, I show that negation in French and other Romance languages differs from negation in English in two important respects: in Romance, in contrast to English, the negative morpheme is specified for π and nominative Case. As discussed earlier, an element specified for π is incompatible with tier translation, that is, it cannot adjoin to another element. Actually, French differs from Spanish and English in a crucial and obvious way in that it expresses negation via a two-word morpheme, namely *ne pas* in which *ne* is specified for π and *pas* for nominative Case. This is a welcome difference, since it makes it possible to thoroughly explore the consequence of our hypotheses on feature specification.

Given the proposed feature specification in Romance, the Sup-C constraint may not play a significant role in French negative sentences, since tense verbs are not operators as in English. The OCP is not to be found either, since there will be no accusative-specified element to remove from the 'right domain' of the verb. However, other problems will arise with the crossing-lines effect and OCP', since the negative morpheme is generated to the left of the verb. In most contexts, the morpheme *pas* (nominative) must move to the right edge of the verb in order to avoid a crossing-lines effect and OCP'. In Spanish, on the other hand, the π feature and the nominative feature is beared by a single morpheme *no*, which therefore cannot move at all. I suggest that the problems that French and English avoid by movement and/or *do*-support is handled in Spanish and similar languages by dropping the subject altogether.

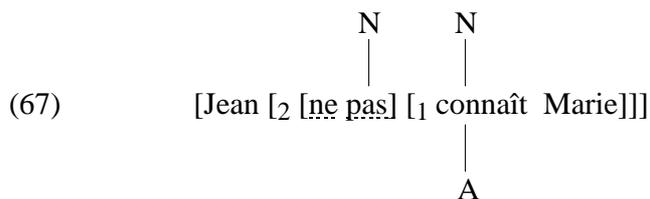
5.1 Dislocation of negation in French

Negation and VP-adverbs pattern alike; as we have seen in English, both are specified for accusative Case and therefore they move to the left of the lexical verb under the effect of the OCP. As well, in French negation and adverbs display the same distribution, however different from English. We have seen that adverbs in French are specified for nominative Case, in contrast to English. Negation in French appears to be different from negation in English in the same way that VP-adverbs in the latter are different from VP-adverbs in the former. Indeed, as can be seen in (66) an adverb or a negative morpheme appear in French precisely in the position where their counterparts are forbidden in English.

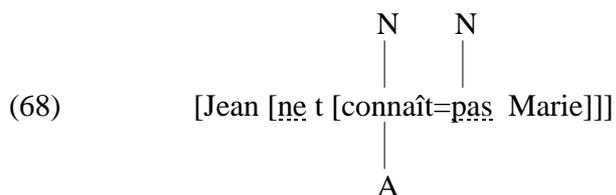
- (66) a. Jean ne connaît pas Marie.
Jean not knows not Marie.
- b. Jean n' a pas vu Marie.
Jean not has not seen Marie.
- c. Jean voit souvent Marie.
Jean sees often Marie.
- d. Jean a souvent vu Marie.
Jean has often seen Marie.

Notice that the morpheme *ne* is often omitted in colloquial speech and is even completely absent in some dialects. In the literature, it is debated whether the head of negation is *ne* or *pas*, and often it is claimed that *ne* is a scope marker. Under the present assumptions on syntactic representations, the importance of the notions of head (and projection) is downgraded, so that such a problem appears to be irrelevant. Nevertheless, we may note that an element whose position is invariable in every negative sentence may hardly be a good scope marker, as Williams (1994) points out.²² The crucial point in my view is that since *ne* and *pas* conjointly express sentential negation, it must be the case that they are stored together in the lexicon and, therefore, they should make up a constituent in the input structure. Since a nominative-specified element is related to the subject, the constituent *ne pas* must appear initially on the left side of the verb. If so, the initial structure for (66a) must be the following:

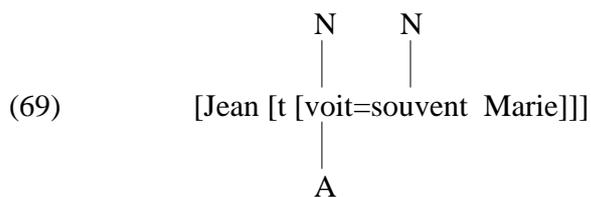
²² Williams (1994) suggests that *ne* is a marker of sentential negation, which seems to be the case. But this should not be important in French grammar, since this element is often omitted in current speech (see below).



In the domain [2], there are two nominative-specified elements, the negation and the verb, and therefore OCP is violated. A crossing-lines effect takes place as well. In this context, the OCP cannot be settled, since if the negation moves to the subject, an OCP' effect will be created, without avoiding the crossing-lines effect and further the order of both negative morphemes will be altered in violation of Sup-C.²³ However, the crossing-lines effect can be avoided by movement of negation to the verb. That is, the negative morpheme must adjoin to the nearest host, namely the right edge of the verb, as seen in (68). Nominative Case can then spread to the unspecified elements, *Jean* and *ne*. Movement to the left edge of the verb is not possible for many reasons: first it would be a string vacuous and anyway it would not be conformed to the Linearization Convention; movement to the right edge of *Marie* is ruled under the economy requirement: a shortest movement is always preferable.

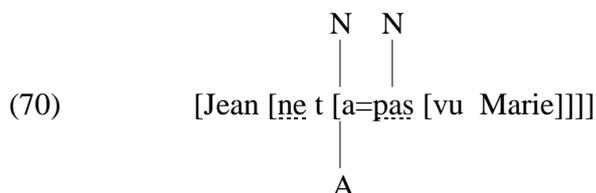


Recall that basically the same effect obtains with a simple adverb, as seen in (69) (=66c).

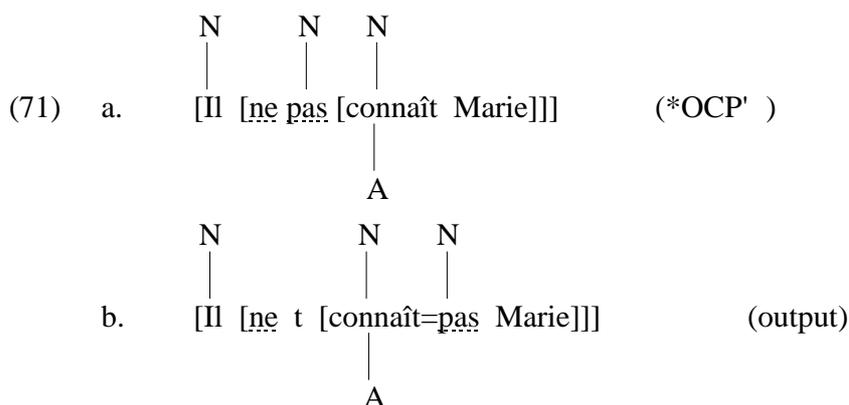


²³ In fact the OCP is relevant and can be avoided only when two Case-specified elements are in a minimal domain, generally the domain to the right of the verb, referred to as the complement domain of the verb in Desouvrey (2000), so that movement of the element can take place without creating further problems (OCP' , crossing-line effects).

This effect is also observed in compound tenses where an auxiliary is used under the assumption that in French the participle (of the lexical) verb is devoid of Case features, which are then provided by the auxiliary:

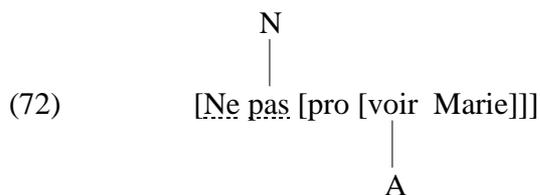


If the argument is a Case-bearing element, like a clitic (71a), *pas* must move anyway, since it is in between two Case-bearing elements, a configuration which is ruled out by OCP'. In the output (71b), OCP' is irremediably violated by the presence *ne*, which, due to the feature π , is incompatible with adjunction.



Finally, the fact that both parts of negation precede infinitive verbs in French finds a bold explanation. Since infinitive verbs are Caseless, there is no crossing-lines effect, neither OCP' effect, and therefore there is no reason for movement to occur²⁴

²⁴ While movement of negation is absolutely impossible in infinitive structures, movement of adverbs is possible, though it is not obligatory. Therefore with adverbs there are two possible outputs, as shown in (i) (see Pollock 1989, his examples (27)). With respect to this state of affairs, two questions arise: (a) why negation cannot move and (b) why other adverbs can move, since in both cases there is no crossing-lines effect. This might be due to the fact that a constraint-based grammar tends to suppress particular contexts in order to maintain a greater generality for constraints as far as further problems are not created (see also footnote 26). Thus movement of VP-adverbs in infinitive have an harmonic effect on the paradigm by allowing almost uniformly the order verb>adverb. As for negation, its movement is barred in infinitives because in non-infinitive contexts it does not occur with impunity. In effect, both morphemes of negation are sigma-operators and therefore should normally be kept together in order to avoid an OCP' violation. But since the no-crossing-lines constraint is a well-formedness condition, hence inviolable, movement must take place. In negated infinitives, however, there is no crossing-lines effect and therefore the string-adjacency of both



Summing up, in French tensed clauses negation is scattered around the verb in order to avoid the crossing-lines effect and OCP'. These problems do not show up in infinitive clauses and therefore both morphemes are kept together. *Ne* is specified for π , which prevents it from being adjoined to whatever element, hence OCP' is violated in the output.

We may correlate the erosion of *ne* in French, which is omitted in almost all colloquial speech, to its inducing a violation of OCP' whenever the subject is a clitic. In fact, this seems to be a general property of the grammar which responds to any constraints violation in some way or another. In Desouvrey (2000), it is observed that whenever OCP is violated, that is when an argument fails to undergo movement, it is spelled out with a pitch movement. For instance, clitics cannot be stressed in French, but they must be after imperative verbs. For instance in (73a), the imperative verb has no material to its left to lodge the clitic, therefore movement outside the OCP domain cannot take place. The pitch movement is manifested by the fact that the schwa vowel of the clitic can never be elided in imperatives, while it may be (and usually is) elided in other contexts, for instance in (73b).²⁵ (This seems to occur in the case of a severe violation of a constraint; we may therefore interpret the pitch as a clue for learners, who otherwise cannot discriminate between structures with and without constraint violations.)

- (73) a. Embrassez-le/*l' !
 Kiss him!
- b. Marie le/l' voit.
 Marie sees him.

negative morphemes must be preserved. In other words, the movement of *pas* in this context would create an OCP' violation for no reason.

- (i) a. Perdre complètement la tête...
 b. Complètement perdre la tête...

²⁵ As a possible objection, one might claim that the clitic is stressed because it comes to be in a stress position, which is in French the last word or syllable in a phrase. This cannot be correct, however. In effect, if this were the case, nothing would prevent the reduced form of the clitic to become the coda of the last syllable of the verb: **embrassez-l'* [ãbrasél]. In other languages, for instance Haitian Creole, which has no special clitics, the main stress apparently falls on the last syllable and the reduced form of the pronoun is spelled as a coda to this syllable: *anbrase-l* [ãbrasél].

rightward. At first blush, this is confirmed by the fact that all major Romance languages but French are null-subject languages and that their negation system patterns like Spanish.

Furthermore, this hypothesis is consistent with facts available from the history of French. Consider the rise of the order *ne pas V* in infinitive verbs (cf. (72)), which is discussed in Hirschbuhler and Labelle (1994), hereafter H&L.

Old French was a null-subject language in which negation was expressed via a single morpheme, actually *ne*, as in Spanish (H&L and references therein). In negative structures, the order was then *N(egation) V(erb)*, whether the verb is tensed or not. Later on, in Middle French, the morpheme *pas* (a noun used as an adverb with the meaning of a very small amount) came to be increasingly used with negation, yielding the structure *Ne V (pas)*. Interestingly, according to the facts discussed in H&L, the demise of null-subjecthood in the end of Middle French is concomitant of the consolidation of *pas* and the rise of the order *N pas V* in infinitival clauses.

This is the very facts reported in H&L. Let' s see now how well they fit with the present analysis. In the beginning of the appearance of *pas*, the structure of a negated clause, whether infinitival or tensed, was the following in adult grammar, where *ne* is presumably the cause of the null-subject:

- (76) a. Ne pro V...
b. Ne pro V pas...

Upcoming speakers completely ruled out (76a) and reanalysed *pas* as an obligatory component of negation, which is therefore seen as a two-word morpheme, *ne pas*. Since the components of this complex morpheme may not be scattered at different positions in the input, those speakers reanalysed the position of *pas* in tensed clauses as a result of movement, i.e. *pas* is interpreted as an element adjoined to the right edge of the verb, as in (77).

- (77) Ne t pro V=pas...

Structure (77) only makes sense if *pas* is specified for N Case and not for π . Now if *pas* is specified for N Case, *ne* must be reanalysed as a Caseless element—otherwise it would never be separated from *pas*, given OCP'— and therefore there is no longer any constraint against the appearance and the integration of the subject into the structure. The input in (78a) is therefore posited for negative structures with a tensed verb. The same structure must be posited as well for infinitive clauses (78b), except that the subject must be null, as

the speakers should know and assume on independent grounds. Since infinitive verbs bear no nominative Case and license no overt subject, there is no reason for movement to take place in (78b).

- (78) a. S ne pas V...
 b. Ne pas pro V...

Although further research is needed to fully validate this analysis, it is more plausible than those which relate null-subjecthood strictly to richness of the morphology. After all, certain languages have a rich verbal morphology, but are not null-subject languages; conversely other languages have a relatively poor verbal morphology, but display null-subjecthood (see Jaeggli and Safir 1989, and their contributors).²⁶

6. Negation as a complement-taking head

In my perspective so far, negation is conceptually a modifier to the verb, just like an adverb. It is not seen as a complement-taking element, as in Williams (1994), rather it is a complement of the verb. That is, the verb selects the negative morpheme instead of its being selected by the negative morpheme. This is an understandable assumption, since negation has no meaning in itself. One may take an analogy with a simple phrase like 'a blue car', where blue is the complement to the head in that the main idea is the car and not blueness. However, negation can modify other types of phrases as well—which the above assumptions do not rule out—and the restrictions observed on such a use mostly follow from the interaction of constraints discussed above.

In effect, the fact that *not* is specified for accusative Case and the dynamic of the representation predict that it can appear neither in the subject of the clause nor in its complement. In the first case, its accusative Case is incompatible with the nominative Case

²⁶ One may object that null-subject would be allowed only in negated sentences if it were intended to avoid permanent violation of the no-crossing-lines constraint. Such an objection holds under the view that constraints are implicational of the type *if...then*. In fact, under such a view, the grammar would use a series of rules to avoid the problem at hand. For instance, one such rule would be the following: if a sentence is negated, then the subject is not overt. Since there is no crossing-lines effect in infinitives, a further rule or clause would be needed to make it more precise or to reduce its power. In turn this rule would force the grammar to resort to two types of structures for negated and nonnegated sentences: one with a *pro* and another without it. However, under the simplest view that constraints are general and context-free, it is expected that they overapply in order to harmonize paradigms, unless they find opposition from other constraints. In other words, since in negated structures, but not in nonnegated structures, the subject induces a violation of a constraint, it is omitted everywhere altogether. Needless to say that harmonized paradigms ease the task of the learners.

of the grammatical function of subject, as discussed in Desouvrey (2000) for instance. This can be seen in the following sentence, discussed in Williams (1994), his (27e):

(79) *Not a doctor saw Bill.

(79) could have either the structures in (80). In (80a) the scope of negation is intended to be the NP, while in (80b) it is the whole sentence. In any event, the structure is ruled out on known grounds. Since *not* is specified as accusative, its appearance inside the subject phrase or on the subject side of the verb creates a mismatch between Case and grammatical relations; OCP' is violated as well, but this is not crucial here²⁷

(80) a. ![Not a doctor] saw Bill
 b. !Not [a doctor saw Bill]

If *not* were specified for nominative Case, these inputs would be acceptable and some operations would be performed to avoid the OCP'. Indeed in French, at least *ime-* less dialects, the equivalent of (80b) would yield a perfect sentence after the settlement of OCP' (recall the discussion of (14)):

(81) a. Pas [le docteur a vu Bill]
 b. t [le docteur a=pas vu Bill]

As well, the equivalent of (80a) can be found in French, in which negation is specified for nominative Case, but it requires a polarity marker on the verb, which is provided by *ne*, as is well-known.

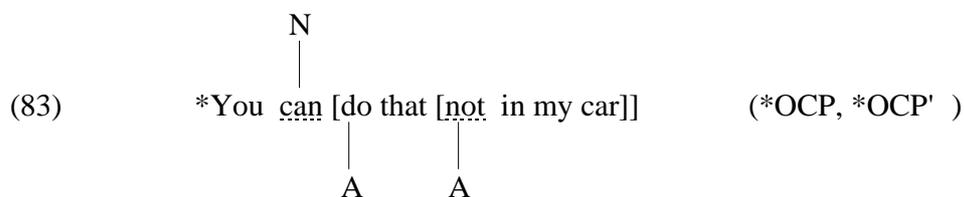
(82) [Pas une étudiante] n' est venue.
 [Not a student] not is come.

On the other hand, if a *not-* phrase is in the object side of the verb at the input, as in (83) (Williams 1994, (27f)), OCP and OCP' are violated and therefore the structure may not be acceptable. If *not* is moved outside its phrase, one would obtain (84a), which probably does not convey the desired nuance of meaning, in which the scope of negation should be limited to the PP. Put another way, (84a) is interpreted like a simple sentential negation and

²⁷ That is, (80a) is ruled out for the same reason as the structures in (i), given that *whom* and *him* are incompatible with the subject Case, as discussed for instance in Desouvrey (2001).

(i) a. *Whom saw Bill?
 b. *Him saw Bill.

therefore the interest of having a separate *not*- phrase is lost. If the whole *not*- phrase is fronted, OCP can be avoided (perhaps as well as OCP'), and a new meaning effect is possible. In effect, the scope of negation spans over the whole phrase, and this is indicated by the familiar movement under OCP' of the operator modal to the nearest edge of the negated phrase, as seen in (84b). This appears to materially indicate the scope of the negative morpheme: the scope of *not* is the segment delimited by *not* and the modal. Of course, two scopes are overlapped: the *not*- to-*car* scope of negation and the scope of the modal, which is prevalent in the main part of the sentence, hence the two possible readings pointed out by Williams. In (84a), however, since negation is incorporated into the modal, there cannot be two different scopes in the structure.



- (84) a. You can=not [do that [t in my car]]
 b. Not in my car =can you t' do that t
 c. *Not=can in my car you t' do that t

What these structures show is that sentential scope is the default scope, the one that is obtained under the natural interplay of the constraints. In order to obtain constituent scope, the relevant constituent must have some prominence. In the structure above, this is realized by fronting, which triggers subject inversion (actually modal movement). Movement of the modal should stop at the edge of the constituent, otherwise the motivation for such operations would disappear, i.e. the modal may not incorporate to negation, as seen in (84c).

Notice that prominence could be given to an element without subject inversion. Indeed if the negated constituent is clearly dislocated from the main part of the structure by a pause, no mechanism of inversion is needed, as illustrated in the following (Williams' (31)):

- (85) Not sad, John arrived.

Of course, if there is no pause the OCP' effect which is triggered by the two intervening elements *sad* and *John* between the verb and the negative must be settled. In this context the input must contain a dummy modal which moves to the edge of the *not-* phrase (lexical verbs cannot move), as discussed in Desouvrey (2000, 2001).

- (86) a. *Not sad John arrived.
 b. Not sad did John t arrive.

Clearly, *not* can modify a phrase in English, provided that constraints that arise from its feature specification can be settled. In French, *pas* can be used as a 'head' as well, and in such a case there is always an intonational pattern that distinguishes it from the rest of the structure, either a pause or some pitch movement on the negation ((87b) is Williams' (49), small capitals and gloss added).

- (87) a. Elle a acheté un bateau, PAS une voiture!
 She has bought a boat, not a car.
 b. Jean est arrivé [PAS heureux]
 Jean is arrived not happy.

As mentioned above, the pitch indicates the violation of a constraint, here OCP' much obvious in (87b). As can be seen in (88a), there is an OCP effect, because the *pas* -phrase is reinterpreted as being in the same domain as the verb; there is an OCP' effect as well, since both nominative-specified elements are not adjacent. The OCP' cannot be avoided, without losing the interest of having a negated phrase and therefore a pitch appears on the offending element, *pas*.

- (88) N N
 | |
 Jean est arrivé [PAS heureux]
 |
 A

To conclude, negation in both languages can be used with any type of phrase. In any case, the OCPs must be settled. In English, this is done by movement of the relevant elements, whereas in French a pitch movement or a pause is used instead. The reason why both languages are different is due to features and morpheme inventory: tensed verbs in

English, unlike their French counterparts, are operators, and unlike English, French does not have the equivalent of a dummy *do* in this context.²⁸

7. Towards a typology of negation

In the light of the present analysis, one can tentatively set up a typology of negation and the syntactic effect a negative morpheme may induce in various types of languages according to its feature specification. Table 1 shows features which may be found in negation crosslinguistically, namely N(ominative), A(ccusative), π and σ . The latter seems to be inherent to all genuine operators (as opposed to accidental operators like English modals), and therefore it is omitted in the Table. The symbol '+' in a cell indicates that the negative morpheme is specified for the feature of the column. The first column contains known and unknown language types, the latter being represented by letters, and the last column indicates known and possible effects of a particular distribution of features. Since negation interacts with verbs, the second column from the right indicates the state of the verb with respect to the only relevant feature, namely σ .

²⁸ It appears that the very appealing claim made by Grimshaw (1997) and others (see references in Grimshaw's) as to the appearance of *do* is induced by the interaction of constraints may not be completely true in the light of the present proposal. As seen above, languages vary with respect to features and inventory. A constraint that is violated in a language may be settled in another one. In Desouvrey (2001), it is shown that French interrogatives use a clitic doubling construction for the same reason that English uses a *do*-support construction. Under the claim that morphemes are created for the satisfaction of the constraints, as Grimshaw suggests, one would expect French to create a similar verb or English to have a pronominal clitic, which is not the case. In fact the strategy to settle constraint violation may vary even within a language; some French dialects do not use a clitic doubling, but instead what is traditionally referred to as a doubly filled complementizer. Also recall that as seen above OCP is violated in positive imperatives in French, whenever the complement is a clitic, because there is no host to lodge the clitic. In English negated imperatives, the OCP is violated in one input, but it is settled in an alternative input with *do*. Anyway Grimshaw does not present cross-linguistic evidence to support her claim.

Table 1. Typology of negation

Language/Neg	A	N	π	V- σ	Possible and known effects
A	+				R-to-L mvt of Negation
English	+			+	(a) and DO-support
C	+		+	(+)	No mvt, null-object, OSVN
French		+			L-to-R mvt to V
Spanish		+	(+)	(+)	No mvt to V, null-subject
F			+		N in either clause edge
G				+	Mvt to V
G			+	+	No mvt

In type-A languages negation would have the same syntax as English VP-adverbs and Romance object clitics: an OCP effect would trigger right-to-left movement of negation to the nearest element on the left side of the verb, and DO-support would not be needed, since no superiority effect is induced by its skipping over the verb. In type-C languages negation should first be generated on the right side of the verb and therefore an OCP violation would appear. Since the negative morpheme is π -specified, it may not move at all; if, in addition, the verb is a σ -operator SUP-C too would block its movement. It is likely that the only possible alternative to settle this conflict is to omit the object by systematically using a null-argument. The lexical object would be generated in the front of the clause, yielding an OSV(N) language (N for negation). Languages of the types F, G and H, in which the negative morpheme is Caseless, seem to be very unlikely. In type-F languages, negation would appear in either edge of the clause, just like an English sentential adverb like *yesterday*, nevertheless most likely on the left edge for reason of prominence. If the verb is a σ -operator, it will attract the negative morpheme (OCP' effect), unless the latter is π -specified.²⁹

8. Conclusion

This analysis of adverbs and negation in English and French is perhaps the clearest and the simplest that one can have. With three active constraints, namely OCP, OCP', and Sup-C, every aspect of the syntax of negation falls under predictable patterns. The type of

²⁹ Although such languages (types F-H) seem very implausible, I have no empirical reasons to rule them out at this point.

representation based on features and tiers is currently used in phonology and the fact it successfully applies to syntactic structure is a very welcome result. Therefore it may not be added in the overall cost of the analysis.

The main results are the following. Adverbs and negation in English are specified for accusative Case and therefore an OCP effect triggers their movement outside the initial domain they appear in. In the case of negation, movement is thwarted by the superiority condition, which forces an alternative derivation with *do*. (It appears that the use of *do* in interrogative and negative constructions are not triggered by the same cause (see Desouvrey 2001), a conclusion reached by Grimshaw (1997) on different grounds.) In French on the other hand, adverbs and negation are specified for nominative Case, and therefore they must adjoin to the verb in order to avoid either an OCP' effect or a crossing-lines effect. Unlike French and English, the negative morpheme in Spanish is specified for the feature π , which rules out its adjunction to another element in the structure. It is suggested that null-subjecthood is intended to avoid the OCP' and the crossing-lines effect. Thus *do*-support in English and null-subject in Spanish-like languages turn out to be related in some respect.

The analysis does not contain any ad hoc features and constraints. The OCPs and the superiority condition are independently needed to account for wh-movement and clitics in Romance. In fact it appears that almost all cases of movement in syntax are triggered by an OCP effect.³⁰ The type of adjunction advocated for appears to apply successfully elsewhere as well, and besides it is to be preferred on empirical and conceptual grounds. Possible incrimination may be made against the hypothesis that adverbs and negation are Case-bearing elements and the stipulation that tensed verbs in English are σ -operators. However, both claims are largely supported to the extent they allow to make correct and accurate predictions on the behavior of the elements bearing them. Moreover they are not peculiar to a particular grammar, as discussed above.

The overall theory appears to be highly restrictive. Once the features of relevant elements in the syntactic structure are known, the derivation runs on its own, so to speak, which leaves no room to alternative results. Language variation is reduced to feature and morpheme inventory in particular grammars. The OCPs may not be reranked, but they will be satisfied in some way or another in the structure.

Finally, this type of syntactic analysis is an important piece of evidence to be added in the syntax vs. phonology case. It is different from traditional generative phonology in that

³⁰ There is a case in which the OCP is not the main cause: movement of a relative pronoun to a position adjacent to its antecedent (cf. Desouvrey 1996, 1997).

extrinsically ordered derivations are done away, as well as from standard OT since it does not use extrinsically ordered constraints. However, the idea that syntactic methodology, as conceived of within the Principles and Parameters Theory, should be extended to phonological theory finds no further support; see Bromberger and Halle' s (1989) arguments against that view. The bundle of evidence obtained so far (see also Desouvrey 2000) rather shows that the traditional key traits of phonological theory, for instance the systematic use of features in order to distinguish various elements from each other and the necessity of derivation, which usually yield a high degree of deductiveness in the analysis, as discussed by Bromberger and Halle, are just suitable to account for syntactic phenomena, which is a very welcome result.

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