There is a class of verbs in French which require that their complement verb be in the indicative. However, if the matrix clause contains a negative or an interrogative, the complement verb is usually in the subjunctive, but sometimes in the indicative. Examples are the verbs "penser" and "croire" in sentences such as: 1) Elle ne croit pas que Jean est intelligent. and 2) Elle ne croit pas que Jean soit intelligent. Traditional grammar books usually offer confusing explanations of these facts, based on loose, impressionistic, quasi-semantic pronouncements, often contradictory in detail. It is the hypothesis of this paper that an explicit rule can be formulated to account for this class of verbs and that the facts of French are analogous to those of English which are accounted for by the rule of Negative Transportation. The problems inherent in such a position are considered here, and the conditions of the application of the Negative Transportation rule are examined.

(Author/PMP)
Negative Transportation in French

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There is a class of verbs in French which require that their complement verb be in the indicative. However, if the matrix clause contains a negative or an interrogative, the complement verb is usually in the subjunctive, but sometimes in the indicative. For example, the following are sentences of French:

(1)a. Elle croit que Max est intelligent. 'She believes that M. is intelligent.'

b. Elle ne croit pas que Max soit intelligent.

c. Elle ne croit pas que Max est intelligent. 'She doesn't believe that M. is intelligent.'

d. Croit-elle que Max soit intelligent?

e. Croit-elle que Max est intelligent? 'Does she believe that M. is intelligent?'

while the following is not a sentence of French:

f. *Elle croit que Max soit intelligent.

Traditional grammar books offer explanations like the following:

The Subjunctive is almost always placed after verbs used interrogatively or negatively, when doubt is expressed...This rule is far from being absolute..., the use of the mood depending rather on the doubtful meaning given to the sentence than on the form of the sentence itself.--Languellier and Monsanto

Verbs used negatively and interrogatively and implying uncertainty are followed by the subjunctive with the conjunction que; if there is no doubt in the mind of the speaker, the indicative is used...Je ne crois pas qu'il soit malade. I do not believe he is ill.--doubt of the strongest kind.--Chardenal

Similar statements are found in most grammar books of French. The descriptions or explanations are based on loose, impressionistic, quasi-semantic pronouncements, often contradictory in detail, which are of little or no help to the grammarian who wants to write explicit rules which generate all and only the sentences of French, each sentence corresponding, either derivatively or interpretively, to a semantic reading. It is the hypothesis of this paper that such an explicit rule can be formulated for sentences like those of (1) above, and that the facts of French which must
be accounted for are analogous to those of English which are accounted for by the rule of Negative Transportation. The problems inherent in such a position will be considered, and the conditions of the application of such a rule will be examined.

Negative Transportation, as discussed by Fillmore, George Lakoff, Robin Lakoff, Carden, Lindholm, Borkin, and others, was posited in an attempt to account for the fact that

(2)a. Sam doesn't believe that Lena will leave
is ambiguous, one of its readings being close to
b. Sam believes that Lena won't leave.

The semantic correlations are imperfect, as pointed out by Bolinger, in that (2a) shows an uncertainty in the mind of the speaker which (2b) does not. This is an uncomfortable fact, to which I shall return below, but which, for the time being, I am ignoring. It is clear that the rule does work to account for certain syntactic facts which are described in Robin Lakoff 1969, e.g.

(3)a. *Lena will leave until Tuesday.
   b. *Sam believes that Lena will leave until Tuesday.
   c. Lena won't leave until Tuesday.
   d. Sam believes that Lena won't leave until Tuesday.
   e. Sam doesn't believe that Lena will leave until Tuesday.

leave, like all point-action perfective verbs, cannot co-occur with until, whether or not it is an argument of believe, as shown in (3a,b). Negation, however, imperfectivizes the sentence, thereby permitting until to occur (3c,d). However, (c) occurs also, leading one to conclude that its source is something like (3d), of which it is a fairly close paraphrase, and that the Neg has been moved from the complement to the matrix S.

The second piece of syntactic evidence presented by Robin Lakoff concerns the reversed polarity of tag questions, as in:

(4)a. Lena will leave, won't she?
   b. Lena won't leave, will she?
   c. Lena will leave, will she?
   d. Lena won't leave, won't she?

(4a,b) show the expected reversed polarity and are acceptable. (4c,d), on the other hand, are not paraphrases of (4a,b), respectively, and are unacceptable with so-called normal intonation. However, we find also:
e. I don't suppose Lena will leave, will she?,
with normal intonation. The explanation offered is that (4e) is derived
from something underlying
f. I suppose Lena won't leave, will she?,
by Negative Transportation.

If we turn to French, we find the situation is different. In (3),
until would correspond to avant 'before', which lacks until's aspectual con-
straints, and French tag questions are different in structure from English.
However, there are other syntactic phenomena which can be accounted for if
we assume that Negative Transportation exists in French.

A. Negative Particles.

French has double negatives which consist of preverbal ne and postverbal
pas 'not', personne 'nobody', rien 'nothing', jamais 'never', etc. For example, we find:

(5)a. Pierrette n'a rien dit. 'P. didn't say anything.'
but not: b.*Pierrette a rien dit.
c. Je crois que Pierrette n'a rien dit. 'I think P. didn't say anything.'
but not: d.*Je crois que Pierrette a rien dit.
In addition, we find:
e. Je ne crois pas que Pierrette ait rien dit. 'I don't think P. said anything.'

To account for rien in the complement of (5e), we hypothesize that (5e) has
as its source something like (5c) and has undergone Negative Transportation,
by means of which Neg is moved or raised to the matrix S, becoming separated
from rien, which remains in the complement S. Note that the situation is
morphologically more complicated in French, as we get: a full ne...pas in the
matrix, although there was no pas overtly present in the complement.

However, (5e) is peculiar in another way, too--the complement verb is in
the subjunctive, and it would be unacceptable or at best marginal were it in
the indicative:

f.*?Je ne crois pas que Pierrette a rien dit,
in spite of the fact, pointed out at the beginning, that the indicative may in
fact occur following a negative:

g. Il ne croit pas que Dieu est bon. 'He doesn't
believe that God is good',
which, it turns out, is not a paraphrase of

h. Il croit que Dieu n'est pas bon (=méchant). 'He
believes that God isn't good (= evil)."

Whether the co-occurrence of the subjunctive and the raised Neg in (5e) is purely coincidental or not is not decidable on such limited evidence. We simply note for the moment that the following sentences containing stranded negatives, found in twentieth century novels, contain also subjunctive complements:

(6)a. "Je ne crois pas que ni elle, ni Robert, ni personne ait jamais pu sérieusement envisager cela comme possible." 'I don't believe either she or Robert or anyone could have ever seriously envisioned that as possible.'

b. "...je n'imagineis pas que leur critique portât sur rien d'essentiel." 'I didn't imagine their criticism bore on anything essential.'

Note that stranded negatives do not normally occur in the complements of verbs not belonging to this class, i.e. verbs which are not considered to undergo Negative Transportation:

(7)a. Elle a annoncée que personne n'était arrivé. 'She announced that no one had arrived.'

b. *Elle n'a pas annoncé que personne était arrivé.

c. *Henri n'a pas de l'argent. 'H. doesn't have some money'

B. Partitive.

The second piece of syntactic evidence for Negative Transportation in French concerns the partitive article. Briefly, the partitive article is composed of de plus the appropriate form of the definite article, as in:

(8)a. Henri a de l'argent. 'H. has (some) money.'

Following a negative, however, the partitive is simply de, as in:

b. Henri n'a pas d'argent. 'H. doesn't have (any) money.'

c. *Henri n'a pas de l'argent. 'H. doesn't have some money'

is acceptable only in rare contexts, and

d. *Henri a d'argent

is unacceptable. We do nevertheless find:

(9)a. Je ne pense pas qu'Henri ait d'argent. 'I don't think H. has (any) money.'
which suggests a source like

b. Je pense qu'Henri n'a pas d'argent. 'I think
H. doesn't have (any) money.'

Note that the following occurs also:

(10)a.?Je ne pense pas qu'Henri ait de l'argent.

b. Je ne pense pas qu'Henri a de l'argent,

but the following is unacceptable:

c.*Je ne pense pas qu'Henri a d'argent,

that is, with the subjunctive, both the full and the reduced partitive occur,
but, with the indicative, the reduced partitive yields an unacceptable sentence,
giving us further reason to conclude that the subjunctive may be a trace of a
raised negative.

Note also that reduced partitives do not occur in affirmative complements
of verbs not belonging to this class, i.e. verbs which are not considered to
undergo Negative Transportation:

(11)a. Il s'est rendu compte que je n'avais pas d'argent.

'I realized that I didn't have (any) money.'

but not:b.*Il ne s'est pas rendu compte que j'avais d'argent.

C. Negative Polarity Items.

George Lakoff and others have pointed out that there are certain expressions,
which may be called negative polarity items, which do not normally occur in a
simplex sentence without a negative, e.g.

(12)a. Louie won't lift a finger to help.

b. That rock won't budge.

but not: c.*Louie will lift a finger to help.

d.*That rock will budge.

However, we do find

(13) I don't imagine

a. Louie will lift a finger to help.

b. that rock will budge,

the obvious conclusion being that the sentences of (13) have undergone Nega-
tive Transportation. The situation in French is analogous in that we find

(14)a. Armande n'a pas dormi de la nuit. 'A. didn't sleep
at all.'

b. Dorante n'en peut mais. 'D. can do no more.'

c. Il ne veut pas d'elle. 'He doesn't want her',


but not:

(15)a. *Armande a dormi de la nuit.
b. *Dorante en peut mais.
c. *Il veut d'elle.

However, the following do occur:

(16)a. Je ne suppose pas qu'Armande ait dormi de la nuit. 'I don't suppose A. slept at all.'
b. Je n'imagine pas que Dorante en puisse mais. 'I don't imagine D. can do more.'
c. Je ne pense pas qu'il veuille d'elle. 'I don't think he wants her.'

(Examples a and c are found, in slightly different form, in de Cornulier 1973.)

Once again, the facts can be accounted for if we say that something like (17) underlies (16):

(17)a. Je suppose qu'Armande n'a pas dormi de la nuit. 'I suppose that A. didn't sleep at all.'
b. J'imagine que Dorante n'en peut mais. 'I imagine D. can do no more.'
c. Je pense qu'il ne veut pas d'elle. 'I think he doesn't want her.'

Another term which may be considered a negative polarity item is moindre: although it occurs in both negative and affirmative sentences, it has a different meaning in each:

(18)a. C'est la son moindre defaut. 'That is her smallest defect.'
b. Il n'en a pas la moindre idee. 'He doesn't have the slightest idea.'

Turning back to the twentieth century novels for examples, we find the following which have a reading usually associated with a negative:

(19)a. "Elle ne croyait pas qu'il eprouvat la moindre compassion." 'She didn't believe he felt the slightest compassion.'
b. "Sans doute n'imaginas-tu pas qu'il put y avoir le moindre peril." 'You probably didn't imagine there could be the slightest danger!'

which are explicable if we say that Negative Transportation has applied to them.
Note further that negative polarity items do not normally occur in affirmative complements of verbs not belonging to this class, e.g.

(20)a. J'ai oublié que Loulou n'avait pas dormi de la nuit. 'I forgot that L. hadn't slept at all.'

b.*Je n'ai pas oublié que Loulou avait dormi de la nuit.

If in fact Negative Transportation exists in French and accounts for the subjunctive following negative croire, penser, etc., we must ask what accounts for the subjunctive following an interrogative croire, penser, etc. Traditional grammar books are often most confusing on this point. For example, Duvivier states that, in the sentence

(21)a. Croyez-vous qu'il le fera? 'Do you believe that he'll do it?'

the indicative shows that 'in reality he will not do it', whereas Chardenal, in explicating the parallel sentence

b. Croyez-vous qu'il est malade? 'Do you believe that he is sick?'

states that the indicative shows that 'in reality, he is sick'. This confusion may stem from the fact that, when using the indicative, the speaker seems to be questioning only the opinion or belief of the hearer; the truth value of the complement is irrelevant (although some speakers I have surveyed claim they use this construction only when the complement is true and others only when it is false!).

In any event, one implication is that English, lacking a subjunctive-indicative distinction in analogous cases, has corresponding questions that are ambiguous, which in fact is the case:

(22) Do you believe that Sam is rich?

(22) may be a means of polling the hearer on his or her beliefs or else it may be a way of asking if Sam is rich, in the hearer's opinion. The distinction is clearer with wh- questions:

(23)a. When did you think Harry would die?

b. Why do you think Sadie is angry?

(23a) may be answered by either

(24)a.1. I thought so when I learned he had gingivitis,

or

2. I thought Harry would die next year,
and (23b) may be answered by either:

(24)b.1. I have that impression because she looks hostile
or:

2. She's angry, I think, because of the job market.

And, indeed, for those French speakers I have questioned who systematically distinguish between the subjunctive and the indicative, the first member of each pair in (24) would answer a question containing an indicative, the second a subjunctive. Thus it seems that the interrogative is analogous to the negative both syntactically and semantically and should, therefore, be accounted for in an analogous way. The natural consequence of such reasoning is that there exists in French, as well as in English, a rule of Interrogative Transportation which would move an interrogative from the complement to the matrix S when the higher verb belongs to the class containing croire, penser,... in French, think, believe,... in English. For those transformationalists who derive questions from underlying structures containing Q, an abstract question marker, this is perhaps a possible solution. The Q could be generated in the complement sentence and then moved to the higher sentence by such a transformation. In a generative semantics framework, however, as in a Harrisian transformational grammar, such a solution is not possible, since questions are derived from underlying structures containing a performatives of asking, and such performatives, being meaning-bearing predicates, cannot simply occur anywhere in the structure, preserving paraphrase. For example, (25a) would be derived following generative semantics from something underlying (25b):

(25)a. Croyez-vous que Paul est/soit malade? 'Do you believe that Paul is sick?'

b. Je vous demande (de me dire) si vous croyez que Paul est malade 'I ask you (request you to tell me) if you believe that Paul is sick',

and could not possibly have something underlying (26) as one of its sources:

(26) 3Vous croyez que je vous demande (de me dire) si Paul est malade 'You believe that I am asking you (requesting you to tell me) if Paul is sick',

since (25a) differs informationally from (26).

Another way of dealing with the facts is suggested by Harris' proposed source for yes-no questions, which is something underlying

(27) I ask you whether S or not S, which in fact permits two possible sources for (25a), each of which carries one and only one of the two readings of that sentence:
(28a). Je vous demande si vous croyez que Paul est malade ou si vous ne croyez pas qu'il est malade. 'I ask you if you believe that P. is sick or if you do not believe that he is sick.'

b. Je vous demande si vous croyez que Paul est malade ou qu'il n'est pas malade. 'I ask you if you believe that P. is sick or that he is not sick.'

(28a,b) differ from each other by the fact that, in the former, croire is included in the negation in S or not S, whereas, in the latter, it is not and may be called transparent with respect to the performative of asking. If we consider a verb that does not belong to the class of croire, penser, etc, for example, se rendre compte 'realize', we see that it lacks both the transparent reading and source:

(29)a. Vous rendez-vous compte que Paul est malade? 'Do you realize that P. is sick?'

b. Je vous demande si vous vous rendez compte que Paul est malade ou si vous ne vous rendez pas compte qu'il est malade. 'I ask you if you realize that P. is sick or you do not realize that he is sick.'

but not:

c. Je vous demande si vous vous rendez compte que Paul est malade ou qu'il n'est pas malade. 'I ask you if you realize that P. is sick or that he is not sick.'

We may account for this distinction either by adding a feature +TRANSPARENT to verbs like croire in structures underlying sentences like (28b), or, in a more revealing way, we may say that verbs like croire may occur in two different types of underlying structures, as shown in (30):

(30)a.
In (30a), the embedded S is dominated by the principal proposition and is, therefore, affected by interrogation of that proposition, in contrast to the situation in (30b), where the embedded S is not dominated by that proposition. Note that a structure like (30a) is not available for all verbs, e.g. *se rendre certaine* would have only an underlying structure like (30b).

Returning briefly to the negatives, we see that sentences like (1b,c) may be considered to have underlying structures as shown in (31a,b), respectively:

(31)a. 

```
S2
  /\   /
Prop2 x1  x2
  /\   /
  x1 croit S1 elle
     /
     Prop1 x2
     /\ Neg est Max
```

*Elle ne croit pas que Max soit intelligent. 'She doesn't believe that M. is intelligent' (transported reading)*

(31)b. 

```
S2
  /\   /
Prop2 x1  x2
  /\   /
  x1 Neg croit x2 elle
     /
     Prop1 x3
     /\ est intelligent Max
```

*Elle ne croit pas que Max est intelligent. 'She doesn't believe that M. is intelligent' (literal reading)*

The rule of Negative Transportation, then, may be said to operate only within a chain of domination of a proposition, as in (31a). If Neg is not dominated by the proposition that dominates *croire*, Negative Transportation will not apply, as in (31c):
Elle croit que Max n'est pas intelligent. 'She believes that M. isn't intelligent'

Syntactic evidence for such underlying structures is found in conjunctions like the following:

\[(32)\]a. Je ne crois pas que Guy est coupable, mais plutôt que la chose n'est pas claire. 'I don't believe that G. is guilty, but rather that the situation isn't clear'

Since what is zeroed in the second conjunct can be only \textit{je crois}, one might conclude that (32a) is derived from something underlying (32b):

\[b.\]Je crois que Guy n'est pas coupable, mais plutôt que la chose n'est pas claire. 'I believe that G. isn't guilty, but rather that the situation isn't clear'

That this is not the case is apparent. First, (32b) is not a paraphrase of (32a) and in fact may not even be acceptable. Second, we find also:

\[(33)\]a. Je ne dis pas que Guy est coupable, mais plutôt que la chose n'est pas claire. 'I'm not saying that G. is guilty, but rather that the situation isn't clear',

which cannot possibly be from

\[b.\]Je dis que Guy n'est pas coupable, mais plutôt que la chose n'est pas claire. 'I'm saying that G. isn't guilty, but rather that the situation isn't clear',

since (33b) is clearly not a paraphrase of (33a) and, further, 	extit{dire} is not a verb that is considered to undergo Negative Transportation. In fact, most complement verbs can occur in sentences like (33a), including \textit{apprendre} 'learn', \textit{décider} 'decide', \textit{découvrir} 'discover', etc., which do not undergo Negative
Transportation in the usual sense, e.g.

(34)a. Elle n’avait pas appris que Théodore était mort, mais seulement qu’il était absent. 'She didn’t learn that T. was dead, but only that he was absent',

which by no stretch of the imagination could be derived from

b. Elle avait appris que Théodore n’était pas mort, mais seulement qu’il était absent. 'She learned that T. wasn’t dead, but only that he was absent'.

Verbs like dire, apprendre, etc. occur only in structures like (30b), and the first conjunct of (33a) may be said to be derived from something like:

(35)a.

```
          S_2
         /   |
        /     |
       Prop_2 |
          /   |
         /     |
        x_1    x_2
          |
       dire Neg |
          |
         x_1
```

which would yield something like:

b. Je dis non pas que Guy est coupable (mais...). 'I’m saying not that G. is guilty (but...)',

which in turn yields, via a somewhat different instantiation of Negative Transportation:

c. Je n’é dis pas que Guy est coupable (mais...). 'I’m not saying that G. is guilty (but...)'.

Note that Neg is still transported only within a chain of domination: a Neg in Prop_1 would yield only:

d. Je dis que Guy n’est pas coupable. 'I’m saying that G. isn’t guilty'.

Further evidence for such an analysis is the fact that reduced partitives and negative polarity items occur only with difficulty in the first conjunct of sentences like (32a), e.g.

(36)a.?* Je ne crois pas qu’il vende d’autos, mais plutôt
qu'il vend des maisons. 'I don't believe that he sells cars, but rather that he sells houses.'

b. Je ne crois pas qu'il vend des autos, mais plutôt qu'il vend des maisons. 'I don't believe that he sells cars, but rather that he sells houses.'

c. Je ne crois pas qu'elle ait vraiment dormi de la nuit, mais plutôt qu'elle s'est reposée un peu. 'I don't believe that she slept at all, but rather that she rested a little.'

d. Je ne crois pas qu'elle a vraiment dormi, mais plutôt qu'elle s'est reposée un peu. 'I don't believe that she slept, but rather that she rested a little',

which supports the hypothesis that Neg, although obviously raised in (36), did not originate in the complement S. 4

To sum up, I have tried to show that there is substantial syntactic and semantic evidence for the existence of a rule of Negative Transportation in French. In addition, it was shown that this rule may apply only when Neg and the higher verb are dominated by the same proposition. For most verbs, such a structural description will intrinsically limit the application of the rule to the production of sentences like (33a). However, there exists also a class of verbs, e.g. croire, penser, imaginer, which occur in at least two structures, as shown in (30), and, when Neg is present in the lower S in a structure like (30a), the structural description of Negative Transportation is met also, and Negative Transportation may apply, yielding sentences like (31a), containing a subjunctive subordinate verb.

Such an analysis correctly predicts which verbs may undergo which types of Negative Transportation, and the verbs need not be so marked in the lexicon. Further, the difference in structure between (31a, b) may be said to account for the French grammarians' doubt vs. certainty distinction mentioned above, in that Prop₁ may be dependent on or independent from Prop₂. Lastly, the difference in meaning noted by Bolinger between the English equivalents of (31a, c) results, under such an analysis, from a corresponding difference in underlying structure. 5
Notes

1. A slightly shorter version of this paper was read at the LSA Winter Meeting, San Diego, California, December 29, 1973.

2. The following symbols will be used to indicate level of acceptability: * 'unacceptable', †, ‡, § 'marginal' (in ascending order), ○ 'not paraphrastic'. Unmarked sentences are considered to be acceptable.


4. The type of underlying structure used here, taken from McCawley 1970, was chosen on semantic as well as syntactic grounds. In sentences like

   a. Selma doesn't think IBM will split (although Jake thinks so),

   the first conjunct may be considered to contain one proposition, shown as:

   ![Diagram A]

   In contrast, in the first conjunct of

   b. Estelle doesn't believe (it) that men have walked on the moon (although Bea believes it),

   there are two propositions, shown as:

   ![Diagram B]
George Lakoff has suggested (personal communication) that another way of accounting for sentences like
a. I think it won't rain.
b. I don't think it'll rain.

is to say that both (a, b) have the same underlying structure, but that Negative Transportation has applied in (b), thereby making of it a 'hedged assertion'. Obviously, this requires a somewhat different format of the grammar from that which has been presupposed here.


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