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1 Introduction

It is an open question whether the functional projections above the VP projection are the same, either across languages or within a single language. Based on the morphosyntactic evidence in Finnish, and following Baker's (1985) Mirror Principle, the functional projections of the non-finite clause differ from those of the finite clause, although both types of clauses contain a VP projection. This suggests that UG allows for more than one possible combination of functional projections as an extended projection of VP.

The structure of the non-finite clause in Finnish indicates, however, that projections are not combined in an arbitrary manner. Rather, all of the five productively used non-finite constructions can be analyzed as instances of the following pattern: *V + infinitival suffix (+ case suffix (+ possessive suffix))*. This general pattern seems to have escaped the notice of traditional grammarians, such as L.Hakulinen in his comprehensive reference grammar (1979:254-256, 565-586). The pattern is obscured by the traditional division of non-finite verb forms into four or more *infinitives* and six *participial* forms. This categorization turns out to be misleading in Finnish, as is most strikingly seen in the case of the Temporal Adjunct (pointed out by A.Hakulinen & Karlsson 1979:341). This construction has two aspectual forms, one of which bears the traditional *2nd infinitive* affixes, while the other is the traditional *passive participle* form – although in this construction the form is active in meaning and behaves as an active verb in terms of case marking. (The two forms are exemplified below in (6a-b).)

The general suffixation pattern of the non-finite verb forms has not been captured in generative works either, such as A.Hakulinen & Karlsson (1979:340-391) – who treat all non-finite constructions as being transformationally derived from finite clauses – or Vainikka (1989:243-320), where I analyze the non-finite forms as being VPs embedded under an NP projection.

Apart from the unified suffixation pattern, the non-finite forms share a number of syntactic properties. None of them allow nominative subjects, subject-verb agreement, or the negative verb. In the non-finite constructions that allow the subject argument to be expressed, the subject occurs in genitive case or as a possessive suffix (which agrees with the subject in person and number). A full finite clause is typically used when negation needs to be expressed; some of the constructions allow a special negative suffix *-tta* which will not be discussed in this paper.

I will propose here an analysis of the non-finite constructions using functional projections which both captures the syntactic properties just mentioned and accounts for the suffixation pattern.

2 Nominal and Finite Constructions

2.1 The Nominal Phrase

Consider the following possessive NP in Finnish, where the functional head that each morpheme occupies is indicated on the third line. The case suffix occupies the K position (for “Kase” – corresponding to Nikanne's abstract P; Nikanne 1993) – and the possessive

suffix occupies the D position (Abney 1987).¹

- (1) koira -lle -ni
 dog ALL 1SGPx 'to my dog'
 N K D

The head-N 'koira' raises via head-to-head-movement to K and D, adjoining to the suffixes² (see Longobardi 1994 for arguments for a general N-raising process). This structure provides a position for any of the 15 morphological cases in Finnish, as well a position for any of the five possessive suffixes. There is no overt indefinite or definite article in Finnish, and thus no conflict arises with the possessive suffix in D.

The heads can be schematically represented as follows, where the arrow indicates movement up to the next higher head:

- (2) N → K → D

2.2 The Finite Clause

The proposals for the functional projections in the Finnish finite clause agree on the three top-most projections below the CP, with some variation in terminology (Holmberg et.al. 1993, Mitchell 1991, Vainikka 1994): AgrP, NegP, and TP. In Vainikka (1994) I proposed the following sequence of functional heads, adopted here (although the names of the heads have been modified):

- (3) V → Pass → T → Neg → Agr

Pass contains both passive features and the auxiliary verb according to Vainikka (1994); *T* contains tense and mood features; *Neg* contains the negative verb and perhaps a secondary passive suffix (*Ast* in Mitchell 1991); and *Agr* contains the subject-verb agreement features.

3 The Non-Finite Constructions

3.1 Background

Three of the five productively used non-finite constructions in Finnish clearly have both verbal and nominal features: they are headed by a verb which takes the usual verbal arguments (in the usual cases, including accusative and partitive), but they also have a case suffix and a possessive suffix (like nouns, but unlike inflected verbs). These constructions differ from nominalizations in that the latter never allow accusative case marking on the object. Following Vainikka (1989), the three constructions will be referred to as the *Temporal Adjunct*, the *Rationale Adjunct*, and the *Infinitival Clausal Complement*.

¹The following abbreviations are used in this paper, for terms in traditional Finnish grammar:

1SGPx = 1st person singular possessive suffix

ALL = allative case ('to the top of; to the possession of'); ELA = elative case ('from'); GEN = genitive case; ILL = illative case ('to'); INE = inessive case ('in'); PAR = partitive case (one of the two objective cases); TRA = translative case

1stINF = first infinitive; 2ndINF = second infinitive; 3rdINF = third infinitive

PRES/P = present participle; PAST/P = past participle; PASS/P = passive participle

²The head-final structures appear to be preferable given the position of attributive adjectives, which precede the raised noun but agree with it in case.

The remaining two constructions (the *TA-construction* and the *MA-construction*) do not have a possessive suffix, and thus it was proposed in Vainikka (1989) that these constructions do not involve an NP projection, but a bare VP projection (with a possible PP projection).

3.2 Constructions with a Possessive Suffix

I wish to entertain here the idea that the structure of the Temporal Adjunct, the Rationale Adjunct, and the Infinitival Clausal Complement involves a combination of nominal functional heads and verbal functional heads, as shown in (4); Y stands for a functional head the content of which is undetermined for the moment.

$$(4) \quad V \rightarrow \text{Pass} \rightarrow Y \rightarrow K \rightarrow D$$

That is, there is a verb stem followed by a possible passive suffix, followed by a mysterious further suffix, followed by a case suffix, followed by a possessive suffix. The interpretation of the elements in the various functional heads is as follows. In *Pass*, we find a passive morpheme which has a function equivalent of that in a finite clause, namely making the object of the verb the subject of the verb. The infinitival suffix in *Y* has either no function or it bears some temporal/aspectual information. The case suffix in *K* bears no known semantic information, except in the *MA-construction* (cf. below). The possessive suffix in *D* represents the subject NP of the verb.

I propose tentatively that the structure in (4) is derived from (2) and (3) as shown in (5):

$$(5) \quad V \rightarrow \text{Pass} \rightarrow \begin{array}{|c|} \hline T \\ \hline \end{array} \rightarrow \begin{array}{|c|} \hline N \\ \hline \end{array} \rightarrow K \rightarrow D$$

The lowest three heads of the finite tree are embedded under the nominal tree by having the N head 'merge' with the T head. The merged node is the unspecified Y head in (4), and this head can be argued to have features both from N and from T; cf. Section 3.3.

3.2.1 The Temporal Adjunct

The structure in (4) corresponds to the suffixes in the three variants of the Temporal Adjunct as follows:³

(6)	a.	astu	-e	-ssa	-ni	
		step	2ndINF	INE	1SGPx	'while I am stepping'
		V	Y	K	D	
	b.	astu	-ttu	-a	-ni	
		step	PASS/P	PAR	1SGPx	'after I (had) stepped'
		V	Y	K	D	
	c.	astu	-tta	-e	-ssa	
		step	PASS	2ndINF	INE	'while it is being stepped'
		V	Pass	Y	K	

³Suffixes are glossed using traditional terminology, even where a different type of suffix is used within the same construction, as in (6a) vs. (6b); cf. Section 1.

In (6c), the passive variant of (6a), the possessive suffix (corresponding to the subject of a finite clause) is suppressed. Furthermore, we have to stipulate that the perfective aspect of the Temporal Adjunct (6b) does not have a passive variant; there is no way to express the passive perfective using the Temporal Adjunct – of course, a full finite clause can always be used to express any of the interpretations not allowed by the grammar of the non-finite constructions.

3.2.2 The Infinitival Clausal Complement

Similarly, (7) provides the mapping for the four possible variants of the Infinitival Clausal Complement; again, the passive variants (7c-d) do not have a possessive suffix:

- (7) a. astu -va -0 -ni
 step PRES/P GEN 1SGPx ‘I step’ (non-fin.)
 V Y K D
- b. astu -nee -0 -ni
 step PAST/P GEN 1SGPx ‘I stepped’ (non-fin.)
 V Y K D
- c. astu -tta -va -n
 step PASS PRES/P GEN ‘it is stepped’ (non-fin.)
 V Pass Y K
- d. astu -tu -n
 step PASS/P GEN ‘it was stepped’ (non-fin.)
 V Pass+Y K

In this construction, the genitive case suffix is realized as zero, when followed by a possessive suffix, as in (7a-b). Under an alternative analysis, there is no genitive case marking in the active variants of this construction, while the passive variants clearly contain an overt genitive suffix. The null genitive analysis of (7a-b) is supported by the facts in the nominal domain, where a genitive suffix is omitted before the possessive suffix, as shown in (8):

- (8) a. koira -0 -ni kulho
 dog GEN 1SGPx bowl ‘my dog’s bowl’
 N K D
- b. koira -n kulho
 dog GEN bowl ‘(the) dog’s bowl’
 N K

Note that the interpretation of (8a) indicates that genitive case marking is present; otherwise (8a) should only have the ungrammatical reading ‘my dog bowl’. Positing the null genitive both for (8a) and for (7a-b) allows us to interpret (8a), as well as provide a uniform structure for the non-finite constructions in Finnish, where a case suffix intervenes between the infinitival suffix and the possessive suffix.

3.2.3 The Rationale Adjunct

Finally, the Rationale Adjunct is analyzed as follows:

- (9) astu -a -kse -ni
 step 1stINF TRA 1SGPx ‘in order for me to step’
 V Y K D

Unlike the two previous constructions, this construction does not allow for a passive form and does not exhibit an aspectual distinction. Nevertheless, it conforms to the general pattern of the verb stem followed by a suffix, followed by a case suffix, followed by a possessive suffix.

3.3 The Mediating Functional Head

What is the status of the mysterious head Y? I wish to propose that it has nominal features which transform the V-based projection into a nominal projection, thus allowing for a KP and a DP to be projected; under the present proposal, these nominal features derive from the N head which is one of the two components of Y. In addition to nominal features, it contains the present/past distinction in the Temporal Adjunct construction and in the Infinitival Clausal Complement construction as shown in (6-7). This suggests that the feature [+/- past] is available in the Y position, as a legacy of its second component, T.

3.4 Constructions without a Possessive Suffix

3.4.1 The MA-Construction

In addition to the three constructions discussed so far, Finnish has two non-finite constructions which lack a possessive suffix. I propose that one of them, the MA- construction, projects up to the KP level but no further, as shown in (10):

- (10) astu -ma -ssa/sta/Vn
 step 3rdINF INE/ELA/ILL ‘stepping/from stepping/to step’
 V Y K

The lack of the DP projection accounts for the non-occurrence of possessive suffixes in this construction. As with the Rational Adjunct, no passive or aspectual forms are found in this construction. As argued in Vainikka (1989), this construction has the distribution of locative (non-verbal) PPs.

3.4.2 The TA-Construction

Finally, the fifth non-finite construction in Finnish, the TA-construction, has the structure of a “bare” YP, with no case suffix and no possessive suffix:

- (11) astu -a
 step 1stINF ‘to step’
 V Y

The so-called first infinitive suffix in (11) is the same suffix as the one in the Rationale Adjunct in (9), and both occupy the Y position.

4 Conclusion

I have proposed that the three non-finite constructions which exhibit possessive suffixation have the structure above in (5), with the case suffix in K, and the possessive suffix in D, exactly as in the nominal phrase. Two of these constructions also have a passive variant, represented by a separate Passive Phrase. A further construction appears to have a KP but no DP projection (the MA-construction), while the fifth construction (the TA-construction) provides evidence for neither KP nor DP. All five constructions have a morpheme intermediate between the verbal heads (*V* and *Pass*) and the nominal heads (*K* and *D*). This head (*Y*) contains an infinitival suffix which may also bear aspectual information, and I have suggested that it is a combination of the verbal head *T* and the nominal head *N*.

Infinitival constructions in Finnish do not allow for any CP-related constructions (such as WH-movement or sentential particles), nor do they exhibit the finite subject-verb agreement paradigm, negation, or finite tense marking. The lack of a CP is unsurprising since the highest projection of these constructions is a DP, not an AgrP. The lack of the heads Agr and Neg accounts for the non-occurrence of finite agreement and negation. Since the head T is not fully realized (but is merged with N), we find a variant of tense marking different from finite clauses.

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