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SYNTACTIC CATEGORY CHANGING IN SYNTAX: EVIDENCE FROM FINNISH PARTICIPLE CONSTRUCTIONS*

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1. Introduction

This paper focuses on the concept of 'syntactic category'. The assumption that lexical items belong to identifiable syntactic categories is one of the most basic ones in syntactic research: before linguists can draw any meaningful generalizations about the order of words in sentences, it is necessary to identify which larger group each word (or morpheme) belongs to. Although researchers have divided lexical items into categories such as 'verb', 'noun', or 'adjective' for thousands of years, the criteria for such divisions have never been obvious or uncontroversial. However, various standards are used cross-linguistically for this purpose. For instance, according to semantic criteria, verbs indicate events or actions, nouns denote places, persons or things, and adjectives refer to properties or qualities. Distributional criteria state that verbs form the nuclei of clauses or sentences, nouns head noun phrases, and adjectives in turn modify noun phrases. Finally, morphological criteria define nouns as showing number distinctions and taking possessive markers, verbs as showing tense, aspect and mood distinctions, and adjectives permitting degree modification.

In most languages there are forms that do not conform to these criteria that keep the commonly assumed categories apart. Modals, participles and infinitives, for instance, generally resist unambiguous categorization. This paper presents data from Finnish participle constructions to exemplify the problem. In all the Finnish forms the participle shows unclear categorial characteristics in that it manifests behaviors typical of two different categories simultaneously:

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it acts both in a verb-like and in a nominal or adjectival manner. Yet it never exhibits all expected properties of any known category. If we assume that our syntactic computational system is based on a structure in which each word belongs to a specific category, these hybrid forms should not exist.

The solution presented here is based on the assumption that category labels such as 'noun', 'verb' or 'adjective' do not stand for syntactic primitives, but that the existence of these seemingly homogeneous groups is derivative from combinations of more elementary components, syntactic features. This in itself is not a novel proposal: for instance, Chomsky 1981 divided the four major lexical categories noun, verb, adjective and preposition into the features[±N], [±V]. Much subsequent research, particularly within the Minimalist framework, has further examined the kinds of syntactic features that drive syntactic processes. In addition to the small set of lexical syntactic features, this work has investigated functional features like [±wh] (from Chomsky 1977, Lasnik and Saito 1984), [±Tense] and [±Agreement] (Chomsky 1981). My analysis takes Chomsky's idea of syntactic features as a starting point, and delves deeper into the nature and organization of such features. Although the assumption that syntactic categories consist of bundles of smaller elemental components is commonly accepted, much of current syntactic research deals with explicitly categorial entities such as Noun, Verb, Determiner, Complementizer, and syntactic heads like Tense or Agreement. I argue that each of these entities should be broken down further into sets of features, and that all categorial labels are, at best, a convenient short-hand representation of given feature sets, and, at worst, a source of confusion and disagreement. Based on the participial data, I examine what featural content makes a verb a verb, or a tense projection a tense projection, and how features combine to create hybrid participial forms.

2. Finnish participle constructions

There are two participial verb forms in Finnish. The suffix *-va /-vä* (VA in the examples) derives the present participle, and *-nut /-nee* (glossed as NUT)[1] the past participle. Both participial forms can be found in three seemingly

1 Vowel harmony, consonant gradation, and various other assimilation processes affect the phonological form of Finnish lexical items (for further details cf. e.g. Keyser and Kiparsky 1984, Cathey and Wheeler 1986). Moreover, the citation form of the past participle, *-nut*, changes to *-nee* when another morpheme is added. For the purposes of this paper, issues of segmental phonology will be ignored.

unrelated constructions: in the nominal (accusative-marked) direct object position (1a), as the main verb in a finite main clause (1b), and as an adjective-like prenominal modifier (1c). The sentences in (1) exemplify the phenomenon outlined above: there is an ambiguity that undermines establishing the syntactic category of the participles, since the participial clauses occur in positions of and exhibit the typical characteristics of regular nouns, verbs and adjectives.[2]

(1) a. Minä unohd-i-n **[sinun luvan-*nee*-n kirja-n Anna-lle]**.
I.NOM forget-PAST-1SG you.GEN promise-NUT-ACC[3] book-ACC Anna-ALL
"I forgot [that] you promised Anna the book."

b. Anna ei **muista-*nut*** lupaus-ta-si.
Anna.NOM NEG.3SG remember-NUT promise-PART-2SG.POSS
"Anna didn't remember your promise."

c. **[Lupaukse-n unohta-*nut*]** Anna ei ansaitse kirja-a!
promise-ACC forget-NUT Anna.NOM NEG.3SG deserve book-PART
"Anna, who forgot the promise, doesn't deserve the book."[4]

It is clear that the different participle forms should not be analyzed as distinct, accidentally homophonous lexical elements, since the participial head and the structures in which it appears share most of their properties. Morphologically, all the participial forms in all the different structures are compatible with only nominal/adjectival inflection (case, nominal number agreement, possessive suffixation), never with verbal inflection (person/number

2 The following abbreviations are used for the Finnish examples: NUT - past participle (*-nUt/-nee*), VA - present participle (*-vA*), DEVN - deverbal nominal (*-minen*), SG - singular (unmarked), PL - plural (*-t/-i*); 1, 2, 3 - agreement in person on verbs (1SG *-n*, 2SG *-t*, 3SG *-V*, 1PL *-mme*, 2PL *-tte*, 3PL *-vAt*) and in possessive suffixes (= POSS, 1SG *-ni*, 2SG *-si*, 1PL *-mme*, 2PL *-tte*, 3person *-nsA*; third singular and plural possessive suffixes are identical, and indicated as '3Poss' only); NOM - nominative (unmarked), GEN - genitive (*-n*), PART - partitive (*-(t)A*), ACC -accusative (unmarked or *-n*), TRAN - translative (*-ksi*, 'into'), INE - inessive (*-ssA*, 'in'), ELA - elative (*-stA*, 'from in'), ILL - illative (*-Vn/-hin* , 'to in'), ADE - adessive (*-llA*, 'on', 'at'), ABL - ablative (*-ltA*, 'from on'), ALL - allative (*-lle*, 'to on'); COMP - comparative *-mpi*; PAST - finite past tense (*-i*, finite present tense is unmarked), COND - conditional (*-isi*); AGR - passive agreement marker (*-Vn*), PASS - passive (*-(t)tA*, active unmarked); ADV - adverbial suffix (*-sti*, '-ly'); POT (potential), SUP (supine), PRTC (participle).

3 The basis for the identification of the case marking of the participial head as accusative is discussed in section 1.2.

4 A postnominal finite relative clause form parallel to the English translation also exists in Finnish. Any possible distinction between the two types is as yet unstudied. It is clear, however, that the difference does not hinge on restrictive vs. non-restrictive relativization. In fact, it is uncertain whether the contrast is expressed in Finnish (Helasvuo 1993).

agreement, finite tense or mood marking).[5] In contrast, syntactically, each participial form retains its ability to assign a full range of object cases, and the thematic relations as well as selectional properties of the affixed verb. Yet the participial form alone is never compatible with a nominative subject. The categorization quandary attested by these participials arises, then, from ambiguous behavior within each construction, rather than between, for instance, a nominal use and a verbal use (as, for instance, is the case with English participles). As well, the sets of verbal syntactic and nominal/adjectival morphological qualities are shared by the participial form in the various constructions. Thus I conclude that there is only one present or past participle form in Finnish. In this paper I examine the characteristics that these participial heads, and the structures in which they occur, share with the nominal, verbal and adjectival lexical categories. I demonstrate that in all the forms in (1) the participle exhibits a core set of verbal characteristics, yet always also presents some non-verbal properties. An analysis based on syntactic features resolves the conundrum.

2.1 The verbal properties of the participle

Table 1 summarizes the verbal qualities of the participle.

Table 1

VERBAL PROPERTIES OF THE PARTICIPLE
• Assigns full range of object cases
• Has Theta role assignment and selectional restrictions identical to finite verb
• Is modified by verb-oriented adverbs
• Can form a passive counterpart
• Bears temporal content

The most obvious verbal trait of the participles is their ability to assign case to their complements. (2) shows that the embedded participle assigning all possible object cases: accusative (2a), partitive (2b) and quirky case (2c).

(2) a. Kati sano-o [sinun katsel-lee-n elokuva-**n**].
Kati.NOM say-3SG you.GEN watch-NUT-ACC movie-ACC
"Kati says [that] you watched the [whole] movie."

5 The possibility of passive marking on the participial forms is discussed in section 2.3.

b. Kati sano-o [sinun katsel-lee-n elokuva-**a**].
Kati.NOM say-3SG you.GEN watch-NUT-ACC movie-**PART**
"Kati says [that] you watched [some of] the movie."

c. Kati sano-o [sinun pitä-nee-n elokuva-**sta**].
Kati.NOM say-3SG you.GEN ike-NUT-ACC movie-**ELA**
"Kati says [that] you liked the movie."

These sentences illustrate that neither the participial morphology nor the nominal suffixation of the participle affect its ability to assign case. Moreover, the object case variation has the same aspectual effect as case variation does with a finite verb, so that an event with a_n accusative is interpreted as telic, while a partitive object implies an atelic event (cf. e.g. Heinämäki 1984). The participles in every environment retain this capacity to assign a full range of object cases. Example (3) illustrates the effect of the change of object case in the prenominal participle construction.

(3) a. elokuva-**n** katsel-lut lapsi
movie-ACC watch-NUT child
"the child [who] watched the movie"

b. elokuva-**a** katsel-lut lapsi
movie-PART watch-NUT child
"the child [who] watched a movie"

c. elokuva-**sta** pitä-nyt lapsi
movie-ELA like-NUT child
"the child [who] liked the movie"

This verbal behavior of the participial structures contrasts with the functioning of another deverbal nominal form, the *-minen* nominal. A *-minen* nominal can be derived from any Finnish verb by suffixing the verb stem with the morpheme *-minen*. When a *-minen* form is derived from a transitive verb, it is possible to express the internal argument of the verb overtly, but this object NP can only occur in a position to the left of the *-minen* form, marked with genitive case (4).

(4) a. **Pallo-n /*Pallo-a heittä-minen** on kiellettyä elokuvateatteri-ssa.
ball-GEN/ ball-PART throw-DEVN is forbidden movie.theatre-INE
"Ball-throwing is forbidden in a movie theatre,"

b. Minä pidä-n **elokuv-ie-n / *elokuv-i-a katsele-mise-sta.**
I.NOM like-1SG movie-PL-GEN / *movie-PL-PART watch-DEVN-ELA
"I like watching movies."

The prenominal genitive position is the canonical possessor NP position in Finnish.

(5) a. **pallo-n** pinta
ball-GEN surface
"the surface of the ball"

b. **elokuv-ie-n** juone-t
movie-PL-GEN story.line-PL
"the story lines of movies"

Adjectival modifiers of adjectives also appear genitive-marked.

(6) a. **iloise-n** keltainen
happy-GEN yellow
"[a] happy yellow"

b. **Anna-n** näköinen
Anna-GEN looking
"looking like Anna"

Thus, unlike the participial head, it appears that the *-minen* nominal itself cannot assign any kind of object case, but its thematic object is realized in the nominal subject position. The contrast between the two deverbal types shows that, in terms of object case assignment, the *-minen* nominal displays noun-like behavior, while the past participle behaves like a verb.

The participle is also verb-like in terms of the selectional restrictions that it places on its complements, and the thematic relations that hold between it and its arguments. These relationships are identical to those that hold between a finite verbal counterpart and its arguments. Both the finite verb *söi*, 'ate', in (7a), and its participial counterpart *syöneen*, 'eaten', in (7c), permit the abstract complement *sanansa*, 'his/her word', with an idiomatic interpretation, but neither verb form yields a comprehensible interpretation with other abstract noun complements. In addition, the thematic relations between the participle, any complements, and the logical subject of the participial clause are the same as those between a corresponding finite verb and its arguments. Despite the nominal morphology on the participle and its non-verbal position, the participle retains these verbal attributes.

(7) a. Viivi sö-i **sana-nsa.**
Viivi.NOM eat-PAST.3SG word-3POSS
"Viivi broke her promise (lit. ate her words)."

b. Viivi sö-i ***ylpeyte-nsä /*viisaute-nsa /*rakkaute-nsa.**
Viivi.NOM eat-PAST.3SG *pride-3POSS /*wisdom-3POSS /*love-3POSS
*"Viivi ate her pride / wisdom / love."

c. Minä kuule-n [Viivi-n syö-nee-n **sana-nsa**].
I.NOM hear-1SG Viivi-GEN eat-NUT-ACC word-3POSS
"I hear [that] Viivi broke her promise (lit. ate her words)."

d. Minä kuule-n [Viivi-n syö-nee-n ***ylpeyte-nsä /*viisaute-nsa /***
I.NOM hear-1SG Viivi-GEN eat-NUT-ACC *pride-3POSS /*wisdom-3POSS /
rakkaute-nsa].
*love-3POSS
*"I heard [that] Viivi ate her pride /wisdom /love."

The *-minen* nominal, although able to retain a thematic relation with its argument in the nominal subject position, cannot however preserve the verbal ability to select idiomatic complements. The *-minen* nominalized equivalent of (7), in (8), can only have a nonsensical nonidiomatic reading.

(8) ??Viivi-n **sana-nsa** syö-minen suututt-i Eetu-n.
Viivi-GEN word-3POSS eat-DEVN anger- PAST.3SG Eetu-ACC
"Viivi's eating of her words angered Eetu."
*"Viivi's breaking her promise angered Eetu."

The participle is modified by verb-oriented adverbs.[6] (9a-b) equate the identical behavior of a finite verb and a corresponding participle with regard to modification. The *-minen* nominal in (10), on the other hand, functions like a noun: it is modified by an adjective that agrees with the *-minen* head in number and case marking.

(9) a. Kati heitt-i **uskomattoma-sti** pallo-n järve-en.
Kati.NOM throw-PAST.3SG incredible-ADV ball-ACC lake-ILL
"Incredibly, Kati threw the ball into the lake (... and not at the window)."

b. Minä nä-i-n [Kati-n heittä-nee-n **uskomattoma-sti**
I.NOM see-PAST-1SG Kati-GEN throw-NUT-3SG incredible-ADV
pallo-n järve-en].
ball-ACC lake-ILL
"I saw [that] Kati [had] thrown, incredibly, the ball into the lake."

c. Minä tiedä-n [hänen syö-**nee**-n **jatkuva-sti** popkorni-a].
I.NOM know-1SG 3SG.GEN eat-NUT-ACC continuous-ADV popcorn-PART
"I know [that] he ate popcorn continuously."

6 The *-sti* suffixed form corresponds to the English *-ly* adverb.

(10) a. Nä-i-n [Kati-n **uskomattoma-n /*uskomattoma-sti**
see-PAST-1SG Kati-GEN incredible-GEN /*incredible-ADV
pallo-n järve-en heittä-**mise**-n].
ball-ACC lake-ILL throw-DEVN-GEN
"[I] saw Kati's incredible throwing of the ball into the lake."

b. Hänen **jatkuva /*jatkuva-sti** popkorni-n syö-**mise**-nsä
3SG.GEN continuous /*continuous-ADV popcorn-GEN eat-DEVN-3POSS
suututta-a minua!
anger-3SG I.PART
"His continuous popcorn eating makes me angry!"

Although the participial form can never carry most types of verbal inflection, i.e. finite tense, mood or person/number agreement, it has a passive counterpart (11). In this it again contrasts with the *-minen* forms in (12), which can never be passivized.

(11) a. [hallitukse-lta saa-**ta-va**-t] selonteo-t
government-ABL receive-**PASS-VA**-PL.NOM report-PL.NOM
"the reports [that will] be received from the government"

b. Minä huomaa-n [patsa-sta siirre-**ttä-vä**-n uute-en paikka-an].
I.NOM notice-1SG statue-ELA move-**PASS-VA**-ACC new-ILL place-ILL
"I notice [that] the statue [will] be moved into a new place."

(12) a. Selonteo-n saa(*-**ta**)-minen ajoissa on epätodennäköis-tä.
report-GEN receive-**PASS**-DEVN on.time be.3SG unlikely-PART
"The report being received on time is unlikely."

b. Patsaa-n siirtä(*-**tä**)-minen aiheutta-ne-e kohu-n.
statue-GEN move-**PASS**-DEVN cause-POT-3SG sensation-ACC
"The statue being moved will probably cause a sensation."

Furthermore, although the participle cannot bear the tense marking that characterizes finite verbs, it clearly carries temporal content in that the choice between the present or the past participle is solely responsible for a past/non-past interpretation distinction in the clause. In all the constructions in which the participle occurs, the present participle yields either a contemporaneous or a future reading, while the past participle results in a temporally backshifting reading. Thus the participle contains temporal information in the same way that a finite verb embodies temporal information.

(13) a. [elokuva-a katsele-**v**-i-lle] laps-i-lle
movie-PART watch-VA-PL-ALL child-PL-ALL
"for/to the children [who] are watching the movie"

b. [elokuva-a katsel-**le**-i-lle] laps-i-lle
movie-PART watch-NUT-PL-ALL child-PL-ALL
"for/to the children [who] watched the movie"

c. Minä luule-n [Eevi-n katsele-**va**-n Leijonakuningas-ta].
I.NOM think-1SG Eevi-GEN watch-VA-ACC Lion.King-PART
"I think [that] Eevi [is] watching the Lion King."

d. Minä luule-n [Eevi-n katsel-**lee**-n Leijonakuningas-ta].
I.NOM think-1SG Eevi-GEN watch-NUT-ACC Lion.King-PART
"I think [that] Eevi [has] watched Lion King."

Nonetheless, other syntactic properties associated with the finite tense inflection are missing from the participle forms, in particular those related to nominative subject case marking. Thus, the participle is verbal in that it bears temporal content, but its tense property is also different from that of the finite verb.

The data above have shown that the participles in all their manifestations have several strongly verbal qualities. These verb-like properties are closely linked to the participial head itself, so that the participle retains its case and theta role assignment and semantic selectional properties, as well as temporal specification. The participial structures, however, also exhibit several clearly non-verbal characteristics.

2.2 The nominal properties of the participle

I now turn to the seemingly nominal characteristics of the participials, which mainly apply to the embedded participial construction. Table 2 lists both the nominal properties of the participial constructions as well as traits which separate the participles from regular nouns. Obviously all the verbal characteristics that were shown in Table 1 and discussed in section 2.1 also belong to the non-nominal properties, in addition to those listed in Table 2.

Table 2

NOMINAL PROPERTIES OF THE PARTICIPLE CONSTRUCTIONS	NON-NOMINAL PROPERTIES OF THE PARTICIPLE CONSTRUCTIONS
• The embedded participial clause also a theta position;	• Participial head does not exhibit normal object case variation;
• All participles can bear nominal inflection (case, nominal number, a possessive suffix);	• Participial clauses cannot occur in all possible nominal positions;
• No participle ever bears most types of verbal inflection (finite tense, mood, person/number agreement);	• Neither the embedded participle nor the participial clause can topicalize;
• The thematic subject of the embedded participle bears genitive case.	• Neither the embedded participle nor the participial clause can take part in argument transposition.

The embedded participial clause seems to occur in the direct object position, and since the participial head bears accusative case marking comparable to that of a regular object NP,[7] the participial clause appears to behave like a normal nominal object. The examples in (14) contrast the form of a typical NP object and the participial clause object. In addition, the subject of the participial clause bears genitive case, just as possessive NPs do, which supports an analysis of the participial head as a noun.

(14) a. **Minä tiedä-n tarina-n.**
I.NOM know-1SG story-ACC
"I know the story."

b. Minä tiedä-n [hänen lähte-nee-**n**].
I.NOM know-1SG 3SG.GEN leave-NUT-ACC
"I know [that] s/he [has] left."

7 The phonological form of the participial in the object position is ambigiously *-n*, which can either be analyzed as an accusative marker or the homophonous genitive ending. This characteristic of the participles mirrors the behavior of regular lexical nouns which attest an identical lack of unique accusative form. Only pronouns have distinct accusative and genitive case forms. I gloss the *-n* ending of the participle as accusative based on the observation that verbs such as *tietää*, 'know', *huomata*, 'notice' and *unohtaa*, 'forget', take accusative marked pronoun complements, not genitive ones. The interplay between number and case marking in the object position raises interesting questions that are, however, beyond the scope of this paper.

c. Minä huomaa-n Mauri-**n**.
I.NOM notice-1SG Mauri-ACC
"I notice Mauri."

d. Minä huomaa-n [hänen lähte-nee-**n**].
I.NOM notice-1SG 3SG.GEN leave-NUT-ACC
"I notice [that] s/he [has] left."

e. Minä unohd-i-n **sen**.
I.NOM forget-PAST-1SG 3SG.ACC
"I forgot it."

f. Minä unohd-i-n [hänen lähte-nee-**n**].
I.NOM forget-PAST-1SG 3SG.GEN leave-NUT-ACC
"I forgot [that] s/he [had] left."

The data in (15) uphold this nominal analysis. When the subject of the participial clause is coreferential with the matrix subject, the embedded subject is phonologically null, and the participle bears a possessive suffix that identifies the person/number features of the null subject, as in (15a). In a possessive NP where the possessor is coreferential with the clausal subject, the possessive pronoun is also null, and its features are marked on the possessed NP with a possessive suffix, as in (15b).

(15) a. Pekka sano-o [heittä-nee-**nsä** pallo-n sieppari-lle].
Pekka.NOM say-3SG throw-NUT-**3Poss** ball-ACC catcher-ALL
"Pekka says [that] he threw the ball to the catcher."

b. Pekka halua-a [pallo-**nsa**].
Pekka.NOM want-3SG ball-**3Poss**
"Pekka wants his ball."

These distributional and morphological criteria seem to suggest that at least the embedded participle should be analyzed under the category noun. However, it must be remembered that the participle even in the embedded form always manifests the verbal properties introduced in section 1.1. The embedded participial also differs from regular nouns in a number of other ways. First, the total lack of case variation on the participial head exhibits restrictiveness atypical of a Finnish NP.

Whereas object NPs normally have both accusative and partitive forms, and while NPs obligatorily appear partitive-marked under negation, the

morphological form of the participial head never changes. In other words, the object participle always appears in the accusative. (16) contrasts a lexical NP object with an embedded participle clause.

(16) a. Minä e-n tiedä tarina-**a** /*-**n**.
I.NOM NEG-1SG know story-**PART** /***ACC**
"I don't know the story."

b. Minä e-n tiedä [hänen lähte-nee-**n** /*-**tä**].
I.NOM NEG-1SG know 3SG.GEN leave-NUT-**ACC** /***PART**
I don't know [that] s/he [has] left."

In terms of distribution, although the participial clause occurs in the direct object and predicate noun positions, as in (17c, d), there are other noun positions in which the construction can never appear, such as the subject or oblique object positions in (17a, b). The *-minen* nominal in (18) shows no such restriction: the form is legitimate in any regular noun site.

(17) a. ***[Las-te-n heittä-nyt pallo-a]** suututt-i herra Gustavssoni-n.
child-PL-GEN throw-NUT ball-PART anger-PAST.3SG Mr. Gustavsson-ACC
"Children [having] thrown ball angered Mr. Gustavsson." (??)

b. *Minä omist-i-n iltapäivä-n **[siivon-nee-ni-lle**
I.NOM devote-PAST-1SG afternoon-ACC clean-NUT-1SG.POSS-ALL
toimisto-n].
office-GEN
"I devoted the afternoon to cleaning the office."

c. Minä sano-i-n **[katsel-lee-ni elokuva-n]**.
I.NOM say-PAST-1SG watch-NUT-1SG.POSS movie-ACC
"I said [that] I watched the movie."

d. Minä o-len **[etsi-nyt kirjoitusvirhe-i-tä koko päivä-n]**.
I.GEN be-1SG search-NUT typo-PL-PART all day-ACC
"I've looked for typos all day."

(18) a. **Pallo-n heittä-minen** viihdyttä-ä laps-i-a.
ball-GEN throw-DEVN entertain-3SG child-PL-PART
"Ball-throwing entertains children."

b. Minä pidä-n **elokuv-ie-n katsele-mise-sta**.
I.NOM like-1SG movie-PL-GEN watch-DEVN-ELA
"I like watching movies."

c. Minä omist-i-n iltapäivä-n **toimisto-n siivoa-mise-lle.**
I.NOM devote-PAST-1SG afternoon-ACC office-GEN clean-DEVN-ALL
"I devoted the afternoon to cleaning the office."

d. Minun lempiharrastukse-ni on **kirjoitusvirhe-ide-n etsi-minen.**
I.GEN favorite.hobby-1SG.POSS be.3SG typo-PL-GEN search-DEVN
"My favorite hobby is searching for typos."

A second diagnostic, topic raising, refers to the well-known characteristic of Finnish syntax that fills the preverbal position with almost any nominal in the sentence (cf. e.g. Vilkuna 1989). (19) illustrates some of the possibilities: in addition to the main clause subject in (19a), the subject, the object, or an oblique from the embedded participial clause may move to fill the matrix clause Topic position, as in (19b-d). This movement provides a diagnostic for identifying noun-like entities, since only NPs can fill the Topic position, not finite verbs, adjectives, or clearly adverbial elements like manner adverbs.

(19) a. **Minä** tiedä-n [Emili-n pelan-nee-n usein tennis-tä].
I.NOM know-1SG Emil-GEN play-NUT-ACC often tennis-PART
"I know [that] Emil [has] often played tennis."

b. **Emili-n**$_S$ tiedä-n [t_S pelan-nee-n usein tennis-tä] minä.[8]
Emil-GEN know-1SG play-NUT-ACC often tennis-PART I.NOM
"I know [that] Emil [has] often played tennis."

c. **Tennis-tä**$_O$ tiedä-n [Emili-n pelan-nee-n usein t_O] minä.
tennis-PART know-1SG Emil-GEN play-NUT-ACC often I.NOM
"I know [that] Emil [has] often played tennis."

d. **Eilen aamu-lla**$_{OBL}$ tiedä-n [Emili-n pelan-nee-n
yesterday morning-ADE know-1SG Emil-GEN play-NUT-ACC
tennis-tä t_{OBL}] minä.
tennis-PART I.NOM
"I know [that] Emil played tennis yesterday morning."

(20) shows that, like an NP, the *-minen* nominal occurs in the main clause Topic position felicitously.

(20) a. **[Tennikse-n pelaa-mise-sta]**$_O$ pitä-ä Emil t_O.
play-DEVN-ELA tennis-GEN like-3SG Emil.NOM
"Emil likes playing tennis."

8 Underlining is used to indicate intonational prominence.

b. **[Toimisto-n siivoa-mise-n]**$_{O}$ jät-i-n minä t_{O} iltapäivä-lle.
office-GEN clean-DEVN-ACC leave-1SG.PAST I.NOM afternoon-ALL
"I left cleaning the office for the afternoon."

The participial structures do not exhibit this nominal behavior, since neither the participial head alone nor the participial clause as a whole can fill the main clause Topic position, as shown in (21).

(21) a. ***Pelan-nee-n**$_{NUT}$ tiedä-n [Emili-n t_{NUT} usein tennis-tä] minä.
play-NUT-ACC know-1SG Emil-GEN often tennis-PART I.NOM
"I know [that] Emil [has] often played tennis."

b. ***[Emili-n pelan-nee-n usein tennis-tä]**$_{XP}$ tiedä-n minä t_{XP}.
Emil-GEN play-NUT-ACC often tennis-PART know-1SG I.NOM
"I know [that] Emil [has] often played tennis,"

Furthermore, the fact that NPs can be extracted from participial clauses differentiates them from regular possessive NPs and *-minen* nominals. As shown in (22), neither of the latter NP types permits the extraction of internal constituents for topicalization, comparable to the legitimate movement out of participle clauses illustrated earlier in (19).

(22) a. ***Emili-n**$_{S}$ ihaile-n [t_{S} tennikse-n pelaa-mis-ta] minä.
Emil-GEN admire-1SG tennis-GEN play-MINEN-PART I.NOM
"I admire Emil's tennis playing."

b. ***Tennikse-n**$_{O}$ ihaile-n [Emili-n t_{O} pelaa-mis-ta] minä.
tennis-GEN admire-1SG Emil-GEN play-MINEN-PART I.NOM
"I admire Emil 's tennis playing."

c. ***Kirja-n**$_{S}$ löys-i-n [t_{S} kanne-n] minä.
book-GEN find-PAST-1SG cover-ACC I.NOM
"I found the cover of the book."

A further NP movement process, the possibility of reordering the complements of a ditransitive verb, differentiates between regular nouns and the participle. In Finnish double object constructions, the two NP objects may reorder freely, as in (23).

(23) a. Hän kerto-i **asia-nsa** **lääkäri-lle**.
3SG.NOM tell-PAST.3SG concern-3POSS doctor-ALL
"She told her concern to the doctor."

b. Hän kerto-i **lääkäri-lle** **asia-nsa**.
3SG.NOM tell-PAST.3SG doctor-ALL concern-3POSS
"She told the doctor the/her concern."

As would be expected based on the general noun-like character of the *-minen* nominal, it can similarly be transposed with another NP object.

(24) a. Lasse kerto-i **minulle** **[Johanna-n juokse-mise-sta]**.
Lasse.NOM tell-PAST.3SG I.ALL Johanna-GEN run-DEVN-ELA
"Lasse told me about Johanna's running [in the races]."

b. Lasse kerto-i **[Johanna-n juokse-mise-sta]** **minulle**.
Lasse.NOM tell-PAST.3SG Johanna-GEN run-DEVN-ELA I.ALL
'Lasse told me about Johanna's running [in the races]'

If the participial clause were functioning as a regular NP object in the embedded position, we would expect it to undergo this same alternation effortlessly. Yet (25) shows that neither the participial head nor the participial clause can be reordered with a second NP object.

(25) a. Hän kerto-i **lääkäri-lle** **[ol-lee-nsa sairaa-na]**.
3SG.NOM tell-PAST.3SG doctor-ALL be-NUT-3POS sick-ESS
"She told the doctor [that] she [had] been sick."

b. *Hän kerto-i **[ol-lee-nsa sairaa-na]** **lääkäri-lle**.
3SG.NOM tell-PAST.3SG be-NUT-3POSS sick-ESS doctor-ALL
"She told the doctor [that] she [had] been sick."

c. *Hän kerto-i **ol-lee-nsa$_{NUT}$** **lääkäri-lle** **[t$_{NUT}$ sairaa-na]**.
3SG.NOM tell-PAST.3SG be-NUT-3POSS doctor-ALL sick-ESS
"She told the doctor [that] she [had] been sick."

Up to this point we have seen that the participial head displays a set of verbal traits, yet in the embedded clause construction it behaves morphologically (almost) like, and appears in a position typical of, a noun. At the same time, neither the participial head nor the entire participial clause seems to have normal nominal properties, since the participial structures do not exhibit normal noun-like case variation, nor can they appear in all nominal positions or undergo ordinary nominal movement processes.

2.3 The adjectival properties of the participle

The nominal morphology of the participle can also be accounted for by classifying the form as an adjective. Although the NP-like position of the embedded participial clause appears to contradict such a proposal, there are several advantages to this new proposal. Table 3 summarizes the adjective-like characteristics of the participial structures.

Table 3

ADJECTIVAL PROPERTIES OF THE PARTICIPLE STRUCTURES
• Occur in adjective positions;
• Bear adjectival morphology (case, nominal number, possessive suffix);
• Cannot topicalize;
• May assign relevant quirky case.

With the exception of the object-like position, distributional evidence supports this analysis, as participial clauses can be found in various adjective positions: as prenominal adjectives (26), in the predicative position (27), modifying another adjective (28), and in resultatives (29).

(26) a. **iloinen** lapsi
happy child
"a happy child"

b. [**iloise-sti hymyil-lyt**] lapsi
happy-ADV smile-NUT child
"a child [who] smiled happily"
(lit. "a happily-smiled child")

c. **ilois-i-lle** laps-i-lle
happy-PL-ALL child-PL-ALL
"for [the] happy children"

d. [**iloise-sti hymyil-le-i-lle**] laps-i-lle
happi-ADV smile-NUT-PL-ALL child-PL-ALL
"for the children [who] smiled happily"
(lit. "for the happily-smiled children")

(27) a. Emmi on **iloinen**.
Emmi.NOM be.3SG happy
"Emmi is happy."

b. Emmi on **juos-sut ulos**.
Emmi.NOM be.3SG run-NUT out
"Emmi has run out."

c. Lapse-t o-vat **iloise-t**.
child-PL.NOM be-3PL happy-PL.NOM
"The children are happy."

d. Lapse-t o-vat **juos-see-t** **ulos**.
child-PL.NOM be-3PL run-NUT-PL.NOM out
"The children have run out."

(28) a. Liisa maala-a talo-nsa **keltaise-ksi**.
Liisa.NOM paint-3SG house-3POSS yellow-TRAN
"Liisa paints her house yellow."

b. Liisa maala-a talo-nsa [**silmä-ä häikäise-vä-ksi**].
Liisa.NOM paint-3SG house-3POSS eye-PAR dazzle-VA-TRAN
"Liisa paints her house [so that it becomes] eye-dazzling."

(29) a. Liisa maala-a talo-nsa **iloise-n** keltaise-ksi.
Liisa.NOM paint-3SG house-3POSS happy-GEN yellow-TRAN
"Liisa paints her house a happy yellow."

b. Liisa maala-a talo-nsa [**silmä-ä häikäise-vä-n**] keltaise-ksi.
Liisa NOM paint-3SG house-3POSS eye-PAR dazzle-VA-GEN yellow-TRAN
"Liisa paints her house eye-dazzlingly yellow."

In each of these positions the participial head bears the morphological markings of a comparable adjective: the prenominal participle agrees with the head noun in number and case, the predicate participial agrees with the subject in number, and the resultative and adjective modifier participles bear the same case marking, translative or genitive, as adjectives in the corresponding positions do. Hence, most distributional and morphological evidence from the participle data provide a good match with adjectival categorization.

The embedded participial clauses that occur in object-like position seem to present a problem for this analysis. Verbs like *tietää*, 'know', *uskoa*, 'believe', *muistaa*, 'remember', and *unohtaa*, 'forget', do not normally take adjectival complements.

(30) a. *Minä tiedä-n (Liisa-n) iloinen.
I.NOM know-1SG Liisa-GEN happy
"I know [that] Liisa [is] happy."

b. *Minä usko-n (sinun) näköinen.
I.NOM believe-1SG you.GEN looking
"I believe [that] you [are] like [?]" (??)

On the other hand, such verbs do readily accept finite clausal complements.

(31) Minä tiedä-n /huomaa-n /unohd-i-n että hän läht-i.
I.NOM know-1SG /notice-1SG /forget-PAST-1SG that 3SG.NOM leave-PAST.3SG
"I know/notice/forgot that s/he left."

I conclude that the ability of these verbs to appear with participial clause complements but not lexical adjectives is due to a semantic, not categorial restriction: I assume that the verbs select for a complement that is either a person, place, thing (a group consistent with NP categorization), or proposition (a group that combines both finite clauses and non-finite participial clauses), but they do not select for properties (i.e. lexical adjectives). Consequently, the occurrence of participials in object position is due to their clausal, not adjectival, nature. Distributional evidence, then, is supportive of an adjectival account of participles.

The restriction on topicalization movement of the participle, discussed in section 2.2, is also consistent with an adjectival designation. (32) shows that regular adjectives can never serve as Topics. If either the participle or the participial clause is adjectival, we would not expect these forms to be able to topicalize. This expectation is borne out, as in the data in (33).

(32) a. *__Vihainen__$_A$ on Jussi t_A.
angry be.3SG Jussi.NOM
"Jussi is angry."

b. *__Keltaise-ksi__$_A$ maala-a talo-nsa Kari t_A.
yellow-TRAN paint-3SG house-3POSS Kari.NOM
"Kari painted his house yellow."

(33) a. *__Lähte-nyt__$_{NUT}$ on Jari t_{NUT}.
leave-NUT be.3SG Jari.NOM
"Jari has left."

b. *[__Kari-n maalan-nee-n talo-nsa keltaise-ksi__]$_{XP}$ väittä-ä
Kari-GEN paint-NUT-ACC house-3POSS yellow-TRAN claim-3SG
Tiina t_{XP}.
Tiina.NOM
"Tiina claims [that] Kari painted his house yellow."

c. *[__Silmä-ä häikäise-vä-ksi__]$_{XP}$ maala-a talo-nsa Liisa t_{XP}.
eye-PART dazzle-VA-TRAN paint-3SG house-3POSS Liisa.NOM
"Liisa paints her house [so that it becomes] eye-dazzling."

If some level of the participial structure is identified as bearing adjectival categorial content, which of the two levels of syntactic representation has these properties: the participle itself, or the participial clause? We find that the participial head exhibits a number of properties that preclude its categorization as an adjective. It differs from regular adjectives in the ways summarized in Table 4.

Table 4

NON-ADJECTIVAL PROPERTIES OF THE PARTICIPIAL STRUCTURES
• Bear temporal content (present or past reference);
• Are modified by adverbs, never adjectives;
• Assign a full range of object cases (accusative, partitive, quirky);
• Do not form comparatives or superlatives.

The first three properties come from the original list of verbal characteristics. Temporal content, adverb modification and case assignment are qualities of the participial head that are not compatible with an adjectival category label. First, adjectives do not have temporal information that would place an event on a time line.

Second, (34) shows that even in the most adjectival positions, the participle is always modified by the *-sti* adverb, not an adjective. (34b) is especially revealing in this respect, since the participial here seems to act as a adjective that modifies another adjective, but even in that position the participle itself takes an adverbial modifier. Comparable adjectives in (35) establish that adjectives are always modified by other, genitive-marked adjectives.

(34) a. Emmi on juos-sut **kiukkuise-sti** ulos.
Emmi.NOM be.3SG run-NUT angry-ADV out
"Emmi has run out angrily."

b. Liisa maala-a talo-nsa [**kivuliaa-sti** silmä-ä häikäise-vä-n]
Liisa.NOM paint-3SG house-3POSS painful-ADV eye-PAR dazzle-VA-GEN
keltaise-ksi.
yellow-TRAN
"Liisa paints her house [so that it becomes] painfully eye-dazzling yellow."

(35) a. Emmi on **selittämättömä-n** iloinen.
Emmi.NOM be.3SG inexplicable-GEN happy
"Emmi is inexplicably happy."

b. Liisa maala-a talo-nsa **iloise-n** keltaise-ksi.
Liisa NOM paint-3SG house-3POSS happy-GEN yellow-TRAN
"Liisa paints her house a happy yellow."

The object case assignment capacity of participles is also a characteristic not shared by any other adjective in the language. As illustrated in (36), morphologically related verbs, participles and adjectives may assign the same quirky case to their complements (in this case elative).

(36) a. Tuo äiti **ylpeile-e** aina tyttäre-**stä**-än.
that.NOM mother.NOM pride-3SG always daughter-ELA-3POSS
"That mother always prides [herself] on her daughter."

b. Minä tiedän [tuo-n äidi-n **ylpeil-lee-n** aina
I.NOM know that-GEN mother-GEN pride-NUT-ACC always
tyttäre-**stä**-än].
daughter-ELA-3POSS
"I know [that] that mother [has] always prided [herself] on her daughter."

c. Tuo äiti on aina **ylpeä** tyttäre-**stä**-än.
that.NOM mother.NOM be.3SG always proud daughter-ELA-3POSS
"That mother is always proud of her daughter."

However, (37) shows that when an adjective assigns to its argument a lexical case such as allative, and a morphologically related verb assigns accusative or partitive case to its complement, the analogous participle assigns case like the verb, not like the adjective. The participle can assign accusative, partitive and quirky case to its complement, exactly as its finite verbal counterpart can.

(37) a. Minä olen kiitollinen **sinulle** **/*sinua** avu-sta.
I.NOM be-1SG grateful you.ALL /*you.PART help-INE
"I am grateful to you for help."

b. Minä kiitä-n **sinua** **/*sinulle** avu-sta.
I.NOM thank-1SG you.PART /*you.ALL help-INE
"I thank you for [your] help."

c. Minä luulin [hänen kiittä-nee-n **sinua** **/*sinulle** avu-sta].
I.NOM thought 3SG.GEN thank-NUT-ACC you.PART / *you.ALL help-INE
"I thought [that] she [had] thanked you for [your] help."

The case patterns found with the underived adjectives in (38) further confirm that, unlike the participles, no Finnish adjective can assign a case other than a quirky case to its complement.

(38) a. Into on perso /nirso /allerginen työ-**lle**
Into.NOM be.3SG eager /choosey /allergic work-ALL
/*työ-**n** /*työ-**tä**.
/*work-ACC /*work-PART
"Into is eager to/ choosey of/ allergic to work."

b. Rauha on varma asia-**sta** /*asia-**n** /*asia-**a**.
Rauha.NOM be.3SG sure matter-ELA /*matter-ACC /*matter-PART
"Rauha is sure of the matter."

c. Sari on kuuluisa ruoa-**sta**-an /*ruoka-nsa
Sari.NOM be.3SG famous food-ELA-3POSS /*food-ACC.3POSS
/*ruoka-**a**-nsa.
/*food-PART-3POSS
"Sari is famous for her food."

A final diagnostic to distinguish the participial head from regular adjectives comes from degree modification. Although some participles have comparative and superlative forms, as in (39), (40) shows that this process is not productive.

(39) a. Tämä talo on paljon **rappeutu-nee-mpi** kuin tuo.
this.NOM house.NOM be.3SG much decay-NUT-COMP than that.NOM
"This house is much more decayed than that one."

b. Sofia on **innostu-nee-mpi** ehdotukse-sta kuin minä.
Sofia.NOM be.3SG excited-NUT-COMP suggestion-INE than I.NOM
"Sofia is more excited about the suggestion than I [am]."

c. Gateau on huomattavasti **hyvinsyö-nee-mmä-n**
Gateau.NOM be.3SG considerably better.eat-NUT-COMP-GEN
näköinen kuin Anaïs.
like than Anaïs.NOM
"Gateau looks considerably more well-fed (lit. 'more well-eaten')
than Anaïs."

(40) a. *Tämä kärpänen on **kuol-lee-mpi** kuin tuo.
this fly.NOM be.3SG die-NUT-COMP than that
"This fly is more dead [lit. died] than that one."

b. *Kaisa on **rullaluistel-lee-mpi** tänään kuin eilen.
Kaisa.NOM be.3SG rollerblade-NUT-COMP today than yesterday
"Kaisa is more rollerbladed today than yesterday."

More importantly, (41) demonstrates that when a participial head has modifiers and/or complements, that is, when it acts as a verbal head forming a full clause, the participle can never take part in degree modification.

(41) a. ***[Pallo-a heittä-nee-mpi]** lapsi voitt-i kilpailu-n.
ball-PART throw-NUT-COMP child.NOM win-PAST.3SG competition-ACC
"The child [who] threw the ball more won the competition."

b. ***[Sitä vanha-a kala-a ahneesti syö-ne-in]**
that-PART old-PART fish-PART greedily eat-NUT-SUP.NOM
kissa sairastu-i.
cat.NOM get.sick-PAST-3SG
"The cat [who] most ate that old fish greedily got sick."

c. *Tämä **[perustuksi-lta-an rappeutu-nee-mpi]** talo
this.ACC foundation-ABL-3POSS decay-NUT-COMP house.ACC
pure-ta-an ensin.
demolish-PASS-AGR first
"This house [which is] more decayed in its foundation will be demolished first."

In section 2, I have shown that the participial head clearly displays verb-like syntactic properties, while the participial clause as a whole occurs in adjectival positions. The head of the clause, the participle, always bears adjectival morphology, but does not exhibit adjectival characteristics beyond the morphology. The scope of the categorial problem introduced in the data in (1) has narrowed: categorization of the participle as a noun has been eliminated from consideration, and it has been shown that the verbal properties relate directly to the participial head, while the adjectival qualities are linked to the clause as a whole.

3. A syntactic feature analysis of the Finnish participle constructions

3.1 Previous lexical accounts of participial structures

The categorially ambiguous nature of participials is not unique to Finnish. Examples in (42-47) illustrate comparable participial problems in several, mostly unrelated languages. These nominalised forms exhibit characteristics very similar to Finnish: all the constructions contain a verb-like clausal head that takes a case-marked object, and possibly a lexical subject, yet also manifest nominal and/or adjectival properties, by the position and/or overt morphological marking (e.g. for case, nominal number or possession) of the nominalized head.

(42) English past (*-en*) and present participles (*-ing*):
- a. verbal: Greta has forgott**en** our appointment again.
- b. adjectival: the forgott**en** promise
- c. verbal: Here the princesses are danc**ing** again.
- d. adjectival: The danc**ing** bear entertained the princesses.
- e. nominal: Danc**ing** is the favourite pastime of these princesses.

(43) German:
- a. der [den Ball werf-**ende**] Junge
  the.NOM the.ACC ball throw.**PRES.PRTC** boy.NOM
  "the boy [who is] throwing the ball"

- b. die [dem Fremden gehör-**ende**-n] Sachen
  the.PL.NOM the.DAT[9] stranger.DAT belong-**PRES.PRTC**-PL thing-PL.NOM
  "the things [that] belong to the stranger"

(44) Inuktitut (Jensen and Johns 1988):
Angut arna-mik kunik-**si**-vuq.
man.ABS woman.ACC kiss-ANTIPASS-INTR3SG[10]
"The man kisses the woman." / "The man who kissed the woman"

(45) Quechua (Lefebvre and Muysken 1988):
- a. Pidru hamu-**sqa**-n-ta yacha-ni.
  Pedro come -**RES.NOM**[11] -3-ACC know -1
  "I know [that] Pedro came."

9 DAT -dative

10 ABS - absolutive; ANTIPASS - antipassive; INTR - intransitive

11 RES.NOM - resultative nominalizer

b. Warmi hamu-**q**-ta riku-ni.
woman come-AG.NOM[12]-ACC see-1
"I see the woman [who] is coming."

(46) Turkish (Yükseker 1997):

a. [Hitay-in oku-**yacağ**-i] kitap
Hitay-3SG.GEN read-FUT-POSS book
"the book [which] Hitay will read"

b. (Ben) [Hitay-in bu kitab-i oku-**yacağ**-in-i] bil-iyor-um.
I.NOM Hitay-3SG.GEN this book-ACC read-FUT-POSS-ACC know-PRES-1SG
"I know [that] Hitay will read this book."

One solution proposed in the literature for such categorial problems has been to treat the phenomenon as lexical, and to establish a single lexical category for each deverbal participle form. For instance, an intense debate was conducted in the literature in the late 1980's over the English *-ing* participles, to determine how they could be uniformly categorized as verbs (e.g. Emonds 1985, Brekke 1988, Milsark 1988, Borer 1990). This view of the classification of participles is problematic, since by definition participles differ from normal verbs, in their distribution as well as in other properties (e.g. their argument taking properties). To accommodate a single category analysis, it becomes necessary to posit in the grammar of a language various exceptional conditions and restrictions to account for the differences between verbs and participles. I conclude that once it is acknowledged that participials like the Finnish ones are distinct from regular verbs in that they exhibit simultaneous categorial duality within one structure, a more general and precise account draws on the parallels in the behavior exhibited by the participles and the major lexical categories. Hence, I continue to assume that the Finnish participles are categorially complex.

An alternative lexical solution to categorial complexity is that proposed, for example, for Quechua nominalizations in Lefebvre and Muysken 1988 and for Spanish infinitives in Yoon and Bonet-Farran 1991. In those accounts the nominalized verb is identified as [+N, +V], but only one of these features is projected in any given structure. Such an analysis of the Finnish data is not possible, since the participial suffixed form exhibits both verbal and nominal/ adjectival characteristics simultaneously. Under the lexical analysis, a non-finite form should be expected to behave and function as a noun in one construction and as a verb in another. Consequently, the non-finite suffix can be classified as either a noun or a verb, but not both at the same time. Although

12 AG.NOM - agentive nominalizer

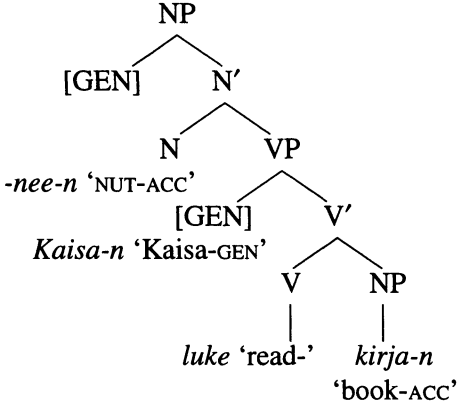
such analyses account for categorial ambiguity in some languages, they cannot be extended to explain the Finnish data.

3.2 Previous syntactic accounts of participial structures

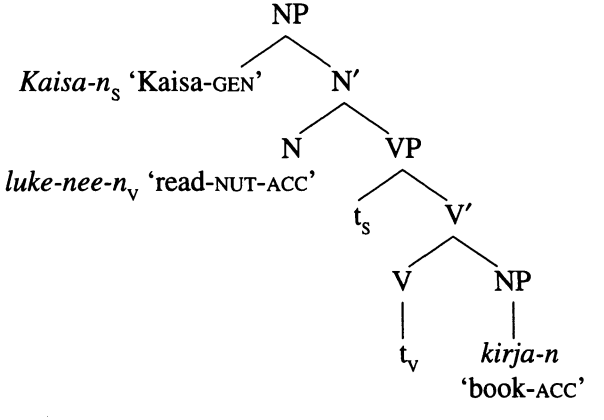
Traditional syntactic analyses of the categorial ambiguity of participials assign the verbal properties to a normal VP projection whose embedding under either a NP or an AP structure is said to account for the non-verbal distribution and morphology. This type of an analysis of the Finnish embedded participle has been put forth in Vainikka 1989 (cf. also Trosterud 1993); a similar account of Modern Hebrew and Standard Arabic can be found in Hazout 1990 and 1995.

(47) a. (Minä usko-n) **[Kaisa-n luke-nee-n kirja-n]**.
I.NOM believe-1SG Kaisa-GEN read-NUT-ACC book-ACC
"(I believe) [that] Kaisa [has] read the book."

b.



c.



The first problem with this approach is that it fails to acknowledge the unique nature of the nominal lexical head that hosts the participial verb. I have shown that the participial structure does not behave like a regular NP with regard to morphological changes, distribution or movement processes. Under the analysis shown above, these differences go unexplained. On the other hand, these participial constructions would appear to be exceptional in that they present the only instance in Finnish of a noun (or adjective) taking a VP complement. Vainikka and Trosterud's accounts do not explain, however, what permits this unusual process.

Variants of this type of analysis label the functional projection that dominates VP not NP (or AdjP) but 'Participle Phrase' (this was my own convention in earlier versions of this work, e.g. Koskinen 1995). Such analyses thus propose a new type of category. This approach addresses the unique character of participial constructions, but problems begin to arise when the term 'Participle Phrase' is used for projections in different languages. Since the properties of participial constructions vary relatively widely, it is not clear what the meaning or content of the category label would be. Potentially, the particular category type that is realized in Finnish may not exist in any other language. In order to allow for the diversity found in languages, various subtypes of 'Participle Phrase' would be needed. Consequently, this approach adds considerably to the general complexity of grammatical options that must be permitted by Universal Grammar, yet at the same time fails to provide any generalization about the functioning of participial structures cross-linguistically.

The account presented here recognizes the insights in both types of syntactic accounts of participial constructions, and takes such analyses as its starting point. It is obvious that both a nominal/adjectival level of structure as well as a VP level are needed to explain the behavior of the participial clauses. Moreover, it is clear that the nominal/adjectival level of structure is distinct from normal NPs and AdjPs, and that some unique nomenclature is needed to identify this phrase. My view is that the only way to identify the exact nature of these participial (or other non-finite) projections is to extract the syntactic feature complexes which they comprise. My research does not contradict existing work on non-finite structures, but rather provides a more detailed and precise account.

3.3 A syntactic feature account of participial structures

The analysis adopted in this paper takes an approach which is entirely different from the earlier approaches to accounting for the categorial disorder of participles. I propose to build up syntactic structure based only on those

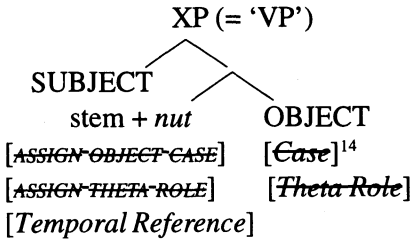
morpho-syntactic features that are attested in each construction. I assume that Universal Grammar endows us with a limited inventory of such features. On the one hand, however, I abandon current assumptions about combined properties of heads, so that if for instance we find a [Tense] feature in the tree, this does not automatically posit a [Nominative subject case] feature, as is common in current work. Conversely, I assume that syntactic features can combine on a single head, when no evidence to the contrary is found. I use distributional data to determine how many separate positions are required for the pertinent features. In some cases this results in the combination of features that in other current research are assumed to project their own independent maximal projections. Hence, my work both aims to reduce syntactic features to only those that are clearly attested, and to reduce the number of positions (i.e., maximal projections) to only those that we can clearly identify.

The issue of morphological realization of syntactic features is an integral aspect of this analysis. Like Chomsky 1995, I assume that lexical items are inserted into syntactic structures fully inflected, although notably only in terms of their functional feature content. Syntactic derivation is driven by the need to check this inflectional feature content. Unlike the view of morphology in Chomsky 1995, then, I assume that syntactic computation deals only with feature bundles, and actual vocabulary insertion takes place after Spell-Out (in the spirit of Distributed Morphology of Halle and Marantz 1993 and others).

The building of the participial construction starts from the participial head, a verbal stem suffixed with *-nut*. This form was shown to behave much like a regular verbal head in that it places selectional restrictions and assigns thematic roles to its complements, assigns a full range of object cases, and bears temporal information that locates a described event on a time line. The representation of these properties as syntactic features would identify the participial head as the following feature bundle: [ASSIGN OBJECT CASE], [ASSIGN THETA ROLE], and [*Temporal Reference*].[13] A lexical element that combines these features is normally associated with the label "transitive verb". However, in order to avoid the problems that arise from working with preconceived notions about category labels, in the tree representations I use abstract labels such as XP, YP, and ZP. For easier processing, the more familiar projection types that my structures mostly resemble are identified in parentheses.

13 Features marked in small capital letters (e.g. [TEMPORAL REFERENCE]) are abstract functional features that check inflectional features; those in italics (e.g. [*Temporal reference*]) are inflectional features that must undergo movement to a checking position.

(48)



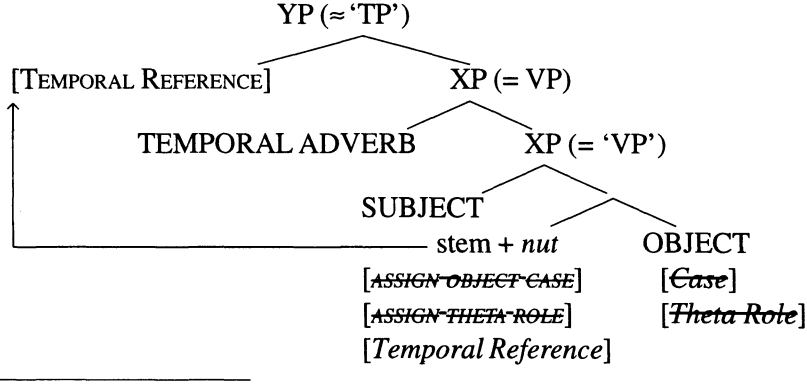
The participial head must move out of its base-generated Merge position.[15] This is diagnosed through the position of temporal adverbs like *usein*, 'often', and *aina*, 'always'. Temporal adverbs occur to the right of the participial head. It is a standard assumption that temporal adverbs adjoin to VP (e.g. Holmberg 1989), which indicates that the participle must have moved out of VP.

(49) a. Minä tiedä-n [Emili-n pelan-nee-n **usein** tennis-tä].
I.NOM know-1SG Emil-GEN play-NUT-ACC often tennis-PART
"I know [that] Emil [has] often played tennis."

b. Minä usko-n [las-te-n leikki-nee-n **aina** litta-a].
I.NOM believe-1SG child-PL-GEN play-NUT-ACC always tag-PART
"I believe [that] children [have] always played tag."

What is the syntactic motivation for this movement? It has already been established that the participial head bears a [*Temporal Reference*] feature, and, according to the theory adopted, such an inflectional feature must be checked against an abstract functional counterpart. I propose that the syntactic head dominating XP bears the matching abstract [TEMPORAL REFERENCE] feature. The verbal head moves to the Y position overtly.

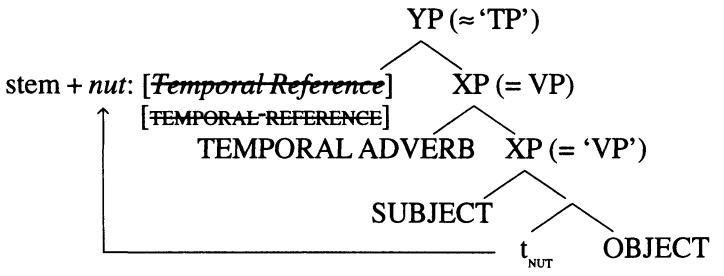
(50) a.



14 In the notation, features are crossed out when checked.

15 As in Chomsky 1995, I assume that movement of inflectional features is forced, but that such movement may be overt (all features in a single matrix move along with the one to be checked) or covert (only the relevant feature moves to be checked).

b.



Under an approach that relies on categorial labels, we might be tempted to identify the YP (i.e. [TEMPORAL REFERENCE]) projection as TP. However, the participial temporal projection differs from the finite temporal TP projection in that no nominative subject case assignment takes place. Rather than classify YP as a "defective TP" (as in, for instance, Vainikka 1994), I simply acknowledge that the syntactic characteristics of the participial construction warrant the presence of the abstract feature [TEMPORAL REFERENCE] in the structure, and that this feature attracts the participial head in overt syntax. No other features are posited until clear evidence is presented.

The features identified above account for the verbal behaviors of the participle. The YP projection is responsible for the realization of temporal information. I also assume that adverbial modification is made possible by one of the verbal features, so that adverb-like elements are sensitive to a feature of the extended projection of XP. Passivization is licenced by the participle's assignment of an external theta-role. Koskinen 1993 showed that the Finnish impersonal passive requires a null *pro* subject with the features [Human], [Third Person], [Plural]. A nominal such as the *-minen* form does not assign an external theta role that can licence the null *pro* subject.

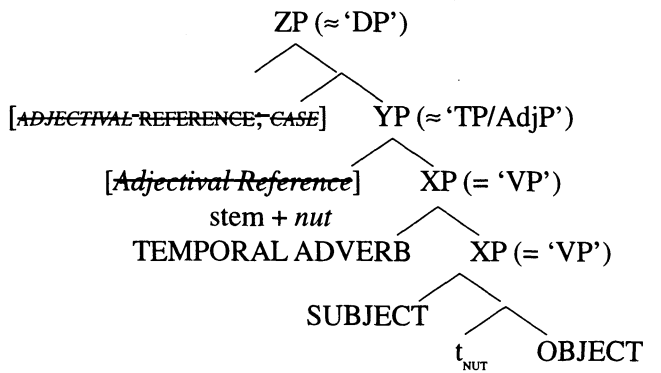
It was shown that the adjectival characteristics of the participial structure, morphological and distributional, are present at the clausal level, yet the participial head itself bears the nominal morphological marking (case, possessive suffix, nominal number). I suggest that these facts are straightforwardly accounted for by assigning the functional head Y the lexical adjectival feature [*Adjectival Reference*] in addition to its [TEMPORAL REFERENCE] feature. The Y head, then, is a hybrid of both lexical and functional features. There is no reason to suggest that these two features reside in two independent syntactic positions, as there is no evidence for separate specifier positions, nor is adjunction to two distinct positions possible. In order to minimize unnecessary structure, I propose that only one hybrid syntactic projection is present.

I assume that the [*Adjectival Reference*] feature of Y is an inflectional feature that, like the [*Temporal Reference*] feature of X, must be checked against

an abstract functional feature. Longobardi 1994 proposed that all nouns contain an analogous feature [*Nominal Reference*] which must be checked against [NUMBER] and [CASE]. I propose that [*Adjectival Reference*] can be checked by only one of these features. Morphological evidence from Finnish supports this claim, since all adjectives, including non-derived ones, bear at least nominal number marking, and, in most positions, also case affixation. In the embedded participle construction, the participial clause occurs in an argument position, and since arguments are canonically DPs (Chierchia 1996), i.e. case-feature bearing projections, the [*Adjectival Reference*] feature here must be checked by a [CASE] feature.[16] In the main clause construction, on the other hand, the participial functions as the predicate, and the minimal [NUMBER] feature checking suffices. In the prenominal position, concord agreement between the modifying participial and the head noun is required, by whatever mechanism forces such agreement between a modifying adjective and its head, and both [CASE] and [NUMBER] must be checked. Thus, the syntactic requirements of each construction in which the participial YP clause occurs determine the checking of the [*Adjectival Reference*] feature.

The structure of the embedded participial construction at this level of representation is as follows. A ZP projection distinct from YP is obligatory as the [*Adjectival Reference*] feature cannot be checked in its Merge position (Chomsky 1995). On the other hand, the checking movement of the [*Adjectival Reference*] feature to ZP is covert, since the participle's phonological features do not appear any higher than YP.

(51)



The ZP projection also contains other features in addition to [ADJECTIVAL REFERENCE]. The properties of the participial construction still to be accounted

16 Note, however, that although the case-bearing participial construction is a DP occurring in an argument position, it is not a "true" DP in a nominal sense, since it is not subject to rules such as partitive of negation, topicalization or complement transition, as shown in section 2.2.

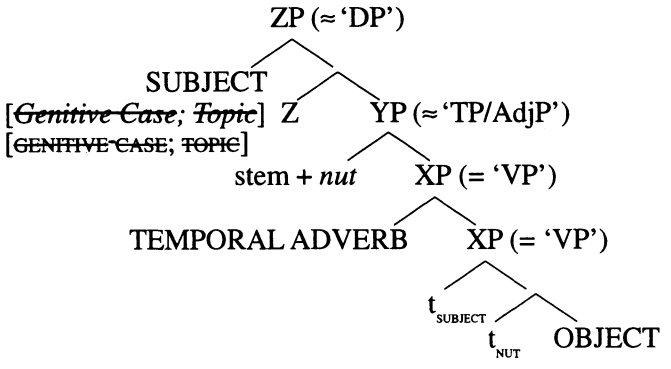
for include the genitive case-marking of the thematic subject of the participle, and the obligatory presence of some nominal in the pre-participle position. To account for the subject case marking, I suggest that the ZP projection functions as a normal DP-like position; consequently, its head contains a phonologically null [ASSIGN GENITIVE CASE] feature, which is checked by the matching feature of an NP in the specifier position of ZP. This case feature is equivalent to the genitive case found on possessor NPs in Finnish. In the participial construction, the embedded subject NP cannot check a nominative case feature in the construction, since no finite [ASSIGN NOMINATIVE CASE] feature is present. However, the subject can check a genitive case feature in the specifier position of ZP. This checking takes place covertly, since the subject need not overtly move to the pre-participial position. Rather, some other NP, an oblique or direct object in (52), regardless of its case marking (here allative and accusative), may fill this position. Hence the overt movement to [Spec, ZP] must be motivated by some other feature.

(52) a. (Minä unohd-i-n) [**Anna-lle** luvan-*nee*-n kirja-n sinun].
I.NOM forget-PAST-1SG Anna-ALL promise-NUT-ACC book-ACC you.GEN
"(I forgot) [that] you promised Anna the book."

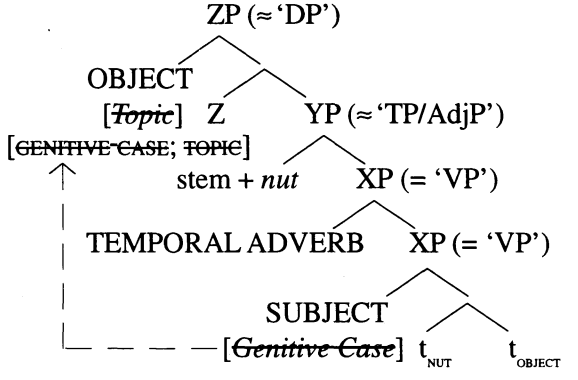
b. (Minä unohd-i-n) [**kirja-n** luvan-*nee*-n Anna-lle sinun].
I.NOM forget-PAST-1SG book-ACC promise-NUT-ACC Anna-ALL you.GEN
"(I forgot) [that] you promised Anna the book."

I assume that this overt movement to ZP is driven by the presence of a strong [TOPIC] feature that attracts some NP that bears a matching [*Topic*] feature. As shown in section 1.2, Finnish finite main clauses similarly require that the preverbal position be filled (cf. also Vilkuna 1989). The term 'Topic' here is taken to refer to the locus of what the clause is about, following Chafe 1976. The [TOPIC] feature of the ZP projection in embedded participial clauses ensures that the participle never occurs clause-initially. In the empty subject forms the null *pro* can check the [TOPIC] feature.

(53) a. embedded subject checks the [TOPIC] feature:

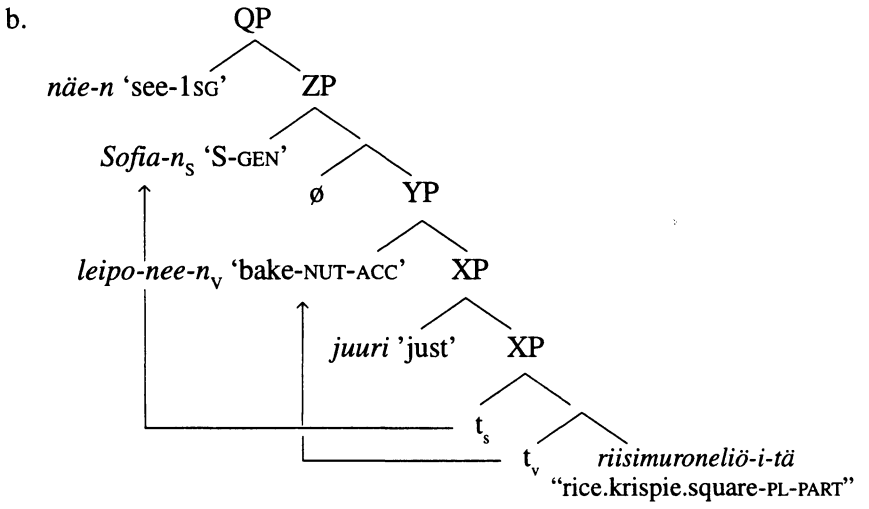


b. non-subject checks the [TOPIC] feature:



I assume that all three features, [ADJECTIVAL REFERENCE/CASE], [ASSIGN GENITIVE CASE] and [TOPIC] are checked within ZP, and that no higher projections are required. There is no evidence from morphology, distribution or movement to suggest that separate projections would be required, and according to the aims of this work, only positions deemed necessary are posited. (54) gives a sample derivation of an embedded participial clause.

(54) a. Minä näe-n Sofia-n leipo-nee-n juuri riisimuroneliö-i-tä.
I.NOM see-1SG Sofia-GEN bake-NUT-ACC just rice.krispie.square-PL-PART
"I see [that] Sofia [has] just baked Rice Krispie squares."



4. Conclusion

The central theoretical innovation in this analysis is the claim that the participial constructions contain hybrid lexical/grammatical heads that bear both a functional [Tense] feature and a lexical adjectival feature. A verb which moves into this position consequently takes on these adjectival traits. According to such a proposal, syntactic category changing is no longer restricted to morphological derivation, but may also take place during syntactic computation. The two types of deverbal nominal forms in the Finnish data, the *-minen* nominal and the past participle, exemplify the different possibilities. I propose that the distinctions in the behavior of the *-minen* nominal and the participle constructions arise because the two types of forms are derived at different levels of grammar. I have argued that the participial morphology is inflectional, and so takes part in syntactic computation. The morphological form of the *-minen* nominal, on the other hand, is derivational, and the internal structure of the deverbal form is not accessible to syntax. Hence, the *-minen* nominal enters syntax with the syntactic feature set comparable to an element normally categorized as a noun, while the syntactic feature set of the participle form equates it to a verb, and it gets its adjectival properties during syntactic computation.

This analysis of the Finnish participle constructions resolves a long-standing problem in the study of Finnish syntax, but the approach outlined here also forms the basis for the investigation of similar phenomena in other languages.

It is worth noting, however, that the particular properties of forms traditionally identified as "participles" vary quite dramatically from language to language. English prenominal participles, for instance, are unable to assign object case, in contrast with the unaffected case assignment ability of their Finnish counterparts, as shown in (55). (56) illustrates another difference: the English participles cannot occur in an embedded nominal-like structures.

(55) a. *The [yesterday a new expensive book bought] student is now broke.

b. [Eilen kallii-n uude-n kirja-n osta-nut] opiskelija
yesterday expensive-ACC new-ACC book-ACC buy-NUT student.NOM
on nyt rahaton.
is now penniless

(56) a. *I see [her baked Rice Krispie squares again].

b. (Minä näe-n) [hänen paista-nee-n taas riisimuroneliö-i-tä].
I.NOM see-1SG 3SG.GEN bake-NUT-ACC again rice.krispie.square-PL-PART

These differences show that the account presented for Finnish cannot be applied directly to the English data, but rather the syntactic properties of the English forms must be examined on their own merit (cf. e.g. Cowper 1995). This approach suggests that each categorially ambiguous form in any given language requires study on its own merit.

The approach to syntactic structure adopted here raises questions about learnability. If both the inventory and combination of syntactic features are allowed to vary cross-linguistically, we lose the restrictive advantages of ideas such as a universal functional tree structure along the lines proposed in, for instance, Chomsky 1991. This seems to lead to a learnability problem: how can a potentially infinite number of features and their amalgamations be constrained to make them learnable? It should be noted, however, that in terms of required features, the Finnish data support the view that Universal Grammar provides the child with a small stock of functional features whose potential presence is to be monitored. All the features that occur in the Finnish structures also commonly occur in other languages. The only exceptional aspect of the constructions under investigation is how these features combine. With regard to feature combinations, there are also clear trends. A comprehensive examination of finite and non-finite constructions in Finnish (Koskinen 1998) found that the category-changing hybrid node was always a temporal reference projection, and that the [TOPIC] feature is always housed on the highest nominal projection in the clause. Such generalizations provide neither an explanation

nor the principles necessary to restrict potential feature mixes, but they suggest that the system is rule-governed rather than random. More cross-linguistic data are needed in order to investigate whether these Finnish patterns are attested more widely, and what other blends are permitted, but the initial findings seem quite constrained and promising.

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