The Structure of INFL and the Finite Clause in Finnish

Anders Holmberg  
University of Umeå

Urpo Nikanne  
University of Helsinki

Imeli Oraviita  
University of Tromsø

Hanne Reime  
University of Helsinki

Trond Trosterud  
University of Helsinki

INTRODUCTION

We will present a description of the finite clause in Finnish based on a version of GB Theory which crucially includes the following four hypotheses:

(1) a. morphological derivations directly reflect syntactic derivations, and vice versa (the Mirror Principle of Baker (1985, 1988));

b. functional categories, including inflectional affixes, may be heads (X*-categories) projecting a phrase;

c. every X^2 projects a phrase of the form [\(\text{x}_{\text{p}} (\text{spec}) \text{X}^2 (\text{complement}))\] (order parametrized);

(1c) is intended to exclude complex heads such as the traditional INFL of Chomsky (1981), which consists of Tense, AGR, possibly an auxiliary, and possibly other elements. We assume an X-bar theory with only one phrasal level (following Hellan (1989), Manzini (1988), among others), but this is not crucial: with some minor adjustments our theory is also compatible with the more standard two-level X-bar theory. Together, (1b,c,d) yield complex, multiheaded trees such as (4), below, well known from Pollock (1989) and many other recent works, sometimes referred to as the "Split-INFL Analysis".

---

* This paper is an outcome of discussions in the "Workshop on Finnish" carried out in the evenings of the Summer School on Comparative Syntax in Lund, June 1989, on the initiative of the indefatigable enthusiast Trond Trosterud. The paper was written before the publication of Mitchell (1991), where a theory of Finnish sentence structure is presented which is in several respects identical to our theory. The fact that we and Mitchell have independently arrived at highly similar theories of a phenomenon as complex as Finnish sentence structure is reassuring.

1 The most important consequence of assuming a one-level X-bar theory instead of a two-level one, is that (left-)adjuncts and specifiers are not distinguished configurationally: they will all be adjoined to a maximal phrasal projection. Aside from theoretical considerations for or against a one-level X-bar theory, there are empirical reasons why such a theory is well suited for Finnish. In particular, the "subject position" (Spec-IP, in GB terminology) is not as well defined in Finnish as in e.g. English or the Scandinavian languages (cf. Vilkama 1989). We will nevertheless use the term "specifier" and abbreviations like "Spec-VP", "Spec-PP", etc., to designate the position of arguments left-adjointed to a phrasal projection.
(1a) provides a powerful constraint on such syntactic representations: the relative order of the heads, and thereby the essential structure of the construction as a whole, mirrors the order of inflections in the inflected word which is the core of the construction, i.e. the verb in the case of finite clauses. The Head Movement Constraint (HMC) ensures that this is the case in both D- and S-structure.

Finnish provides an interesting testing ground for these hypotheses. Since Finnish is an agglutinating language, with a fair amount of inflection morphology and a fairly low degree of syncretism, the morphological structure of inflected words is more transparent than in fusional languages such as e.g. the Germanic or the Romance languages. The consequences of (1) for syntactic analysis are thus more transparent in Finnish than in these fusional languages. Another property of Finnish which makes it interesting in connection with the Split-INFL Analysis is that AGR (the subject-verb agreement element) is visibly separate from Tense and Mood in a certain construction type, namely negated finite sentences. This is because the negation element is inflected for agreement but not for tense or mood, as shown in (2):

(2) (Minä) e+n osta+isi sitä kirjaa.
    I   NEG+1SG buy+COND that book
    'I wouldn't buy that book.'

NEG is here inflected for subject agreement, while the verb is inflected for the Conditional, a category which, as we shall see, expresses both tense and mood. Thus Finnish provides direct evidence of "split INFL" of a kind which is not available in for instance Romance or Germanic.

It will be shown that an interesting theory of Finnish sentence structure can be constructed, based on (1a-d), which accounts, in a principled way, for a wide range of facts concerning the syntactic distribution of the negation, the auxiliary ote 'be', various forms of the verb, various types of sentence adverbs, agreement, and floating quantifiers, among other things.

Hypothesis (1b) implies a proliferation of heads and projections (Pollock 1989) proposed AGR/AGRP, T/TP, NEG/NEGp, for English and French; Chomsky (1991) adds a second AGR/AGRP (supposed to be AGR-O, i.e. object agreement); Ouhalla (1990) proposes ASP(ect)/ASPP. Such a proliferation threatens to empty the theory of empirical content, if it is not constrained in a principled manner. We assume the following constraint:

(3) A head-chain must have overt morphological realization.

This is in effect a constraint against abstract heads. The notion "chain" in (3) ensures that empty X° categories which are (properly licensed) traces of a moved X° category are allowed by the theory.2 A strong interpretation of (3)

---

2 Informally, a chain contains a category, called the head of the chain, and all its traces, if any. That is to say, a category not moved from its base position will be the head of a chain with only one member, a category moved once will head a chain with two members, etc. For a formal definition and discussion, see Rizzi (1986).
would exclude all phonologically empty heads of head-chains. A weaker interpretation would allow phonologically null instantiations of an X\^{}\circ category, provided the category has overt morphological form in some other instantiation(s). There are good reasons to think that there are instances of null heads in various languages, including Finnish, and hence we assume the weaker interpretation of (3).\(^3\)

The paper is structured as follows. First we present our analysis of the finite clause in Finnish, relating it to the internal structure of the inflected finite verb. Next, in sections 1.2.-1.6., we discuss the essential properties of each sentential head postulated. In section 1.7, we discuss the roles played by Tense and Mood in the finite clause; we claim that Mood, but not Tense, is crucially associated with finiteness, in Finnish. We will then present some empirical evidence in favour of the analysis proposed, from adverb placement and quantifier float. We will also show how agreement is handled within our theory. Finally we will discuss some curious facts regarding the scope of negation and adverbs, and suggest an account of them, within our theory.

1. THE STRUCTURE OF THE FINITE SENTENCE

1.1. Initial motivation: the structure of the inflected verb

We propose the following maximal expansion of the finite sentence in Finnish.

(4)
\[
\text{a. } \text{että kirja ei olisi ostettu}
\]
\[
\text{COMP book+PAR NEG+F be+COND buy+PASS+PST PTC}
\]
\[
\text{\textquote{that the book would not have been bought}}
\]

\(^3\) For instance, 3 sg. past indicative has null realization in Finnish:

(i)
\[
\begin{align*}
\text{a. } & \text{Pekka osti+Ø kirjan.} \\
& \text{Pekka buy+PST IND+3SG book}
\end{align*}
\]
\[
\begin{align*}
\text{b. } & \text{Pojat osti+vat kirjan.} \\
& \text{Boys buy+PST IND+3PL book}
\end{align*}
\]

Yet there are very good reasons to think that the 3 sg. indicative construction includes a head AGR, involved in case marking, among other things (cf. Reime (this volume)). This is compatible with (2) on the weak interpretation, since AGR is phonologically overt in most other finite verb forms. In contrast, the Mainland Scandinavian languages (Swedish, Danish, and Norwegian) do not have any morphological subject-verb agreement. Given (3), even on the weak interpretation, this entails that these languages do not have AGR/AGR\^{}P. Holmberg and Platzack (to appear) argue that the languages in question indeed have no category AGR. Obviously (3) also rules out AGR-O, proposed by Chomsky (1991) for English, since English has no overt morphological expression of object agreement.
For the sake of simplicity we have included in this tree only the sentential heads and their projections and, in addition, the moved object and its trace. We have not included possible intermediate argument positions. We will largely ignore here the leftmost periphery of the sentence, i.e. the portion preceding Spec-FP. F is where AGR, the subject-verb agreement element, is located (AGR is one of two possible expressions of F, as we will show). "F" is short for "finite", "T" for "Tense". "TM" is short for "Tense-Mood", a category expressing tense and mood.\(^4\)

The example sentence (4) includes every existing type of sentential head (from C down), and therefore requires maximal expansion of the sentence. (5) is an example of a minimal finite sentence. As will be discussed below, we assume that the subject (in active clauses) originates in a spec-position lower down the tree, being usually moved to Spec-FP in S-structure. For the sake of simplicity we have not represented traces of the moved subject here.

    you bought book

The NEG-projection is absent, since there is no negation. The AUX-projection is absent since there is no auxiliary. The PASS-projection is absent since there is no passive morphology, and the T-projection is also absent, there being no morphological representation of tense distinct from mood in this case. As can be seen, inflected verbs and other inflected heads are formed by head-movement

---

\(^4\) Alternatively the category TM might be called simply M(oood), since what we propose is that tense is an intrinsic property of mood (at least in Finnish).
to an inflectional head, sometimes in several steps. We assume the internal structure of the finite verb is (6):

(6)
```
  TM  F
  V   TM
  osta -i -i
```

The verb is first adjoined to TM, then the V+TM complex is adjoined to F (i.e. to the agreement affix, in this case). Head movement, we assume, conforms to the Head Movement Constraint (HMC). (7) is Travis's (1984) original formulation:

(7) An X° can only move to the Y° that properly governs it.

Essentially this means that a head can only move to the next head position up the tree, i.e. it cannot skip over a head (position). We also assume that the only way a head H can move to a position occupied by another head H' is by adjoining to H'. From this adjoined position H cannot move on (i.e. once attached it cannot be detached), but the complex head resulting from adjunction of H to H' may move, subject to the HMC; cf. Baker (1988: 53ff.) and Ouhalla (1990) for discussion.5

The preliminary motivation for the inventory of heads in (4), and their relative order/relative scope is provided by the following facts about Finnish verbal morphology. We exemplify with *oasta* 'buy'. We separate inflectional affixes with +. COND = conditional mood, C = consonant template.

(8)
```
a. osta (verb stem)
b. osta+a (V+INF)
c. e+t osta+C (NEG+2SG, V+PRES IND)
d. e+t osta+isi (NEG+2SG, V+COND)
e. osta+i+t (V+PST IND+2SG)
f. osta+isi+t (V+COND+ 2SG)
g. osta+TA+isi+Vn (V+PASS+ PST IND+ F(inite))
```

(realized *ostettailsin*)

The agreement/finiteness suffix (instantiated as a finiteness suffix without agreement in (8g)) is always outermost in a string of suffixes. We take this to be evidence that F/AGR is highest of the inflectional heads (the Mirror Principle). The negation, as can be seen, is inflected for subject-verb agreement

---

5 Following Rizzi (1990) the HMC can be regarded as a special case of Relativized Minimality, that is, the principle which in a configuration

(1) \( A \ldots B \ldots C \)

where A, B, and C are syntactic categories, prohibits relating A and C if B is a potential participant in the relation, and B is closer to C than A is, where closeness is usually defined in terms of c-command. Cf. Ouhalla (1990).
but not for tense or mood. This indicates that it is the second highest head. It
could not be base-generated lower than tense and mood, and move up to F,
without either moving via tense and mood, thus picking up these affixes on the
way, or else skipping over tense and mood, thus violating the HMC.

Note that the distribution of F/AGR in Finnish vindicates the Mirror
Principle: when realized separately from the other sentential-verbal inflections
in negated clauses, F/AGR is realized higher up the tree than the other
inflections; see (4) and (8c,d). When realized together with the other inflections,
F/AGR is the outermost morpheme; see (8e,f,g).

The passive inflection is the innermost inflectional morpheme, indicating
that it is the lowest of the sentential functional heads, and therefore the first
morpheme the verb is adjoined to "on its way up the tree". Between F and
PASS, morphologically and hence, according to the Mirror Principle, in the
syntax, are Tense and Mood, realized as an affix of the category we call TM.
Tense can also be realized independently of TM (as in (4)). When it does, it is
realized below TM, TM being realized on an auxiliary, and T on the main verb.

We will now outline the properties of each functional head in (4), starting
at the top, with F.

1.2. The category F

F is where AGR, the subject-verb agreement element is generated. F is short for
"finite", the implication being that finiteness is crucially associated with AGR

The reason for using F/FP instead of AGR/AGRP is not primarily
typographical elegance, but the fact that in all finite constructions there is an
AGR-like suffix independently of whether it agrees or does not agree with
anything. Finite clauses with no agreement in Finnish include passives, certain
modals with a "quirky" Case (genitive) suffix, constructions with the so-called
partitive subject, and existential/presumptive/possessive constructions. (Note
that there is no agreement in the Finnish passive even when the object of the
passive is preposed, unlike the situation in Germanic and Romance, for
example.) In these cases F is realized either as a 3sg suffix or in non-negated,
non-periphrastic passives, and also in the double passives of colloquial Finnish
(see footnote 13 below), as -vn (vowel lengthening plus -n). (9a,b) exemplify
part of the subject-verb agreement paradigm in the active past indicative, (9c)
the past indicative passive form, (9d) a modal, (9e) a construction with partitive
"subject", and (9f) a presentative construction:

(9)   a.   osta+i+n (realized ostit)
      buy+PST IND+1SG
      'I bought'

---

6 Holmberg and Platzack (to appear) argue that finiteness is associated with C, the
"complementizer position", in Verb Second languages, while it is associated with I(NFL) in
many other languages. Finnish, quite clearly, belongs to the latter group of languages. If we
are correct, finiteness (roughly in Holmberg and Platzack's sense) is more precisely located in
the part of I we call F.
The past indicative affix -\textit{t-} is followed by one of the agreement morphemes in active finite sentences, but by the invariant -\textit{n} in passive finite sentences. We assume an abstract category F, which has two realizations: one a pronoun-like (nominal) element AGR with six possible values (3 persons and two numbers), the other a morpheme which simply marks the clause as finite showing no agreement. The latter shows up either as an element identical to 3SG agreement or as -\textit{n}. We assume (following Reime (1986, this volume) that it is not nominal in the same sense as AGR.

The F position must be filled by a category moved there, on account of containing an affix which otherwise is left stranded.\footnote{There may be other reasons why F must be lexically filled; cf. Holmberg and Platzack (to appear).} Possible fillers/carriers of AGR/F are verbs, the auxiliaries \textit{ole} and \textit{tie}, both 'be', and the sentential negation, all of which are moved to F by head movement. In many languages AGR is always realized together with Tense (and Mood); this is the situation in the Romance and Germanic languages, for instance. In these languages the Split-INFL. Analysis can only be based on more or less indirect evidence. In Finnish we know that F/AGR is a category separate from Tense and Mood not only morphologically but syntactically as well, since AGR and Tense-Mood can be realized on separate words, that is, when the sentence contains the negation, the subject of next subsection:

\subsection*{1.3. The negation}

The sentential negation element (NEG) in Finnish has the stem form \textit{e-}, and is inflected for agreement, by means of (essentially) the ordinary verbal subject-verb agreement suffixes. The paradigm is given in (10).
We assume that NEG is a head with its own projection, the next head down from F. NEG obligatorily moves to F, adjoining to AGR, which yields the forms in (10)\textsuperscript{8}.

The assumption that NEG is base-generated in a position of its own, being moved to F instead of being base-generated in F, is a consequence of (1b,c). As already noted, the fact that that the surface form of the negation is inflected for agreement but not for tense or mood entails, given the HMC and the ban against detaching an adjunct of a head, that NEG must be base-generated below F, but above Tense and Mood. Tense and Mood are, instead, realized on the verb or the auxiliary plus the verb, as shown in (8c,d); an additional example including the auxiliary is given in (11):


you NEG+2SG be+PRES IND buy+PST book
"You haven't bought a book."

The alternative to the hypothesis that NEG is a head is (within the present general framework) that NEG is a specifier, more precisely a specifier of TM. We can see no reasons to prefer this alternative. For one thing, if NEG is an X° specifier, we have to allow for head-movement from spec-position (Spec-TP) to head-position (to AGR), in addition to the usual head-to-head movement. This is not inconceivable; for instance, it is compatible with the HMC. Nevertheless we would not want to allow for such a possibility unless there are definite empirical gains to be made by it, which seems not to be the case here.

Rizzi (1990) argues that e.g. English not is a specifier on the basis of the "inner island effects" which not seems to give rise to: for instance in (12b) not blocks the interpretation where the preposed adverbial is construed with the embedded clause. Thus, while (12a) is ambiguous, (12b) is not.

\textsuperscript{8} In a negated passive, the negation turns up in a form identical to 3SG.
NEG+F may move on to C, cliticizing to the complementizer etta 'that' or jess 'if', yielding the forms etten, etet, etc., and jotten, jollet, etc., respectively. The structure of the embedded clause in (i) is, roughly, (ii):

(i) Minä tullin [ettet sinä ostanut sitä kirjaa].

I know that+NEG you buy+that book

(ii) \{CP[ettet+ett],I\PP \{sinä I\PP \{NEG \PP \{TMF ostanut ...\}\]\}\]\]\]\}%

Alternatively forms like ettet in (i) are the result of phonological cliticization made possible when the subject is not moved as far as to Spec-PP, but remains in a lower argument position; cf. sections 2.3. and 2.4.

The inflected negation is, of course, excluded from non-finite clauses. Such clauses can be negated only by using a special negative participial suffix -minna (a T-element, in our theory).

(iii) Minä lupasin olla ostanut sinä kirjaa.

I promised to buy-NEG PART that book
"I promised not to buy that book"
(12) a. It is for this reason that I believe that John was fired.
   b. It is for this reason that I don’t believe that John was fired.

This can be explained as an effect of Rizzi’s Relativized Minimality (cf. fn. 5), provided that the negation is in an A’-position, i.e. a non-argument specifier position, since only an A’-element can block an A’-binding relation such as the relation between a topicaized or focused adverbial and its trace. Now it seems to us that negation in Finnish does not give rise to inner islands, in examples comparable to (12). Consider for instance (13):

(13) Sen takia/ryppyämisens takia minä en usko että Jussi sai potkut because-of-that/because-of-drinking I NEG think that Jussi got the-sack (vaan siksi että hän flirttäli pomonsa vaimon kanssa). (but because he flirted boss-his wife with)

Here the preposed adverbial may be construed with the embedded predicate, across the negation (the interpretation being “I don’t think Jussi was fired because of that/because of excessive drinking”). We will provide additional evidence of the head status of NEG in section 2.5 below.

1.4. The category TM

There are three morphological moods in Finnish (four if the imperative is included): indicative, conditional and potential.

(14) a. Sinä et osta+C sitä kirjaa. (indicative)
    you not buy+PRES IND that book
    ‘You won’t buy that book.’
   b. Sinä et osta+iisi sitä kirjaa. (conditional)
    you not buy+COND that book
    ‘You wouldn’t buy that book.’
   c. Sinä et osta+ne sitä kirjaa. (potential)
    you not buy+POT that book
    ‘You will probably not buy that book.’

We distinguish between indicative on the one hand, and conditional and potential on the other hand, labelling the former [-Mood] and the latter two

---

9 Cf. Ouhalla (1990) for an alternative account of negation and inner islands. Note that principle (3) rules out an analysis along the lines of the one proposed by Ouhalla (1990) for Swedish: according to Ouhalla, NBG in Swedish would be an empty head, of which the overt negation morpheme inte is a specifier. This is ruled out in the case of Swedish, since the postulated head NBG has no overt morphological manifestation. Extended to Finnish, Ouhalla’s (1990) theory would presumably assign to our NEG the status of a head, with an empty operator as specifier. This is not ruled out by (3) as it stands, but may be, if (3) is extended to all categories/chains.
The indicative has a present tense form (exemplified in (14a)) and a past tense form. The present tense form is a glottal stop (not represented in spelling). This glottal stop disappears when followed by an inflection (the relevant inflection being AGR). If it is word final but followed by a word beginning with a consonant, the glottal stop is realized as a doubling of this consonant. The past indicative form is -i when combined with F, otherwise -nut (we return to this dichotomy below). The conditional and the potential, on the other hand, do not have distinct tense forms. Following Reime (1986), we assume that the conditional and the potential are realizations of the feature [+Past] in conjunction with the feature [+Mood]. This gives us the following characterization of the relevant inflectional morphemes:\(^{11}\)

\[
\begin{array}{cccc}
-\text{C} & -\text{i} & -\text{ne} & -\text{isi} \\
-\text{Mood} & -\text{Mood} & +\text{Mood} & +\text{Mood} \\
-\text{Past} & +\text{Past} & -\text{Past} & +\text{Past}
\end{array}
\]

In support of the hypothesis that there is an intrinsic connection between the conditional and [+Past], consider the fact that many languages realize the conditional by a past tense form. For instance in English the auxiliaries can+Past = could, and will+Past = would function as conditional auxiliaries, and in Swedish the past tense form of the verb may be used conditionally: Om jag blev sjuk... 'If I became sick...' (i.e. 'If I were to become sick').

Another correlation, specific to Finnish, between the conditional and past indicative on the one hand, and the potential and the present indicative on the other hand, is that 3SG AGR is neutralized (is null) in the past indicative and in the conditional (Pekka ostiostaisi kirjan), while it is expressed as vowel-lengthening in the present indicative and in the potential (Pekka ostaa +aostane +e kirjan).

There is a special condition on the [-Mood, +Past] form -i, such that it only occurs in combination with F. We will here regard this as an accidental morphological property of -i. This means that it cannot co-occur with an auxiliary or the negation, as they prevent verb movement from TM to F; the form which is used instead is -nut.

     you not buy+i that book  

b. Sinä et ostanut sitä kirjaa.  
     you not buy+nut that book

V+nut is the form of the verb which is also used together with the auxiliary ole to form the composite tenses perfect and pluperfect:

\(^{10}\) An alternative would be [+ind] for the indicative, and [-ind] for the conditional and the potential. However, the feature [-Mood] expresses more naturally the fact that the indicative is the unmarked mood.

\(^{11}\) The features in (14) are purely syntactic (or morpho-syntactic). They do not account for the semantics of the moods. It is unclear (at least to us) whether there is any semantic connection between past time reference and the conditional mood, for instance.
(17) Sinä olet/olit ostanut sen kirjan.
    you are /were buy+nut that book
    ‘You have/had bought that book.’

Combining the negation and the auxiliary plus -nut gives a negated perfect or pluperfect.

(18) Sinä et ole ostanut sitä kirjaa.
    you NEG be buy+nut that book
    ‘You haven’t bought that book.’

Thus -nut can be used as an allomorph of [-Mood, +Past], and as a past participle. We may express this dual nature of -nut by ascribing to it the features [-Mood], +Past. Thus it may occur under TM as well as under T, the position of the participles and other non-finite verb forms (see (3)). In TM it contrasts minimally with the indicative nonpast, i.e. -C; in T it contrasts minimally with the nonpast participle suffix -va, which we assume is [-Past] but unmarked for Mood.

(19) -nut -va
    (-Mood) -Past
    +Past

The suffix -va occurs chiefly in combination with PASS, as in (20b); (20a) is archaic, interpreted as a future tense.

(20) a. Sinä olet ostava sen kirjan.
    you are buy+va that book
    ‘You are to buy that book.’

b. Nyt on ostettava se kirja.
    now is buy+PASS+va that book
    ‘Now that book must be bought.’

This theory accounts for the fact that you may have -nut instanced twice in a simple sentence (ollut is the auxiliary ole+nut). The analysis of the relevant portion of (21a) is (21b):

(21) a. Siinä vaiheessa sinä et ollut vielä ostanut sitä kirjaa.
    that point-INE you NEG be+nut yet buy+nut that book
    ‘At that point you hadn’t yet bought that book.’

b. [TP sinä [FP c1 [NEGP c1 [TMP [TM ole+nut] [AUXP c1
    [TP [T osta+nut] [VP cK sitä kirjaal]]]]]]
1.5. The auxiliary

The auxiliary in Finnish is *ole* ‘be’ and its suppletive form in the potential mood *tie*. Like e.g. English *be*, *ole* can also be used as a copular verb, forming primary predicates together with AP or predicative NP (*Pekka on rikas* ‘Pekka is rich’), or as a locative verb taking a PP or an NP in a locative case as its complement. Unlike *be*, but like English *have*, *ole* is used together with the past participle to form the perfect and pluperfect tenses (cf. (17)), that is to say, it takes TP as complement. Is auxiliary *ole* a category distinct from main verb *ole*? Is it anything more than a semantically empty verb taking TP as complement, as an alternative to NP or AP? One piece of evidence that auxiliary *ole* is a different sort of category/projects a different sort of phrase than “main verb” *ole* is that auxiliary *ole* is excluded from many kinds of non-finite complements where main verb *ole* is permitted:

(22) a. Marjan pitäisi [olla hiljaa].
    Marja+GEN should be quiet
b. *Marjan pitäisi [olla ostanut sen kirjan].
    Marja should be buy-nut that book
c. Marja saattaa [olla vakoillija].
    Marja may be (a) spy
d. *Marja saattaa [olla ostanut sen kirjan].
    I believed Marja+GEN be+PRTC (a) spy
c. *Minä luulin [Marjan olevan vakoillija].
    (22a-d) exemplify infinitival complements, (22e,f) exemplify a type of participial complements (discussed briefly in section 1.7., below). Auxiliary *ole* is excluded from all these constructions. (22b,d,f) are not excluded for semantic reasons: the auxiliary is possible in finite paraphrases of these constructions. Compare, for instance, (22d) and (23):

(23) Saattaa olla [että Marja on ostanut sen kirjan],
    may be that Marja is buy-nut that book
    ‘It may be the case that Marja has bought that book.’

We can account for (22) as follows. First, we postulate that the non-finite complements in question are TPs (where T has the value [-Tense] in the infinitivals and [+Tense] in the participial constructions; cf. section 1.7. below), and that the matrix verbs in question are subcategorized to take TP complements. Second, we postulate that auxiliary *ole* projects a category AUXP. Then (22b,d,f) are ruled out because they do not satisfy the subcategorization requirements of the matrix verbs. This is, admittedly, a somewhat shallow account of the facts in question. A real explanation would presumably be based on the syntactico-semantic properties of the auxiliary and
the category it projects: it may involve the notion of aspect; for instance. We leave open the exact categorial status of AUX/AUXP.

1.6. The passive

We assume the passive element (PASS) is a head, generated between T and V. As mentioned, the initial motivation for assigning PASS to this position is that it is the innermost of the sentential inflections. The alternative is that the passive morpheme is Spec-VP, in complementary distribution with a subject (external argument). This, too, may account for the morphological position of the passive morpheme, given that the verb can move first to its own Spec-position, picking up PASS, then moving on from there to higher head positions.

The passive is too complex an issue to be treated here in any detail, and we will, by and large, disregard it in the rest of the paper. It does not matter a great deal, therefore, which of the two analyses we choose here. Note, however, that the Spec-analysis requires allowing movement of a head to its own Spec-position (alternatively lowering of an X specifier to its head). The following properties of the passive can be adduced in in support of the head-analysis, favoured here.

First, the passive verb form may have an overt subject in (colloquial) Finnish, namely the 1PL pronoun me:

(24) a. Ostettiin kirja.
     bought-PASS book
     'A book was bought.'

b. Me ostettiin kirja.
     we bought-PASS book
     'We bought a book.'

(24b) has a clearly active meaning; this is how 1PL active is normally expressed in colloquial Finnish. Still, the verb form is clearly passive, morphologically and in certain important respects syntactically; see Reime (this volume). (24a) is, in fact, ambiguous between the passive reading given, and the 1PL active reading, that is to say, it may be a pro-dropped version of (24b).

Second, the passive affix also appears in certain participial constructions together with a subject, which, of course, is unexpected if PASS is itself the subject. The morphological structure of the participle ostettuani in (25a) is given in (25b); the subject is here realized as a possessive suffix (cf. Trosterud (this volume)):

---

12 Ouhalla (1990) proposes that auxiliaries in English and French are language-specific instances of a category ASP, projecting an ASPP. This hypothesis could be extended to ole. It may be worth noting, however, that the evidence mentioned (discussed in section 2.2.) indicates that this is an optional category of the sentence. In other words, if the auxiliary is not overtly realized, there is no ASP/ASPP.
Holmberg, Nikanne, Oravilta, Reime, Trosterud

(25) a. Ostettuani kirjan, minä lööin kotiin.

'Having bought the book, I went home.'

b. ostu+ttu +a +ni
derive+[PASS,+PST]+PAR+P1SG

(The morpheme-\textit{ttu} is the passive form of the past participle, the active form of which is \textit{-nut}; that is to say, \textit{ttu} is \textit{TA+nut}. The form is hardly a case of agglutination, though. \textit{PAR} = partitive case).

Third, the passive cannot take an agent phrase.

(26) Kirja luettiin (*Marjalta).

book read-PASS Marja-ABL

'The book was read by Marja.'

This is all compatible with the hypothesis that the passive verb form has a "regular" external argument which, when not overt, as in (24b) and (25), is an empty pronoun (i.e. \textit{pro}), which is interpreted as if it were a variable bound by an existential quantifier meaning "some unspecified person(s)", or in colloquial Finnish as IPL. The agent phrase in (26) is then excluded since there can only be one external argument. If this is on the right track, then \textit{PASS} is not itself the external argument, but, we assume, a head licensing an empty external argument position, with a particular interpretation.\textsuperscript{13}

1.7 The finiteness-mood connection

As can be inferred from (4) and (5), above, the only obligatory sentential heads in a finite clause in Finnish are F and TM. That is to say, Mood appears to be a crucial element of a finite clause.

There is little doubt that Tense, in the sense of a feature \textit{[\textit{\texttt{ePast}}]}, may occur independently of finiteness, in Finnish. Consider for instance the bracketed constructions in (27), exemplifying a participial clause type.

\begin{itemize}
\item \textsuperscript{13} Cf. Li's (1990) analysis of the passive morpheme in some languages as a kind of verb. Another property of the Finnish passive which may be noted in support of the head analysis over the external argument analysis is that so-called ergative verbs, i.e. verbs which characteristically lack an external argument, may be passivized in Finnish (unlike the situation in many other languages):
\begin{enumerate}
\item Tullitin liian yöllä.
\end{enumerate}
\begin{itemize}
\item cener-PASS+PAST too late
\item 'People/we came too late.'
\end{itemize}

Another interesting property of colloquial Finnish is that the passive morpheme may be instantiated twice in the same simple clause: once on the auxiliary and once on the main verb:
\begin{enumerate}
\item Sjellä olitin.
\end{enumerate}
\begin{itemize}
\item jiec+PASS+PST too much
\item 'People had been drinking too much there.'
\end{itemize}

In Standard Finnish only the main verb can bear the passive morpheme. The possibility of a doubled passive may not be unproblematic under the head analysis, either, but it seems more problematic under the external argument analysis: surely one of the best established syntactic generalizations is that there can be at most one external argument per (main) verb.
    'She said that Jussi has bought a book.'

b. Hänen kertoi [Jussi+n osta+va+a+n kirjan]. she told Jussi+GEN buy [-Past]+ACC book
    'She said that Jussi would buy a book.'

The morphemes in bold type are (allo)morphs of the participial affixes -nut and -va, which, as discussed above, are defined (in part) by the feature [±PST]. This shows clearly that Tense may occur as a part of a non-finite construction, and that, hence, finiteness and Tense are two different things. This hypothesis is crucial in Holmberg and Platzack (to appear), where it is argued that the category F is located in C in Scandinavian (and Verb Second languages in general), while Tense is located in I (cf. also Stowell (1981, 1982)). In Holmberg and Platzack's theory of Scandinavian, F and Tense are both obligatory elements of every finite clause, in the languages they discuss. But the Finnish facts indicate that the presence of F and Tense, in the absence of Mood, is not sufficient to make a well-formed finite clause, at least in Finnish. Consider (28):

(28) *Sinä eht osta+va kirjaa.
    you NEG+2SG buy [-Past] book

The construction contains, in addition to AGR, the [-Past] affix -va. The sentence is hopelessly ungrammatical. What is required apparently, in addition to AGR (or more generally, F) is a category instantiating the feature [±Mood], e.g. as in (29a,b):¹⁴

    you NEG+2SG buy [-Mood, -Past] that book

b. Sinä eht osta+isi sitä kirjaa.
    you NEG+2SG buy [+Mood, +Past] that book

c. Sinä eht osta+nut sitä kirjaa.
    you NEG+2SG buy [+Mood, +Past] that book

Another way of putting it is that finiteness, now in a more abstract sense, requires the presence of two distinct categories in Finnish: F (with or without agreement) and Mood.

---

¹⁴ This claim is, of course, contingent on our analysis of -nut in negated past indicative clauses such as (29c) as being [-Mood, +Past]. (29c) contrasts with (i), where -nut is unmarked with respect to Mood.

(i) Sinä olet ostanut sen kirjan.
    'You have bought that book.'

In this case the auxiliary heads TMP, realizing the features [-Mood, Past].
2. SOME EMPIRICAL CONSEQUENCES

2.1. Adverb placement and verb movement

One of the central claims in this paper is that verbs in Finnish undergo movement from a base-position under VP to an INFL-type position outside VP. This sort of movement has been argued to apply in a large range of typologically diverse languages, including the Germanic languages, the Romance languages, the Kru languages discussed by Koopman (1984), and Welsh, Irish, and possibly other VSO languages (cf. Sproat (1985)). Some of the most important evidence of such movement, in particular in SVO languages, is based on the relative order of the finite verb and various sentence adverbs. Such evidence is present in Finnish as well, as we will show. In the seminal work of Pollock (1989), the distribution of adverbs also provides crucial evidence for the existence of more than one sentential (INFL-headed) projection outside VP in French and English. We will show that this is the case in Finnish, too, although the status of the adverb placement facts is slightly different in Finnish, as compared with these languages. We take it to be established, independently of facts concerning adverb placement, that Finnish has INFL split in at least two positions: F and TM. We have put forth the hypothesis that there are potentially four more sentential heads with projections: NEG, AUX, T, and PASS. We will examine to what extent adverb placement can provide evidence in favour of this hypothesis. We will show that given certain reasonable (but certainly not incontrovertible) assumptions it provides evidence of NEG/NEGp and T/TP.

There are two types of verb movement in Finnish. One of them is relatively uncontroversial as far as its existence is concerned. This movement is exemplified in (30):

(30)  a.  Ostopa Jussi sen kirjan?
        bought-ep Jussi that book
        ‘Did Jussi buy that book?’
    b.  Olenpas minä ostanut sen kirjan.
        have-FOC I bought that book
        ‘I have, indeed, bought that book.’

The effect of this movement is that of questioning or focusing the verb. In the former case the verb has the question particle -kO attached to it, in the latter case, normally, a focus-particle -haN or -pA(s). It is an instance of a more general phenomenon of focusing (questioning being a special case of focusing) by movement to the front: not just verbs, but any category compatible with focus may undergo this movement with affixation of the question- or focus-particle.

(31)  a.  Senkä kirjan Jussi osti?
        that-Q book Jussi bought
        ‘Was it that book, that Jussi bought?’
b. Viime vuonna minä sen kirjan ostin.
last year-FOC I that book bought
'It was last year I bought that book.'

The verb movement exemplified in (30) is an "A-bar type" of verb movement, related (in this respect) to verb-focusing-by-movement in the Kru languages discussed by Koopman (1984) (who proposes a distinction between A-movement and A-bar movement in the case of verb movement), and Källgren and Prince (1989) for Yiddish. The precise landing site of the movement is a tricky question which we will not be concerned with here. For our purposes it is sufficient that the verb "moves to COMP" in the traditional sense (i.e. it may adjoin to C, or land in Spec-CP, among other possibilities).

More controversial is the claim that Finnish also has verb movement of the "A-movement type" (in Koopman's (1984) sense), that is movement out of VP to a functional head position between the subject (the S-structure subject position) and VP. Reasonably direct evidence of such movement is provided in SVO languages (such as French, English, or Icelandic) by the relative order of the finite verb or auxiliary and various sentence adverbs. Consider, for instance, French:

(32) a. Jean a évidemment parlé anglais.
Jean has obviously spoken English
b. *Jean a parlé évidemment anglais.
c. Jean parle évidemment anglais.
Jean speaks obviously English

The finite verb form (in bold type) must precede the sentence adverb évidemment, while the non-finite (participial) form must follow it. This is accounted for if évidemment, like other sentence adverbs, is obligatorily positioned outside VP (more precisely, outside the category headed by the participial form of the verb, which is VP in standard descriptions), and if the finite verb has to move out of VP, to a position preceding the sentence adverb(s). Given the INFL-hypothesis, that is the hypothesis, first proposed by Chomsky (1957), that verbal inflections are base-generated outside VP, the favoured description is that the verb (main or auxiliary) moves to the position(s) of the inflection(s), and that this is how the merger of verb and inflections is achieved, in these languages. A pattern similar to the French one in (32) can be seen in Finnish, as well:

---

15 It is notable that verb focusing is possible also in embedded contexts, but not for instance NP focusing:

(i) Tiedätkö, [ostiko Jussi sen kirjan]?
do-you-know bought-Q Jussi that book
(ii) *Tiedätkö, [senki kirjan Jussi osti]?
do-you-know that-Q book Jussi bought

This suggests that the verb lands in C (adjoins to C), while the NP lands in a higher position (Spec-CP), which is not available in embedded clauses.
Holmberg, Nikanne, Oraviita, Reime, Trosterud

(33)  a. Jussi on ehkä ostanut sen kirjan.
    Jussi has perhaps bought that book

   b. *Jussi on ostanut ehkä sen kirjan.
   c. Jussi ostaa ehkä sen kirjan.
    Jussi buys perhaps that book
    'Jussi will perhaps buy that book.'

Again, we can account for this pattern if ehkä is obligatorily positioned outside the category headed by the participial form of the verb, and the finite form is the result of movement of the verb or auxiliary to the position(s) of the finite verb inflections, also outside this category.

A potential problem is that the construction exemplified by (33b) is, in fact, at least marginally acceptable under certain conditions, which are not fully understood. Typically, the order is acceptable when the object is focused, as in (34):

(34) Jussi olisi ostanut ehkä SEN kirjan, mutta varmaan ei TÄTÄ.
    Jussi be=COND buy+nur perhaps that book but surely NEG this
    'Jussi might have bought THAT book, but surely not this one.'

We do not have any good explanation why focusing has this effect on adverb placement. We will, however, come back later to the problem posed by the relatively free positioning of adverbs in Finnish, and we will show that the possibility of a word order as in (34) is compatible with our theory. For the moment it is sufficient to note that there is a clear contrast between (33a,c) on the one hand, and (33b) on the other hand, in that the latter requires a special focusing pattern (indicated by stress and intonation) to be acceptable.

2.2. Two types of sentence adverbs

The following is a rough, but for our purposes adequate, classification of sentence adverbs in Finnish (following Holmberg 1989). There are two classes, which we call Adv1 and Adv2, respectively. Adv1 includes what you might call modal, or epistemic adverbs, while Adv2 includes time, frequency and degree-related adverbs. Some representatives are listed in (35):

---

16 It does not seem correct to say that the adverb has "NP-scope" in (34), i.e. scope only over the object NP. Clearly, adverb plus NP do not form a constituent. They cannot, for instance be moved together. Nor does it seem correct to say that it has VP scope. The LF of the relevant part of (34) is rather something like (i) (ignoring the conditional):

   (i) For x = that book (PERHAPS (Jussi has bought x)).

That is to say, the adverb has sentential scope, which somehow is made possible by the focusing of the object, even though the adverb is situated way down inside the sentence (adjoined to VP, as we shall claim) in S-structure.
The Structure of INFL

(35) **Adv1**

<table>
<thead>
<tr>
<th>Varnaan</th>
<th>‘surely’</th>
</tr>
</thead>
<tbody>
<tr>
<td>ehkä</td>
<td>‘perhaps’</td>
</tr>
<tr>
<td>näköjään</td>
<td>‘evidently’</td>
</tr>
<tr>
<td>kai</td>
<td>‘probably’</td>
</tr>
<tr>
<td>ilmeisesti</td>
<td>‘obviously’</td>
</tr>
</tbody>
</table>

**Adv2**

<table>
<thead>
<tr>
<th>aina</th>
<th>‘always’</th>
</tr>
</thead>
<tbody>
<tr>
<td>pian</td>
<td>‘soon’</td>
</tr>
<tr>
<td>usein</td>
<td>‘often’</td>
</tr>
<tr>
<td>koskaan</td>
<td>‘ever’</td>
</tr>
<tr>
<td>kokonaan</td>
<td>‘completely’</td>
</tr>
</tbody>
</table>

Adv1 can have scope over the entire sentence (i.e. at least over FP; we will later suggest that they must have FP scope), while Adv2 cannot: Adv2 always has narrower scope than Adv1. This is indicated by the fact that their relative order, when they occur together, is obligatorily Adv1-Adv2:

(36) a. **Pekka ei ehkä aina tahdo olla yksin.**
    Pekka NEG perhaps always want be alone
    ‘Perhaps Pekka doesn’t always want to be alone.’

b. *Pekka ei aina ehkä tahdo olla yksin.

Taking *ehkä* ‘perhaps’ and *aina* ‘always’ as representatives of the two classes of adverbs, we get the following pattern of distribution in a structure including all INFL-elements except PASS, i.e. F, NEG, TM (here Conditional), AUX, and T:

(37) a. **Ehkä Pekka ei olisi valittanut siitä (jollei...)**
    perhaps Pekka NEG be+COND complain+nut it+ABL (if-not...)
    ‘Perhaps Pekka wouldn’t have complained about it (if...not...)’

b. Pekka *ehkä* ei olisi valittanut siitä

c. Pekka ei *ehkä* olisi valittanut siitä

d. Pekka ei olisi *ehkä* valittanut siitä

e. (*)Pekka ei olisi valittanut *ehkä* siitä

(38) a. **Aina Pekka ei olisi valittanut siitä**
    always Pekka NEG be+COND complain+nut it+ABL
    ‘Pekka wouldn’t always have complained about it’

b. *Pekka aina* ei olisi valittanut siitä

c. Pekka ei aina olisi valittanut siitä

d. Pekka ei olisi aina valittanut siitä

e. (*)Pekka ei olisi valittanut aina siitä

(The (e) sentences are, again, more or less acceptable given the marked focus pattern in (34)). One generalization which emerges from these data is that the adverb *aina* cannot occur in the “left periphery” of the sentence. This holds true of Adv2 in general. (39) shows that this is not (only) a question of relative scope of adverb and negation in (38):

(39) a. *Pekka aina on valittanut siitä.
    Pekka always has complained about-it

b. Pekka on aina valittanut siitä.
This generalization requires some qualification, though: aina, and several other Adv2 adverbs, e.g. pian ‘soon’, may, in fact, occur sentence initially, as in (40):

(40) a. Aina sinä olet myöhässä.
    always you are late

b. Pian Pekka on lukenu
   kaikki nämä kirjat.
   soon Pekka be read+nut all these books

However, in this case the adverb is focused, or at least, is moved to a position outside FP, the position which is also the landing site of focused or topicalized phrases, i.e. Spec-CP, in the framework we assume. This is shown by the fact that while (37a) accepts another fronted (focused or topicalized) phrase, (40a,b) do not:

(41) a. Siinä tapauksessa ehkä Jussi ei olisi valittanut.
    in-that case perhaps Jussi NEG be-COND complain+nut
    "In that case perhaps Jussi wouldn’t have complained."

b. *Nykyään aina sinä olet myöhässä.
    nowadays always you are late

c. *Kaikki nämä kirjat pian Jussi on lukenu.
    all these books soon Jussi be read+nut

We propose that the adverbs aina and pian in (40) are in Spec-CP, binding a trace inside FP, where the trace determines their scope (qua adverbs; insofar as they are focused, their "focal scope" is determined by their S-structure position in Spec-CP). Thus we maintain that Adv2 cannot take scope over FP.

After these preliminaries, consider (42) and (43), where (42a) = (38c).17

(42) a. Jussi ei aina olisi valittanut siitä
    Jussi NEG always be-COND complain+nut it+ABL
    ‘Jussi wouldn’t always have complained about it.’

b. *Jussi aina olisi valittanut siitä

c. Jussi olisi aina valittanut siitä

(43) a. Jussi ei aina valitissi siitä

17 The status of the (b) sentences in (42), (43), and (39a) is somewhat unclear. As discussed in Holmberg (1989) the word order they exemplify is acceptable under certain conditions. The generalization proposed in Holmberg (1989) is that it is acceptable precisely when C is filled. This covers embedded clauses and clauses where a category is focused by fronting:

(i) Lumiseko [etä Jussi aina olisi valittanut siitä]
    Do-you-believe that Jussi always would have complained about it

(ii) Sitten minä aina olen sanonut.

Holmberg (1989) proposed that a filled C made possible lowering F (Affix Hopping) to the next head down, which yields the word order in (i) and (ii) when the adverb is adjoined to (the equivalent of) TMP. We will not take a stand on this issue here. For our purposes it is sufficient to note that there is a fairly clear difference in acceptability between the (a) and (c) sentences on the one hand, and the (b) sentences on the other, in (42) and (43).
b. *Jussi aina valittaisi siitä
  c. Jussi valittaisi aina siitä

Remember that we have assumed that it is characteristic of Adv2 that they cannot take scope over FP; this accounted for the ungrammaticality of (38a,b). The theory of scope we assume is that of May (1985) (cf. also Chomsky (1986)). According to it, an adverb will have scope over FP if it is adjoined to FP or to the phrase which is the complement of F, that is NEGP, or in the absence of NEG/NEGP, TMP.\footnote{\label{footnote}Formally:}

\begin{enumerate}
\item \( \alpha \) as scope over \( \beta \) iff \( \alpha \) m-commands \( \beta \).
\item \( \alpha \) m-commands \( \beta \) iff \( \beta \) is dominated by \( \gamma \), where \( \gamma \) is the first maximal projection every segment of which also dominates \( \alpha \), and \( \beta \) is not dominated by \( \alpha \).
\end{enumerate}

Thus, in the configuration (44a) the adverb \textit{aina}, although it is adjoined to TMP, has scope over FP, since FP is the first maximal projection of which every segment (in the sense of May (1985)) dominates \textit{aina}.

Thus, in (44a), the adverb, although it is adjoined to TMP, has scope over FP.

\begin{enumerate}
\item \([FP \ Jussi \ [F \ olisi]\ [TMP \ aina \ [TMP \ e_i \ valittanut \ siitä]]])
\item \([FP \ Jussi \ [F \ olisi]\ [TMP \ e_i \ [AUXP \ aina \ [AUXP \ e_i ...]]]])
\end{enumerate}

The analysis, therefore, cannot be as in (44a): the adverb must be adjoined lower down in the tree, for instance to AUXP, as in (44b), or to TP. Now in (42a) and (43a) the word order tells us that the adverb is between F and TM, i.e. it cannot be adjoined lower than to TMP. This is possible, however, in this structure given that NEG is a head, projecting a phrase NEGP, between TMP and F. In (45), which is the analysis we assume of (42a), the adverb adjoined to TMP has scope over NEGP but not over FP.

\begin{enumerate}
\item \([FP \ Jussi \ [FP \ e_i \ [NEGP \ [NEG \ e_i] \ [TMP \ aina \ [TMP \ valittaisi ...]]]]])
\end{enumerate}

Without the assumption that NEG is a head projecting a NEGP we could not maintain the theory of adverbial scope as sketched here.

Adverb placement also provides some evidence of a category TP distinct from VP. First, the fact that (46) is well formed is evidence that some Adv1 adverbs may adjoin to TP; as noted in section 1.5., we assume that non-finite clauses are TPs.

\begin{enumerate}
\item Minä luulin [Jussin ehkä ostavan tämän kirjan].
  I believed Jussi+GEN perhaps buy+V+ACC this book
  `I thought that Jussi would perhaps buy this book.'
\end{enumerate}

(47) is acceptable, too, but crucially with the marked intonation and (hence) reading discussed in connection with example (34).

(47) Minä luulin [Jussin ostavan ehkä TÄMÄN kirjan]
Given the assumption that there is a category T/TP distinct from V/VP, and that the verb moves from the V-position to the T-position, we may analyze (47) as having *ehkä* adjoined to VP. The structure would be (48):

(48)  \[ \text{TP Jussin } [\text{TP } [\text{T ostavan}]] [\text{VP *ehkä } [\text{VP ei } \text{tämän kirjan}]]] . \]

Similarly, finite constructions like (34) would have the adverb adjoined to VP, which yields the reading discussed (cf. footnote 16). Without the "T/TP hypothesis" it seems difficult to propose an analysis for (47) and (34) which does not violate well-established principles. Presumably we do not want to place the adverb between the verb and its complement NP in D-structure, since this would either violate binary branching or the sisterhood condition on the head-complement relation (cf. Kayne (1984: introd.)). We also cannot very well analyze the construction as arising through movement of the object NP rightwards, over an adverb adjoined to the right of VP or some higher projection. This is because Adv1 cannot adjoin to the right of the predicate (except in some cases when preceded by a comma break):

(49)  *Jussi on ostanut tämän kirjan *ehkä.

Consequently, the preferred analysis is one involving verb movement leftwards, across an adverb left-adjoined to VP, a possibility which is allowed by our theory, where the verb is assumed to move from its base position to T, the position of participial and infinitival affixes.

2.3 Quantifier Float

In this section we will show that the distribution of "floating quantifiers" also provides evidence in favour of the T/TP hypothesis. Sportiche (1989) has proposed that the so-called floating quantifier in (50b) is in the base position of the subject, which is adjunct-to-VP, according to Sportiche.19

(50)  a.  \text{Tous les enfants ont vu ce film.}  
     all the children have seen this film

     b.  \text{Les enfants ont tous vu ce film.}  

The idea is that the quantifier may either be moved along with the NP it quantifies, from the base position to Spec-IP, or it may be left behind with the trace of the moved NP. The structure of a Quantifier Float construction would thus be essentially (51):

(51)  \[ \text{NP}_1 \ldots [\text{VP } [\text{NP Q e}] ] \text{ VP} \]

---

19 Following Koopman and Sportiche (1987), he specifically does not assume that the subject originates in Spec-VP. The distinction is, of course, obliterated in the X-bar theory assumed by us.
Although by no means unproblematic, this analysis has a number of appealing properties, one of them being that the anaphor-like relation between the quantifier and the subject NP falls out as a consequence of the fact that the quantifier is contained in an NP also containing a trace bound by the subject. If accepted, the analysis provides direct evidence of the analysis of the subject (external argument) as originating in VP.

If the sentence contains several auxiliaries, the quantifier may appear in several positions:

(52) a. Les enfants ont tous été aperçus par les voisins.
    the children have all been seen by the neighbours
   
   b. Les enfants ont été tous aperçus par les voisins.

Sportiche (1989) favours an analysis where (52a) is derived by movement first of the NP with the quantifier to the Spec-position of the auxiliary être, followed by movement of the NP minus the quantifier, leaving the latter stranded in Spec-AUXP, between the two auxiliaries. (The alternative is to assume that the quantifier is left behind in VP by NP-movement, being subsequently moved leftwards to Spec-AUXP.)

Consider, in this light, the following Finnish data:

(53) a. Opiskelijat eivät kaikki ole muuttaneet uusin asuntoihin.
    students NEG all have moved new apartments
    'The students haven't all moved to new apartments.'
   
   b. Opiskelijat eivät ole kaikki muuttaneet uusin asuntoihin.
   
   c. Opiskelijat eivät ole muuttaneet kaikki uusin asuntoihin.

These possibilities are predicted by our theory. In (53a) kaikki, or rather [NP kaikki ej] (assuming Sportiche's theory), would be in Spec-TMP (= left-adjointed to TMP, in our framework). In (53b) it would be in Spec-TP (or conceivably Spec-AUXP). In (53c), finally, it would be in Spec-VP (= adjoined to VP; cf. footnote 19).

Thus Quantifier Float provides us with another piece of evidence in favour of a category T/TP separate from V/VP, where T is a landing site of verb movement from VP; the word order in (53c) is a result of verb movement from the base position of the verb in VP to T. Without this hypothesis, i.e. assuming that the participial form of the verb is in the base position of V in VP; we would not know how to account for (53c). As above, in connection with (47) and (48), we could not assume that the subject NP is base-generated between the verb and its direct object without violating various well-established principles.

It might be noted that there is a fairly subtle difference between (53a,b) on the one hand, and (53c) on the other: the latter may be somewhat unpreferred compared with the other two, perhaps in particular in writing. However, in general people seem to have no hesitations in accepting (53c) alongside (53a,b), even without any kind of pauses or special intonation patterns. Judging from Sportiche's (1989) footnote 4, the corresponding word order in French (tous
between *vu* and *ce film* in (50)) is not totally unacceptable, either (although it is ignored by *Sportiche*). If the word order is accepted, it may imply that French, too, has something corresponding to T, with verb movement V-to-T.

2.4 Agreement

In the constructions (54a,b,c) we have agreement in two places:

(54) a. Lapset eivät lukeneet tätä kirjaa.
   children NEG+3PL read+nut this book
   [PL]
   "The children didn't read this book."

b. Lapset ovat lukeneet tämän kirjan.
   children be+3PL read+nut this book
   [PL]
   "The children have read this book."

c. Lapset eivät ole lukeneet tätä kirjaa.
   children NEG+3PL be read+nut this book
   [PL]
   "The children haven't read this book."

F/AGR agrees with the subject in person and number, and *-nut* agrees in number. The latter, in fact, pertains only to written and formal spoken language: in (most varieties of) spoken Finnish *-nut* shows no agreement. In (55), where *-nut* is instanced twice, there is agreement in three places.

(55) a. Lapset eivät olleet lukeneet tätä kirjaa.
   children NEG+3PL be+nut read+nut this book
   [PL] [PL]

Given our analysis, and assuming that the subject is Spec-VP in D-structure, and that it is (or at least can be) moved successive-cyclically via each intermediate Spec-position to Spec-FP, we can account for the agreement facts by Spec-head agreement. That is to say, we can maintain, following Kayne (1988), that subject-predicate agreement is always a strictly local relation, holding between a head α and a specifier β of α. Simplifying somewhat, we can say that agreement occurs (or is required) between a head α and a specifier β of α when α and β are both marked for some feature(s) such as person, number, gender, etc. (the φ-features, so called). In this situation α and β must have the same value for the feature(s) in question. The structure of (55) will be (56): (The stem of NEG is represented by "E", to avoid confusion with the emptiness symbol.)
Each occurrence of agreement is an instance of (local) spec-head agreement, holding between a head and the plural subject *lapsöt* or one of its traces. That F/AGR agrees in person, while *-nut* agrees in number, may be regarded as simply a consequence of lexical properties of these morphemes: AGR is specified in the lexicon as having a value for person and number, while *-nut* is specified as having a value for number only.\(^\text{20}\) In colloquial Finnish *-nut* would be unmarked for number.\(^\text{21}\)

2.5. A note on NEG Movement

Consider the relation between the negation and the adverb in the following examples:

\begin{itemize}
  \item a. Jussi ei varmaan ole ostanut sitä kirjaa.
  \item J. NEG surely has bought that book
  \item b. Jussi varmaan ei ole ostanut sitä kirjaa.
\end{itemize}

The two sentences are synonymous: both have the reading (57a), neither have the reading (57b).

\(^{20}\) Alternatively just person, that is if we consider AGR to have six values for person, rather than three persons and two numbers. This may be more correct is indicated by the fact that the 2PL polite form of address does not show plural agreement on *-nut*:

\begin{enumerate}
  \item Oletteko Te jo syönyt*syönteet, hyvä herrä?  
    be+2PL,+Q You(PL) already eat+nut(SG)/eat+nut(PL) good sir 
    ‘Have you already eaten, sir?’
\end{enumerate}

\(^{21}\) We have not included any more traces of the subject in (55) than is required for either Theta-role assignment (the trace in Spec-VP) or agreement (the traces in Spec-TP and Spec-TMP). We are not compelled to do so, given that we assume that the spec-positions are adjunction positions, and hence optional.
That (56a) should have the reading (57a) is surprising, given that the scope of negation and the scope of adverbs is generally determined by their surface structural position, at least in the better known European languages. Finnish provides a clear counterexample: in (56a) the negation asymmetrically c-commands the adverb. Still the only acceptable reading is the one where the adverb has wider scope than the negation. This will be the case with any Adv1 type adverb, but with no Adv2 type adverb. Compare (58) and (59):

(58) Jussi ei **ehkä/todella/kai/ ilmeisesti** pidä sinustaa.
    Jussi NEG perhaps/truly/presumably/obviously like you
    ‘Perhaps/truly/etc. Jussi doesn't like you.’

(59) a. Jussi ei **aina** ole pitänyt sinustaa.
    J. NEG always has liked you
    ‘Jussi has not always liked you.’

b. Marja ei **usein** katso televisiota.
    Marja NEG often watches television
    ‘Marja doesn't often watch television.’

c. Minä en **täysin** muista tapahtunutta.
    I NEG completely remember what-happened
    ‘I don't completely remember what happened.’

The sentences in (59) do not have a reading where the adverb has scope over the negation (hence not "It often happens that Marja doesn't watch television" for (59b), for instance).

Now, this could provide interesting support for the hypothesis that NEG is a head which is raised to F: we might analyze (56a) as having the adverb adjoined to NEG, as shown in (60):

(60)  [FP Jussi [FP ei1 [NEGp vaimaan [NEGp ei1 [TMP ole ...]]]]]

Then, if for some reason the scope of the negation is determined not by its position in F, but by the position of its trace under NEG, we would have an account of the relative scope of the adverb and the negation. The reason why

---

22 One type of counter-example is (i):

(i) He doesn't, probably, like you.
It is crucial in (i) that the adverb is parenthetical. No such condition obtains for (56a).
Intonation-wise, and otherwise, (56a) is probably less marked than (56b).

23 If scope is defined in terms of m-command, as above in section 2.2., then the adverb in (55a) being adjoined to TMP will at least have the trace of NEG within its scope. This might provide a line of explanation, given a suitable theory of adverbial scope. However, we may have trouble explaining why the scope is asymmetric, i.e. why NEG cannot have scope over the adverb, in spite of both m- and c-commanding it. We have to account also for why adverbs in many other languages cannot take scope over a negation even though they (appear to) m-command it, as in, say, English *John hasn't certainly bought that book.*
only Adv1 can take scope over the negation would be that Adv2 can never be adjoined higher than TMP. An explanation of why the scope of negation is determined by the position of the NEG-trace might take as a starting point the morpho-phonological nature of NEG-movement: the negation in Finnish is a bound morpheme which has to adjoin to AGR. NEG-movement can be seen as triggered by this morphological property of NEG. However, certain other facts relating to scope indicate that this account of the scope relations in (56) and (58)-(59) may be on the wrong track. Note that Mood always has scope over the negation:

(61) a. Pekka ei liene unohtanut sinua.
    Pekka NEG be+POT forgotten you
    'Pekka has probably not forgotten you.'

    b. Marja ei ikinä ostaisi tätä kirjaa.
    Marja NEG ever buy-COND this book
    'Marja would never buy this book.'

As indicated by the English translation the potential mood obligatorily has scope over the negation. (61a) does not have a reading "It is not probable that Pekka has forgotten you". Similarly, although less transparently, the conditional mood has obligatory scope over the negation in (61b): the conditionality of the event described is not negated. That is to say, the scope relations of (61a,b) are as represented in (62a,b), respectively:

(62) a. POT (NEG (Jussi has forgotten you))

    b. COND (NEG (Marja buy this book))

This suggests that Mood undergoes raising in LF, to a position where it c-commands all of FP. As noted, only adverbs in the Adv1 class take scope over the negation in spite of being c-commanded by (the surface realization of) the negation in S-structure. This is the class of epistemic adverbs, i.e. those which express probability, possibility, etc. Quite conceivably the scope facts in (56) and (58) are an instance of the same phenomenon as (61): All "epistemic categories" undergo raising in LF to a position where they c-command FP, presumably adjunct-to-FP position. The epistemic categories include (at least) Mood and adverbs of the Adv1 class.24

This also provides (at least potentially) a solution to a problem not mentioned earlier. We have assumed that Adv1 adverbs may be adjoined as low down as to TP, and even VP (the latter under marked conditions). In these positions, given the theory of scope assumed, the adverbs clearly do not have scope over FP, since they do not m-command FP. Yet, ignoring for the moment the marked case of VP-adjunction, which may be slightly different, an Adv1 adjoined to TP has the same scope as when it is adjoined to FP or TMP:

24 Since the adverbs in question may be analyzed as heads, albeit heads which do not project a phrase, this raising would be a case of head-movement in LF.
varmaan ‘certainly’ in (63a) has (or at least can have) the same scope as in (63b,c), which is scope over the entire sentence:

(63)  a. Marja ei ole varmaan lukenut tätä kirjaa.
      Marja NEG have certainly read this book
b. Marja ei varmaan ole lukenut tätä kirjaa.
c. Marja varmaan ei ole lukenut tätä kirjaa.

This is accounted for, without modification of the theory of scope assumed earlier, if Adv1 undergoes LF-movement to a position where it c-commands FP.

The question then is why many other languages do not permit a similar movement of epistemic adverbs. Consider for instance English:

(64)  *Mary hasn’t certainly read this book.

(64) is not well formed with a reading where the negation has scope over the adverb (i.e. ‘It is not certain that...’). However, unlike the situation in Finnish, it is also not well formed with a reading where the adverb has scope over the negation. In fact it has no well-formed reading, hence the star. In the present framework we would say that English has some property which blocks LF-raising of the adverb; some category between the adverb and FP is a barrier for LF-movement of the adverb. We can only speculate about what the crucial property may be.25

We can also suggest a solution to another problem implicit in the theory of adverbs sketched in section 2.2.: We noted that when Adv1 and Adv2 occur together, Adv1 precedes Adv2. The example was (37), repeated here as (65):

(65)  a. Pekka ei ehkä aina tahdo olla yksin.
      Pekka NEG perhaps always want be alone
      ‘Perhaps Pekka doesn’t always want to be alone.’
b. *Pekka ei aina ehkä tahdo olla yksin.

We have seen that there is an overlap in the positions where Adv1 and Adv2 may occur. For instance, both may be adjoined to TMP, as they are, conceivably, in (65).26 The question is, then, why (65b) is not well-formed, in particular if scope is determined by m-command: if both adverbs are adjoined to

---

25 In (64) it looks like the negation creates a barrier, but the negation alone is not responsible, as shown by the ill-formedness of (i):

(i)  *Mary has been certainly reading in this book.

26 We should note the possibility that Adv1 in (65a) is adjoined to NEG while Adv2 is adjoined to TMP. An alternative example excluding this possibility would be (i)

(i)  a. Pekka ei olisi ehkä aina tahdonut olla yksin.
      Peka NEG be-COND perhaps always wanted to be alone
b. *Pekka ei olisi aina ehkä tahdonut olla yksin.

In (i) Adv1 may be adjoined to AUXP and Adv2 to TP, or both of them to AUXP or to TP. The question addressed in the text is, why is the inverse order exemplified in (ib) not well formed?
The Structure of INFL

TMP they will both have exactly the same m-command domain (cf. footnote 18). However, under the hypothesis that Adv1 (obligatorily) undergoes LF-raising, we may rule out (65b) as a violation of Relativized Minimality (cf. footnote 5). The adverb aina in (65b) acts as a Minimality barrier, blocking LF-movement of the adverb child to the FP-adjunct position.

REFERENCES

Holmberg, Anders 1989 "Verb movement in Finnish", in Nieni, Jussi (ed.) Papers from the 11th Scandinavian Conference of Linguistics, University of Joensuu, Finland.
Li, Yafei 1990 "X'-binding and verb incorporation", Linguistic Inquiry 21: 399-426.
Ouhalla, Jamal
1990

Pollock, Jean-Yves
1990

Reime, Hannu
1986
"On the notion 'Subject-of' and its role in the theory of grammar", ms., Department of Linguistics, University of Helsinki.

Reime, Hannu
this vol.
"Accusative marking in Finnish".

Rizzi, Luigi
1986

Rizzi, Luigi
1990

Sproat, Richard
1985
"Welsh syntax and VSO word order", Natural Language and Linguistic Theory 3: 173-216.

Stowell, Tim
1981
Origins of phrase structure, doctoral dissertation, MIT.

Stowell, Tim
1982

Travis, Lisa
1984
Parameters and effects of word order variation, doctoral dissertation, MIT.

Trosterud, Trond:
this vol.
"Anaphors and binding domains in Finnish".

Vilkuna, Maria
1989