THE FINNISH POSSESSIVE SUFFIXES

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A distinctive feature of Finnish morphology is the possessive suffixes, which are found not only on possessed nouns, but also on adjectives, postpositions, and untensed verbs. Traditional grammars have taken the view that these suffixes arise through a rule of agreement with a genitive specifier, which may be subject to subsequent deletion rules. This paper shows that they are not agreement markers, but rather clitic allomorphs of the reflexive pronoun. X-bar theory is used to formulate rules governing their distribution.*

1. INTRODUCTION. On the surface, Finnish has two sets of reflexive forms. One set is the possessive suffixes, which appear cliticized to the head of a noun phrase, verb phrase, adjective phrase, or postpositional phrase. There are five of these suffixes: *-ni* 1sg., *-si* 2sg., *-nsa* 3sg./pl., *-mme* 1 pl., *-nne* 2pl. (The 3rd person suffix also has an allomorph *-Vn*, where V is a vowel copied from the stem.) The other set of reflexives is the full reflexive pronouns, which have the form *itse* + case + POSS, where *itse* is a nominal stem with the meaning 'self', occurring in many compounds and derivatives.[1] The following sentences show some uses of the POSS suffixes:

(1) a. *Sanoin* $_S$[*pitä-vä-ni* *siitä*].
I said like-PPTC-POSS it
'I said I liked it.'

b. *He tulevat* $_{NP}$[*auto-lla-an*].
they are coming car-ADESS-POSS
'They are coming in their (own) car.'

c. $_{AP}$[*Kaltaise-kse-en*] *Jumala loi ihmisen.*
like-TRANSL-POSS God made man
'God made man like himself.'

d. $_{PP}$[*Lähellä-än*] *Jorma näki käärmeen.*
near-POSS Jorma saw a snake
'Near himself, Jorma saw a snake.'

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Abbreviations used below include the following: ABL = ablative case; ADESS = adessive case; ALLAT = allative case; ELAT = elative case; GEN = genitive case; IMPERS = impersonal; ILLAT = illative case; INESS = inessive case; NOM = nominative case; PART = partitive case; PL = plural; POSS = possessive; PPTC = present participle; TRANSL = translative case; 3INF = third infinitive.

[1] Examples of compounds and derivatives involving *itse* include:

itsemurha	'self-murder, suicide'
itsetoimiva	'self-operating, automatic'
itsekäs	'selfish'
itsenäinen	'independent, autonomous'

The following sentences show two uses of the full reflexive pronoun, whose distribution is roughly comparable to that of the English reflexive pronoun:

(2) a. *Haluat-ko liput itse-lle-si?*
you want-Q tickets self-ALLAT-POSS
'Do you want the tickets for yourself?'
b. *Sain ne Joe-lta itse-ltä-än.*
I got them Joki-ABL self-ABL-POSS
'I got them from Joki himself.'

The aim of this paper is to develop an explicit account of the distribution of POSS, and of its relationship to the non-emphatic full reflexive pronouns. There are two aspects to this relationship. First, the POSS suffixes have a special morphological kinship to the full reflexive pronouns; they are the morphemes which carry the person and number features of the reflexive pronouns, and no other items in the pronominal inventory mark person and number in the same way. Second, the POSS suffixes in 1a–d appear to have reflexive senses. In 1a, the understood subject of the embedded clause is the same as the matrix subject; if the lower subject were not coreferent to the matrix subject, it would show up as a genitive NP:

(3) *Matti sanoi* $_S$[*hänen pitä-vän siitä*].
Matti said he-GEN like-PPTC it
'Matti$_i$ said that he$_j$ liked it.'

But 1b can only mean that they are coming in their OWN car. Even in context, it cannot mean that they are coming in the car belonging to someone else; and 1c–d are analogous. It is proposed here that the relationship between the full reflexive pronouns and the POSS suffixes is very direct; the suffixes are weak, or clitic, forms of full reflexives. This view, to be made more precise below, provides a rather obvious account of the morphological relationship noted above, and of the understood coreference relationships in sentences like 1a–d. This is not, however, the traditional analysis of POSS. The traditional analysis is motivated by examples like 4, in which POSS co-occurs with a GEN pronoun:[2]

(4) *He tulevat heidän auto-lla-an.*
they are coming they-GEN car-ADESS-POSS
'They$_i$ are coming in their$_j$ car.'

Under this analysis, the relationship between the pronoun *heidän* and POSS is taken to be parallel to the relationship between the subject of a tensed sentence and the person-number ending on the verb; in short, POSS is thought to arise by a rule of agreement between the head of a phrase and a pronominal GEN specifier. This means that examples like 1a–d are assumed to have had GEN pronouns earlier in their derivation, which triggered agreement and were then deleted. The apparent reflexive sense of POSS in 1a–d is explained by allowing the pronoun deletion rule to apply

[2] What is presented here as the traditional analysis is in fact more articulated than the analysis of POSS suffixes given in any of the traditional grammars. However, important features of this analysis can be found in many works; e.g., Penttilä (1963:122–5) treats the POSS suffixes in his section on morphology rather than with the reflexive pronouns in his section on syntax; he takes ex. 4 to represent the basic use of the suffixes, and discusses when the genitive pronoun is left out. Lehtinen (1962:133–9) presents a similar analysis.

only under coreference to a subject. The fact that POSS suffixes form a crucial PART of the reflexive pronoun seems to go unexplained in traditional descriptions. One might, however, propose that the reflexive form *itse* + case + POSS is an active or frozen derivative of $_{NP}$[pronoun *itse* + case], via agreement and pronoun deletion.

There are a number of peculiarities in the distribution of POSS for which the present analysis, or a full articulation of the traditional analysis, must account:

(I) The POSS suffix goes after, rather than before, the case ending on a noun or adjective. All other inflectional and derivational morphology goes before.

(II) The doubled construction in 4 occurs only in AP's, PP's, and NP's. A participle can have a POSS suffix (as in 1a), or a GEN pronominal subject (as in 3), but it cannot have both:

(5) **Matti sanoi hänen pitä-vä-nsä siitä.*
Matti said he-GEN like-PPTC-POSS it

(III) Only personal pronouns are found in the doubled construction on the surface. Other pronouns, such as inanimates and interrogatives, enter into coreference relationships like those illustrated in 1a–d, but do not appear on the surface in the doubled construction:

(6) a. *Rahasumma vieläkin odottaa omistajaa-nsa.*
money still awaits owner-POSS
'The money still awaits its owner.'
b. **Sen omistaja-nsa on munkki.*
it-GEN owner-POSS is monk
'Its owner is a monk.'

(IV) First and second person POSS suffixes occur on the surface without a coreference relationship to an NP elsewhere in the sentence:

(7) *Serkku-ni kanssa on aina hauskaa.*
cousin-1sg.POSS with is always fun
'With my cousin, you always have a good time.'

The 3rd person suffix cannot be used in this way:

(8) **Serkku-nsa kanssa on aina hauskaa.*
cousin-3sg./pl.POSS with is always fun
'With his/her/their cousin, you always have a good time.'

The following sections show how the theory that all POSS suffixes are clitic reflexive pronouns can be made precise in a way which accounts for I–IV. They also show that articulating the traditional analysis sufficiently to describe these facts results in an ad hoc and unilluminating account. In §2, I show that the proposed source for POSS is generated at no cost to the grammar; i.e., in a crucial range of cases, POSS suffixes are in complementary distribution with full reflexive pronouns. By taking the POSS suffixes to be allomorphs of the full reflexive pronouns, a simplification of the rules governing the distribution of reflexive pronouns can be effected. An allomorphy rule governing the distribution of full and clitic forms is formulated. Treating the POSS suffixes as clitics also explains why they follow inflectional and derivational morphology. In §3, I take up the formulation of the doubling rule which is responsible for the co-occurrence of POSS with a GEN pronoun in examples like 4. It is sug-

gested that doubling applies only in those cases where its effect can be seen on the surface. Formulating the rule to apply more broadly, so that it can feed a pronoun deletion rule in the derivation of sentences like 1a–d, involves the traditional analysis in difficulties with points II and III above. In §4, I show that point IV can be accounted for by a straightforward extension of an independently motivated pronoun deletion rule.

Stating the rules developed here will require two notions taken from the $\bar{X}$ theory of phrase structure, although the analysis does not rely on the more extended elaborations of that theory. First, it will be desirable to have a mechanism for cross-classifying syntactic categories; e.g., it will be necessary to write a rule which applies in AP's and in NP's, but not in VP's. To do this, the syntactic features of Chomsky 1970 will be used. The feature [+N] picks out AP's and NP's, because adjectives are [+N, +V] and nouns are [+N, −V]. This designation does not cover VP's, since verbs are [−N, +V]. Second, it will be useful to have a means by which the GEN subject in a non-finite clause, the possessor in an NP, the genitive NP in a post-positional phrase, and the genitive specifier in an AP can all be identified as members of a natural syntactic class. We might observe that all these genitives are immediately dominated by a major phrasal node which is maximal of its type, in the sense that the next higher node represents a DIFFERENT syntactic category.[3] Jackendoff's 'Uniform Three Level Hypothesis' (1977:36) provides a convenient way of formalizing this observation. Under this hypothesis, the maximal phrase of any type is annotated with three bars (or primes, for typographical convenience); as we go down into the phrase toward the head, the number of bars decreases. The gist of the proposal should be clear from Figure 1.

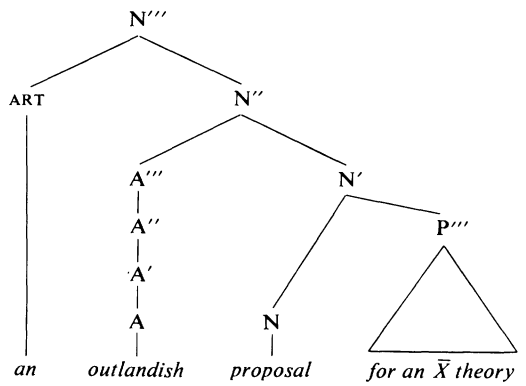

FIGURE 1.

Taking an untensed S to be a V''', the class of genitives we want to refer to is readily identified as the circled position in Figure 2.[4]

[3] This definition breaks down, of course, in conjoined expressions, which are also treated as exceptions by Jackendoff 1977.

[4] Hornstein 1977 presents arguments that tensed sentences in English cannot be viewed as V'''s. It is not clear, however, that his arguments can be extended to untensed sentences in Finnish. Given the amount of simplification permitted here by taking untensed sentences to be V'''s, I prefer to work with Jackendoff's original proposal.

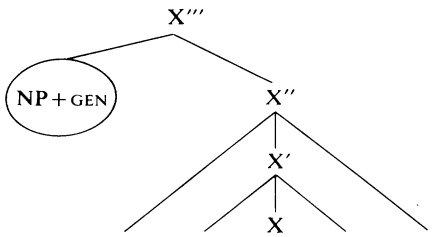

FIGURE 2.

Here X''' can belong to any syntactic category. Genitives in the circled position will be referred to as 'specifiers'. Genitive NP's which are excluded by this formulation include (a) direct objects with GEN morphology and (b) so-called dative genitives; both of these are attached lower down in the phrase than a specifier. The rules governing the alternation among genitive, partitive, and nominative marking on direct objects are discussed in Wiik 1972. The dative genitive controls the subject of a lower infinitival clause in sentences like 9, and does not participate in the alternation with the partitive and the nominative which is characteristic of direct objects:

(9) *Käskin poja-n*$_i$ $_{V'''}$[Δ_i *ampua suden*]
I ordered the boy-GEN$_i$ Δ_i to shoot the wolf
'I ordered the boy to shoot the wolf.'

This and related constructions are discussed by Setälä (1973:47) and Ikola (1974:31).

2. A SOURCE FOR POSSESSIVE SUFFIXES. The aim of this section is to argue that the proposed source for POSS suffixes—the reflexive pronoun—provides a plausible account of their occurrence in non-doubled constructions. (The doubled construction will be discussed in §3.) The present point will be made by showing that the most general account of reflexivization for Finnish would create reflexives as specifiers in V'''s, N'''s, and A'''s. But full reflexive pronouns do not show up on the surface in this position; instead, one finds sentences with POSS attached to the head of the phrase, without an overt specifier. Any grammar of Finnish would have to include a rule or constraint preventing full reflexive pronouns from occurring in this position. In this paper, the rule will do double duty by also generating the POSS suffixes which are found. The section concludes by formulating the rule which governs the alternation between full and clitic forms of the reflexive, and discussing its application in postpositional phrases.

To make this argument, it is necessary to introduce a number of Finnish constructions which have a GEN specifier. The first is the NP construction headed by a deverbal noun with the suffix *-mis/minen*. Following the line of thought in Chomsky 1970 and Schachter 1976, I will assume that these deverbal nouns are not transformationally derived, but rather introduced in the base as nouns. One kind of evidence for this view is that they can occur with articles and adjectives, including the adjective *oma* 'own':

(10) a. *Hän ihmetteli omaa kauheaa hermostu-mis-ta-an..*
he wondered at own terrible lose nerve-*mis*-PART-POSS
'He wondered at his own terrible loss of nerve.'

b. *Tuo-sta juo-mise-sta-si on tultava loppu.*
that-ELAT drink-*mis*-ELAT-2sg.POSS is to come to end
'There must be an end to that drinking of yours.'

Verbal nouns in *-mis/minen* (and also verbal nouns derived with less productive suffixes) can have a subject or object in the genitive; the subject will be assumed to be in the specifier position identified in Fig. 2:

(11) a. *Mati-n laula-minen ei ole juuri kummempaa.*
Matti-GEN sing-*minen* not be exactly special
'Matti's singing is nothing special.'
b. *Mati-n kiusaa-mise-n täytyy loppua.*
Matti-GEN teasing-*mis*-GEN has got to stop
'Teasing of Matti has got to stop.'

A second type of sentence which is important here is a participial construction:

(12) *Uskon* $_{V'''}$[*Mati-n ole-van oikeassa*].
I believe Matti-GEN be-PPTC right
'I believe Matti is right.'

Although constructions of this form occur with what many linguists would claim to be subject-to-object raising verbs in English, there is good evidence in Finnish that *Matin* in 12 is the surface subject of the participle, not the surface object of the matrix verb. One argument is that *Matin* is not put into the partitive case when the matrix verb *uskoo* is negated, as an object would be:

(13) a. *En usko Mati-n ole-van oikeassa.*
I don't believe Matti-GEN be-PPTC right
'I don't believe Matti is right.'
b. *En ota lasku-a.*
I'm not taking the bill-PART
'I'm not taking the bill.'

For further discussion of this syntactic position, see Hakulinen 1973 and Breckenridge & Hakulinen 1976.

Finally, let us consider two A''' constructions which can have a GEN specifier in Finnish. Derived adjectives in *-is/inen* which imply comparison have a GEN specifier designating to what the comparison is made:

(14) *Tuo puku sopii* $_{A'''}$[*Oili-n ikäise-lle*] *naise-lle.*
that dress suits Oili-GEN old-ALLAT woman-ALLAT
'That dress suits a woman as old as Oili.'

There is also a reduced-clause construction which functions as an AP. The verbal stem has the so-called 'third infinitive' suffix *-ma*, and agrees in case and number with the head of the NP. A GEN specifier representing the agent must be present; if the agent is not to be expressed, a passive participle is used instead. This construction, which can also be used predicatively, is illustrated here:

(15) $_{A'''}$[*Pääministeri-n muodosta-ma-ssa*] *hallitukse-ssa on*
prime-minister-GEN form-3INF-INESS government-INESS is
yhdeksän ministeriä.
nine ministers
'In the government formed by the Prime Minister, there are nine ministers.'

It is easy to construct examples which show that a full reflexive pronoun can occur within an N‴, a V‴, or an A‴ under coreference to an NP outside the phrase:

(16) *Hän etsi* $_{N'''}$[*itseään viisaampaa miestä*].
he was looking for himself-PART wiser man
'He was looking for a man wiser than himself.'

(17) *Sotilas kertoi* $_{V'''}$[*itseään ammutun*].
soldier reported himself-PART shot-IMPERS-PART[5]
'The soldier reported that he had been shot.'

(18) *Hän on* $_{A'''}$[*ylpeä itsestään*].
he is proud himself-ELAT
'He is proud of himself.'

However, in all these examples, the reflexive pronoun is not in specifier position. If we attempt to reflexivize the specifier in an N‴, V‴, or A‴, ungrammatical sentences result:

(19) *$_{N'''}$[*Itsensä hermostu-mise-n*] *Jorma unohti.*
himself-GEN lose nerve-*mis*-GEN Jorma forgot
'His own loss of nerve, Jorma forgot.'

(20) **Jorma tuli* $_{N'''}$[*itsensä auto-lla*].
Jorma came himself-GEN car-ADESS
'Jorma came in his (own)car.'

(21) **Hän uskoo* $_{V'''}$[*itsensä ole-van oikeassa*].
he believes himself-GEN be-PPTC right
'He believes himself to be right.'

(22) **Hän sopii* $_{A'''}$[*itsensä ikäise-lle*] *naise-lle.*
he suits himself-GEN old-ALLAT woman-ALLAT
'He suits a woman of his own age.'

(23) **Pidämme* $_{A'''}$[*itsemme osta-m-i-sta*]
we like ourselves-GEN buy-3INF-PL-ELAT
tuole-i-sta.
chair-PL-ELAT
'We like the chairs that we bought.'

To convey the meanings glossed in 19–23, it is necessary to use POSS suffixes rather than the full reflexive pronouns:

(24) *Hermostu-mise-∅-nsa Jorma unohti.*[6]
lose nerve-*mis*-GEN-POSS Jorma forgot

(25) *Jorma tuli auto-lla-an.*
Jorma came car-ADESS-POSS

(26) *Hän uskoo ole-va-nsa oikeassa.*
he believes be-PPTC-POSS right

[5] The so-called passive in Finnish is really an impersonal verb form; a plural human actor is ordinarily implied, but there is no syntactic subject. If the verb is transitive, the object is marked by the usual object case-marking rules. Hence, here the object is in the partitive. Further discussion and examples may be found in Lehtinen (237).

[6] In *Hermostumisensa*, the initial consonant of the POSS suffix has caused the genitive marker *-n* to delete. Thus the surface form does not actually have any case marker, although it can be argued that the form must be genitive on the basis of comparison to other sentences. Subsequent examples will omit a ∅ indicating where the case ending was.

(27) *Hän sopii ikäise-lle-en naise-lle.*
he suits old-ALLAT-POSS woman-ALLAT

(28) *Pidämme osta-m-i-sta-mme tuole-i-sta.*
we like buy-3INF-PL-ELAT-POSS chair-PL-ELAT

For comparison, 29 shows that GEN reflexive pronouns occur in non-specifier position, where they cannot be replaced by a POSS suffix:

(29) a. *Hän pyysi itsensä häihin.*
he invited himself-GEN to the wedding

b. **Hän pyysi-in häihin.*
he invited-POSS to the wedding

In the cases considered so far, POSS is thus in complementary distribution with the full reflexive pronoun; the POSS suffix is found when a reflexive is in specifier position, and the full reflexive pronoun is found otherwise. This suggests that the POSS suffixes and the full reflexive pronouns are allomorphs of the same form. We state this proposal in the following allomorphy rule:[7]

(30) $\begin{bmatrix} \text{PRO} \\ +\text{reflexive} \\ +\text{genitive} \end{bmatrix} \rightarrow \text{POSS} \,/\, X'''[(\text{article}) \_\_\_\_$

$\rightarrow$ *itse* + case + POSS / elsewhere

The POSS suffix is cliticized to the head of the X''' by this rule:

(31) $\underbrace{X'''[(\text{article})}_{1}$ POSS Y head
$2 \quad 3 \quad 4 \quad \rightarrow 1 \quad 3 \quad 4 + 2$

Here the head may be defined as the X which is a direct descendant of X''', as in Figure 3.

Two points may be made about 30–31. First, POSS is the logical weak allomorph of the full reflexive pronoun, since it is the part of that pronoun which carries the person and number features. The POSS suffix is an unambiguous representative of the full form, since it does not arise in the pronominal system, under my theory, except through 30. Second, rules 30–31 explain why POSS is ordered after the derivational and inflectional morphology when it is attached to the head of a phrase; it is not a derivational or inflectional morpheme, but a clitic pronoun. We may compare its

[7] Three points about rule 30 may call for explanation. First, it should be noted that the rule picks out only reflexives in specifier position, since anything attached lower down would have an X'' bracket to its left. Second, unlike English, Finnish permits an N''' to have a demonstrative in addition to a genitive specifier:

Tuo Mati-n auto.
that-NOM Matti-GEN car-NOM
'That car that belongs to Matti.'

Since the rule must apply to reflexive pronouns which are separated from the left X''' bracket by such a demonstrative, an optional article is allowed for. Finally, a syntactic feature [+genitive] has been used to specify that the target pronoun is genitive. In fact, this is an abbreviation; Carlson, MS, argues that the system of Finnish cases is cross-classified by features related to their semantic character and syntactic roles. This means that the genitive case would properly be designated by a bundle of features rather than by a single feature. If we adopt Carlson's further conclusion that the pronouns in specifier position which concern us here are marked genitive by a syntactic rule, then the case specification in 30 is in fact redundant.

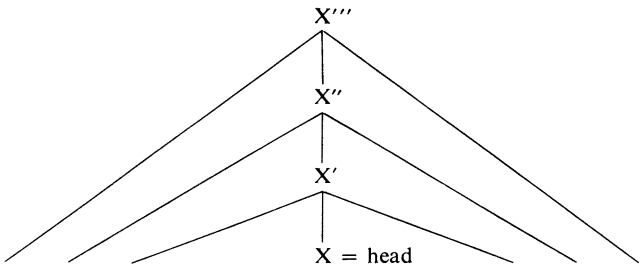

FIGURE 3.

behavior to that of the only other cliticizable members of a word category, namely the clitic particles. These, too, are found after rather than before the inflectional morphology:

(32) *Häne-llä-hän on kaunis ääni.*
she-ADESS-particle is beautiful voice
'She really does have a beautiful voice.'

(Further discussion of the meaning of this particular particle may be found in Hakulinen 1976.)

The traditional analysis of POSS does not exploit the complementary distribution outlined in 16–29. Under the traditional analysis, 24 is derived as follows (and similarly for 25–28):

(33) *Hänen$_i$ hermostumisen Jorma$_i$ unohti.*
his loss of nerve Jorma forgot
→ *Hänen$_i$ hermostumise-nsa Jorma$_i$ unohti.*
-POSS
(by doubling)
→ *Hermostumisensa Jorma unohti.*
(by deletion of the pronoun under coreference)

As stated, 33 assumes that the pronoun in specifier position, *hänen*, is not reflexivized under coreference to the matrix subject *Jorma*. In fact, this assumption is crucial; as we will see below, if the pronoun were reflexivized, the doubling in the second line of the derivation would not take place. This means that, under the traditional analysis, reflexivization must be prevented from applying to a pronoun in specifier position. (Under an interpretive theory of reflexivization, both the reflexive indexing rule and the disjoint reference rule would have to be blocked.) No motivation seems to exist for this, since the antecedent *Jorma* dominates the target under almost any account of structural conditions relevant to reflexivization—and since we know from 16 that reflexivization can apply to a target which is more deeply embedded in an NP than the target in 33 is. Thus the analysis of POSS suffixes proposed here permits a simpler account of reflexivization than is available under the traditional analysis.

Having motivated rule 30 for N'''s, V'''s, and A'''s, we turn to the only remaining phrasal category which takes a genitive specifier, the postpositional phrase. Since postpositions take only a single argument, it is impossible to compare reflexivation in specifier versus non-specifier position, as N'''s, V'''s, and A'''s. Rather, rule 30

would predict that the reflexive argument of a postposition would always appear as a possessive suffix. In fact, the vast majority of postpositions are listed in the *Nykysuomen sanakirja* (the *Modern Finnish dictionary*, 1973) as taking possessive suffixes:

(34) *Jorma valitsi Marin sijalle-en.*
Jorma chose Mari in place of-POSS
'Jorma chose Mari in place of himself.'

(35) *Jorma näki käärmeen lähellä-än.*
Jorma saw a snake near-POSS
'Jorma saw a snake near himself.'

But there is an interesting class of exceptions to this generalization. Although the majority of postpositions are historically nominal types, a few (generally ending in *-ki* or *-i*) are historically adverbial types, and can still appear without an argument as adverbs, e.g. *poikki* 'across', *ympäri* 'around', *yli* 'over'. These postpositions share a number of peculiarities. They are all used to describe a completed trajectory of movement; thus, *ympäri* may not be used in the sense of 'around' in *We found him with his books stacked around him*, but rather in the sense in *He wound the rope around the tree.* Their arguments may occur after as well as before the postposition:

(36) *pellon poikki / poikki pellon*
field across / across field
'across the field.'

Finally they fail to take POSS suffixes:

(37) **Hän kiersi köyden kerran ympäri-nsä.*
he wound rope once around-POSS
'He wound the rope once around himself.'

Lauri Carlson suggests (p.c.) that this complex of properties might be handled by including the argument of these postpositions in the class of dative-genitives mentioned in §1, above. These so-called postpositional phrases would then represent formations along the line of 'through to the road' in English. This proposal would explain why postpositions like *poikki*, *yli*, and *ympäri* have a directional meaning, and it would give us a way to prevent rule 30 from generating examples like 37: we could say that the weak-form reflexive is not found because the argument of *ympäri* is not in specifier position, but is rather attached lower in the tree. If this suggestion bears up under further scrutiny, it will be possible to claim that allomorphy rule 30 is governed purely by syntactic factors, and has no lexical exceptions.

3. DOUBLING. Sentences in which a GEN personal pronoun is doubled with a POSS suffix were mentioned in §1:

(38) *He tulevat heidän auto-lla-an.*
they are coming their-GEN car-ADESS-POSS
'They are coming in their (some other people's) car.'

If there were no possessor here, no suffix would be found on *autolla*:

(39) *He tulevat autolla.*
they are coming by car

Thus it is clear that the POSS suffix in 38 is introduced by a copying or agreement rule, triggered by the presence of an overt possessor. In this section, two formulations of

this doubling rule will be considered. The formulation required under the traditional analysis, according to which doubling is responsible for the generation of all POSS suffixes, will be found to require an extremely ad hoc set of conditions. As a result, I will adopt a solution in which the doubling rule applies only in structures like 38, in which doubling can be seen on the surface. It will turn out that doubling can be treated as a reduplication of the specifier node; the copy made by the rule is a reflexive because it is coreferent to an NP (the original specifier) in the same cyclic domain. The form of the reflexive is in turn governed by allomorphy rule 30, and so shows up as a POSS suffix which cliticizes to the head.

The line of argument for this proposal will be as follows. First, I will show that the cases where doubling is found on the surface have a straightforward and coherent characterization. Only a non-reflexive personal pronoun is doubled, and it is doubled only when it is the specifier in a [+N]'''. The second point will depend on the claim that postpositional phrases are [+N]'''s in Finnish, while prepositional phrases represent the true PP's, i.e. [−N −V]'''s. A doubling rule will be stated which creates reflexives subject to allomorphy rule 30. Then I will turn to the incoherent set of addenda which would be required in this rule in order to provide the traditional source for POSS suffixes.

Sentence 38 had a genitive pronoun in an N''' doubled with a POSS suffix. A second example of doubling in an N''', involving a deverbal noun in *-minen*, is:

(40) *Sinun hermostu-mise-si Jorma unohti.*
you-GEN lose nerve-*mis*-POSS Jorma forgot
'Your loss of nerve, Jorma forgot.'

The AP constructions introduced in §2 provide examples showing that doubling takes place in A'''s:

(41) *Tuo puku sopii* $_{A'''}$[*sinun ikäise-lle-si*] *naise-lle.*
that dress suits you-GEN old-ALLAT-POSS woman-ALLAT
'That dress suits a woman of your age.'

(42) *Pidämme* $_{A'''}$[*sinun osta-m-i-sta-si*] *tuole-i-sta.*
we like you-GEN buy-3INF-PL-ELAT-POSS chair-PL-ELAT
'We like the chairs you bought.'

The last type of phrase in which doubling is found is the PP:

(43) *Jorma valitsi Marin sinun sijalle-si.*
Jorma chose Mari you-GEN in place of-POSS
'Jorma chose Mari in place of you.'

By contrast, the following show that the doubling rule fails to apply in a V''':

(44) **Hän uskoo* $_{V'''}$[*sinun ole-va-si oikeassa*].
he believes you-GEN be-PPTC-POSS right
'He believes you are right.'

(45) *Hän uskoo sinun ole-van oikeassa.*
be-PPTC
'He believes you are right.'

It is also important to note that there are no cases in which something other than a

GEN specifier is doubled; e.g., the partitive argument of a preposition may not be doubled with a POSS suffix:

(46) a. *ilman sinua*
without you-PART
b. **ilma-si sinua*
without-POSS you-PART

Thus a specifier in an NP, an AP, or a postpositional phrase may be doubled with a POSS suffix. The specifier in a V''' may not be, nor may a non-specifier. If postpositional phrases are taken to be [−N −V]''', then there is no convenient way of characterizing the class of phrase-types in which doubling occurs; syntactic features cannot characterize the class [+N −V] (NP's), [+N +V] (AP's), and [−N −V] without using a disjunction. We note, however, that Finnish syntax has two candidates for the role of [−N −V]: prepositions and postpositions. For a number of reasons, it makes more sense to view the prepositional phrases as the true PP's or [−N −V]'''s; those postpositional phrases in which POSS suffixes occur can be taken as NP's headed by defective nouns. So-called postpositions which do not take POSS suffixes are apparently adverbs; on the assumption that an optional argument of such postpositions is not a specifier, these lexical items need not concern us further here, since no feature decomposition will make these arguments subject to doubling.

The first reason to view those postpositions which do accept POSS suffixes as defective nouns is, of course, that this move simplifies the formulation of the doubling rule; if postpositional phrases are [+N −V]''', then doubling takes place only in [+N]'''s. Second, it is generally true that postpositions in this class have case endings. Some stems occur with only one case as postpositions: *jälki* 'track', *jälke-en* 'track-ILLAT = after, behind'. However, many are found in a number of different cases, with meaning determined according to the usual meaning of the cases: *pää* 'head', *pää-llä* 'head-ADESS = on', *pää-ltä* 'head-ABL = from on', *pää-lle* 'head-ALLAT = onto'. It is interesting to note that where a postposition has forms both with and without case endings, only the form WITH the case ending takes POSS. It was already noted that the adverb *ympäri* cannot have a POSS suffix:

(47) **ympäri-nsä*
around-POSS

However, the related form *ympäri-lle* 'around-ALLAT = around' can have a POSS suffix:

(48) *Hän kiersi köyden kerran ympäri-lle-en.*
He wound rope once around-ALLAT-POSS
'He wound the rope around himself.'

Although *ympäri* does not exist as a noun, it does function as a nominal stem in taking the denominal suffix *-sto*: thus *ympäristö* 'environment'. So it seems possible that *ympäri*, as used in 48, is a defective nominal stem. Thus, if prepositions are taken to be [−N −V], there is an obvious location in the grammar for the postpositions about which we are concerned. If, however, these postpositions are taken to be [−N −V], there is no sensible designation for the prepositions; they cannot be prefixes, since Finnish is otherwise exclusively suffixing. This difficulty provides

a third reason for viewing prepositional phrases as the true [−N −V]''s.[8]

Turning now to the question of what lexical items are doubled, we can assert that doubling occurs on the surface only when the specifier is a non-reflexive personal pronoun:

(49) *minun auto-ni* 'my car-POSS'
sinun auto-si 'your car-POSS'
hänen auto-nsa 'her/his car-POSS'
meidän auto-mme 'our car-POSS'
teidän auto-nne 'your car-POSS'
heidän auto-nsa 'their car-POSS'

Nothing else is ever doubled with POSS. For example, a lexical NP is not doubled; neither are *sen* 'its' (used also to refer to non-human animates), *kenen* 'whose?', or *kenen tahansa* 'anyone's':

(50) a. *Mati-n vaimo* (**Matin vaimo-nsa*)
Matti-GEN wife -POSS
'Matti's wife.'
b. *kene-n vaimo?* (**kenen vaimo-nsa?*)
who-GEN wife -POSS
whose wife?'
c. *kenen tahansa vaimo* (**kenen tahansa vaimo-nsa*)
anyone-GEN wife -POSS
'anyone's wife.'
d. *sen omistaja* (**sen omistaja-nsa*)
it-GEN owner -POSS
'its owner.'

It will be important to know, in particular, that an empty node and the reflexive pronoun are not doubled with POSS.

It is clear that the weak allomorph of the reflexive pronoun is not doubled; doubling POSS would generate two POSS suffixes in the same phrase, both of which would attach to the same head. Any construction of this sort is completely impossible. It would seem at first that this would exhaust the question of reflexives being doubled,

[8] Perhaps the strongest reason to dispute the claim made here, that the Finnish PP is a prepositional phrase, would be that this claim would put the language in violation of two of Greenberg's 1966 universals about word order. In thirteen out of fourteen prepositional languages, he found that the genitive follows the governing noun; in Finnish, however, it precedes. Similarly, he found that eleven out of eleven exclusively suffixing languages (not counting Finnish) were postpositional. The claim that Finnish is prepositional would make it the only one, out of twelve exclusively suffixing languages, to fall in this category. The force of these arguments is lessened, however, by the observation that the claim that Finnish is postpositional also leaves the language in violation of some strong generalizations in Greenberg's data. Twelve out of twelve of his postpositional languages (not counting Finnish) do not move the question word to the front of the sentence; but Finnish does. In nine out of nine of his postpositional languages with auxiliaries (again not counting Finnish), the auxiliary follows the verb; but in Finnish it precedes. Finally, only three out of thirteen of Greenberg's SVO languages (including Finnish) were counted as postpositional; the other ten were prepositional. I conclude that Finnish represents an unusual mixed type in its word-order patterns, whether it is taken to be a postpositional language or a prepositional one.

since the specifier position that a pronoun must occupy to trigger doubling is exactly the position where the reflexive pronoun has its weak allomorph. However, the strong allomorph is acceptable to some degree when the reflexive pronoun is a specifier in an AP or PP in thematic position. Examples of this type establish that a strong-form reflexive in the relevant syntactic position is not doubled with POSS.

(51) a. *Itsensä kaltaise-ksi Jumala loi ihmisen.*
himself-GEN like-TRANSL God made man
'Like himself, God made man.'
b. **Itsensä kaltaise-kse-en Jumala loi ihmisen.*
like-TRANSL-POSS
c. *Itsensä sijalle Jorma valitsi Marin.*
himself-GEN in place of Jorma chose Mari
'In place of himself, Jorma chose Mari.'
d. **Itsensä sijalle-en Jorma valitsi Marin*
in place of-POSS

Examples 51b and 51d may be compared to 41 and 43, which show that a personal pronoun in the same syntactic position is doubled.

It is somewhat more difficult to establish the same point in the case of the empty node. Since, by definition, an empty node dominates no phonological material, it is necessary to find syntactic evidence that a node is present in a construction, before drawing conclusions about whether or not it induces doubling. One such argument may be made on the basis of the occurrence of reflexives as dependents of deverbal nouns in *-mis/minen*.[9] Here is one of many possible examples which show that reflexive pronouns do not occur without an antecedent in Finnish:

(52) **Itsensä laulaminen ei ole juuri kummempaa.*
himself-GEN singing not be exactly special
'Himself's/Oneself's singing is nothing special.'

In 53, however, we find a reflexive pronoun without a surface antecedent:

(53) *Itsensä kutittaminen ei ole tehokasta.*
self-GEN tickling not be effective
'Self-tickling is not effective.'

The obvious way to explain the contrast between 52 and 53 is to suggest that the object reflexive in 53 is coreferent to a phonologically empty subject, which is interpreted generically. Thus, 53 is assumed to have the same syntactic structure as:

(54) *Matin veljensä kutittamisen täytyy loppua.*
Matti-GEN his brother-GEN tickling must stop
'Matti's tickling of his brother must stop.'

The fact that 52 is ungrammatical follows, because the sentence has no unfilled syntactic position in which we could posit the existence of a phonologically null, generically interpreted NP. This means that 52, unlike 53, has no possible antece-

[9] A strongly interpretive theory would handle these constructions, and others which have been claimed to have dummy subjects, without positing a syntactic subject. Under such a theory, it would automatically follow that POSS suffixes do not occur in the construction which I am about to discuss; if no syntactic specifier is present, then there is nothing which could be doubled with a POSS suffix.

dent for the reflexive. At this point, we can look at 53 in terms of its implications for the doubling rule. The head noun does not have a POSS suffix attached to it; in fact, the sentence would be ungrammatical with POSS:

(55) **Itsensä kutittamise-nsa ei ole tehokasta.*
self-GEN tickling-POSS not be effective
'Self-tickling is not effective.'

By contrast, a personal pronoun in the same syntactic position as the empty node does trigger POSS on the head noun:

(56) *Sinun Matin kutittamise-si täytyy loppua.*
you-GEN Matti-GEN tickling-POSS must stop
'Your tickling of Matti must stop.'

The contrast between 55 and 56 allows us to conclude that an empty node is not doubled with a POSS suffix.

To summarize what we know so far: each of the six personal pronouns is doubled with POSS when standing as a specifier in a [+N]'''. Other elements in the pronominal system, such as the reflexive and interrogative pronouns and the empty node, are not doubled even in the same syntactic position. Recalling that allomorphy rule 30 applied to the specifier in any X''', we see that we can account for the appearance of POSS in doubled constructions by allowing doubling to feed rule 30. This means that, on morphological grounds, we would want the doubling rule to make a reflexive copy of the original pronominal specifier. This also makes sense on syntactic grounds. If the doubling rule makes a coreferent copy of the original pronoun, then the copy must be reflexive; otherwise the copy would be marked non-coreferent to the original by Chomsky's disjoint reference rule (1975:319).[10] (Equally well, under a transformational theory of reflexives, the copy would be reflexivized because it is coreferent to the original and in the same cyclic domain.) These observations permit us to state the doubling rule as follows:

(57)

$$[+N]'''[(\text{article}) \quad \begin{bmatrix} \text{pronoun} \\ +\text{human} \\ -\text{interrogative} \\ -\text{reflexive} \\ \text{etc.} \end{bmatrix}$$

$$1 \qquad 2 \qquad \rightarrow \quad 1 \quad 2 \quad 2$$
$$\qquad\qquad\qquad\qquad\qquad\quad +\text{refl.}$$

The facts presented so far have been handled with three fairly simple rules. The doubling rule generates reflexive pronouns whose form is controlled by allomorphy rule 30—which is independently needed, because a straightforward formulation of the reflexive rules would create reflexives in structures where only POSS can occur on the surface. The weak-form reflexives, whether arising from doubling or not, are cliticized to the head of their phrase by cliticization rule 31.

Let's look now at what rules would be required to handle the same facts under the traditional analysis of POSS suffixes. A version of doubling rule 57 would be necessary, since doubling is supposed to account for the occurrence of all POSS suffixes. Unlike rule 57, the traditional doubling rule would create POSS suffixes directly,

[10] I am grateful to Joan Bresnan for pointing this out to me.

rather than reflexive pronouns. It would also apply in any X''' node rather than only in [+N]'''s—since, as we have seen already, POSS suffixes do show up in V'''s:

(58) *Mies uskoo ole-va-nsa oikeassa.*
man believes be-PPTC-POSS right
'The man believes himself to be right.'

This brings us to the first problem. When the doubling rule applied in [+N]'''s, it would apply whether or not the GEN pronoun which triggered the POSS suffix was going to be deleted under coreference to the subject; POSS occurs in both the following sentences:

(59) a. *He tulevat ____ auto-lla-an.*
they are coming (their) car-ADESS-POSS
'They are coming in their (own) car.'
b. *He tulevat heidän auto-lla-an.*
they are coming they-GEN car-ADESS-POSS
'They are coming in their (some other people's) car.'

In V'''s, however, the traditional doubling rule would have to apply only when the GEN pronoun triggering POSS was going to be deleted; we saw in 45 that a GEN pronoun which is not coreferent to the matrix subject is not doubled.

A similar problem arises in cases involving non-human antecedents. Non-human NP's, pronominalized with *se*, can antecede reflexive pronouns:

(60) *Turingin kone voi tehdä kopioita itsestään*
Turing machine can make copies of itself

Under my analysis, it follows automatically that a non-human NP can antecede a POSS suffix, which is merely a reduced reflexive pronoun:

(61) *Rahasumma vieläkin odottaa omistajaa-nsa.*
money still awaits owner-POSS
'The money still awaits its owner.'

The traditional analysis, however, would propose a derivation for 61 like the following:

(62) *Rahasumma vieläkin odottaa sen omistajaa.*
its owner
→ *Rahasumma vieläkin odottaa sen omistajaa-nsa.*
its owner-POSS
→ *Rahasumma vieläkin odottaa ∅ omistajaansa.*

We saw in 50 that *sen* is never doubled on the surface with a POSS suffix; this means that the traditional doubling rule would have to apply to *sen* just when it met the coreference conditions for deletion. Clearly, a rule which requires a coreference condition when applying to a [−human] pronoun, or in a V''', is the wrong rule.

One might wonder whether the traditional analysis could be salvaged by using a personal pronoun to trigger POSS only when the pronoun would not be deleted, and a reflexive pronoun or controlled empty node otherwise. This proposal is implausible, however, since I have established that the full reflexive pronoun and the empty node do not trigger doubling. Thus we must conclude that the complexities just described are an inescapable feature of the traditional analysis, and we may

adopt the far simpler account under which doubling applies only where its effects are seen on the surface.

4. FIRST AND SECOND PERSON PRONOUN DROP. Many sentences in Finnish have 1st and 2nd person POSS suffixes which are not doubles of a GEN pronoun, and have no antecedent elsewhere in the sentence:

(63) *Serkku-ni kanssa on aina hauskaa.*
cousin-1sg.POSS with is always fun
'With my cousin, you always have a good time.'

On the face of it, such sentences appear to be counter-examples to the claim that suffixes are reduced reflexives, which can occur only under the coreference conditions which govern full reflexives. However, this section will show that 63 arises through the application to 64 of a rule dropping non-emphatic 1st and 2nd person pronouns:[11]

(64) *Minun serkku-ni kanssa on aina hauskaa.*
me-GEN cousin-POSS with is always fun
'With my cousin, you always have a good time.'

When *minun* is emphasized, 64 is normal; it can be derived by doubling from the following intermediate representation:

(65) *Minun serkun kanssa on aina hauskaa.*
my-GEN cousin-GEN with is always fun

In addition to the occurrence of 64, there is other evidence that 63 is derived by pronoun deletion. Independent 1st and 2nd person subjects are regularly dropped in tensed sentences:

(66) a. (*Minä*) *mene-n katsomaan.*
(I) go-1sg. to look
'I am going to look.'
b. *Poroja* (*te*) *varmasti näe-tte.*
reindeer (you-PL) certainly see-2pl.
'You will certainly see some reindeer.'

This pronoun-dropping regularly creates tensed sentences in which 1st or 2nd person reflexive pronouns occur without surface antecedents:

(67) (*Sinä*) *ole-t tottunut itseesi.*
(you-SG) be-2sg. used to yourself
'You are accustomed to yourself.'

If the rule which drops 1st and 2nd person pronouns in tensed sentences is generalized to drop such pronouns whenever the deletion is recoverable, it will generate 63 as well as 67. This proposal captures the parallelism between the two sentences; it also predicts that 1st and 2nd person POSS suffixes will occur without antecedents only under [+N]‴ nodes, where doubling can apply. This is the case:

(68) **Sanotaan ole-va-si oikeassa.*
it is said be-PPTC-2sg.POSS. right
'It is said you are right.'

[11] I restrict attention here to standard Finnish, in which 3rd person pronouns cannot be dropped. In less formal Finnish, 3rd person pronouns may in some circumstances be dropped; Carlson, MS, gives examples.

This is ungrammatical because a pronominal subject of *olevan* can not be doubled with a POSS suffix, and so cannot be dropped leaving a POSS suffix behind.

5. CONCLUSION. This analysis of Finnish POSS suffixes uses four rules. The most central to the analysis is allomorphy rule 30, which creates POSS suffixes as weak forms of the reflexive pronoun. This rule creates POSS suffixes from reflexive pronouns which arise in two different ways. First, I have shown that the most general formulation of the reflexive rule for Finnish would generate reflexives in specifier position in any X‴. The allomorphy rule, which puts just reflexives in specifier position into the weak form, reduces these to POSS suffixes, which are then cliticized to the head of the phrase by a subsequent rule. Second, a personal pronoun specifier in a [+N]‴ is doubled with a reflexive pronoun. This reflexive pronoun is subject to allomorphy rule 30, and hence shows up as POSS on the head of the phrase. In §4 I showed that a rule for dropping unemphatic 1st and 2nd person pronouns in tensed sentences can be readily extended to 1st and 2nd person specifiers which have been doubled with POSS suffixes.

At this point it is possible to review how my analysis explains the problems posed in the introduction. The POSS suffix goes after the case ending, rather than before, because it is a cliticized word rather than a derivational or inflectional morpheme; in Finnish, clitics do not infix. Problems II and III brought up two ways in which the doubled construction has a more restricted distribution than the POSS suffixes in general: First, although the POSS suffixes can be found in any X‴, the doubled construction occurs on the surface only in a [+N]‴. Second, while pronouns such as interrogatives and inanimates can antecede a POSS suffix, only personal pronouns occur doubled with POSS on the surface. This distribution has been handled by providing a source for POSS suffixes other than the doubling rule—namely, the reflexive pronouns, which a general formulation of the reflexive rule would introduce in specifier position in any X‴. Thus the analysis predicts that any NP which can antecede a reflexive pronoun can antecede a POSS suffix. The doubling rule may then be restricted to apply only in those cases where its effects may be seen on the surface, namely the cases in which a [+N]‴ has a personal pronoun as a specifier. Problem IV brought up cases in which 1st and 2nd person POSS suffixes seem to occur without antecedents. These cases have been handled by allowing 1st and 2nd person pronoun-drop to apply, subject to recoverability of deletion, after doubling has created a reflexive copy.

The traditional analysis of the POSS suffixes was rejected after two difficulties became apparent. First, in order to maintain the claim that POSS suffixes arise as an agreement phenomenon with GEN pronouns, the traditional analysis must insure that reflexivization does not apply to pronouns in specifier position. There appears to be no motivated way to do this, since reflexivization can apply to targets lower down in similar constructions. Second, the traditional analysis requires that all POSS suffixes, including those in V‴s or anteceded by non-human NP's, be generated via an extended doubling rule. In the course of an attempt to formulate this extended doubling rule so as to produce the correct outputs, it was found that a coreference condition would have to be imposed just when doubling was applying to a non-personal pronoun or in a V‴. This condition does not seem to be a natural one.

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