The Finnish possessive suffix *

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The Finnish possessive suffix constitutes a perennial problem of Finnish syntax, debated, without resolution, for decades. The phenomenon has been approached from (at least) three different viewpoints. According to the first one, the possessive suffix constitutes a non-finite agreement marker, being regulated by phi-agreement (Agree in the current minimalist theory). The second hypothesis regards it as an anaphoric element, subject to binding theory and the binding conditions. The third analysis regards the possessive suffix as a mixed category, sometimes falling under agreement, other times under binding. All these analyses share a common ground in the claim that the possessive suffix must be c-commanded by its "antecedent", whether by agreement or by binding. In this article, we report anomalous data, which does not fall under any of these views: the possessive suffix need not, in fact, be c-commanded by its antecedent. We provide a descriptive account of these facts by stating that, under certain circumstances, a failed search for a c-commanding antecedent triggers a discourse search as a last resort. We then propose that these facts are indicative of the presence of a null pronominal, a non-finite *pro*, in close proximity of the possessive suffix. In addition, the possessive suffix is an agreement marker for the *pro*-element.

Keywords: *possessive suffix, binding theory, agreement, non-finite agreement, minimalism*

1 Introduction

Finnish has a mechanism for marking person and number agreement not only on finite verbs, but also on nouns, prepositions, adverbs, non-finite verbs and adjective participles. This mechanism is provided by the possessive suffix (Px), a grammatical specimen of Finnish syntax and morphosyntax investigated, without resolution, for several decades.[1] Some examples of the possessive agreement are provided in (1).[2]

[1]   We write Px/1SG to refer to the possessive suffix showing the first person singular form, for instance. The third person Px is ambiguous between singular and plural readings, so it is glossed as Px/3. These agreement markers are typically associated with a DP (determiner phrase) elsewhere in the clause, and such relations are expressed here by means of indices. When two DPs or phrases are co-indexed, they are interpreted as coreferential and, conversely, if the indices are distinct, they are interpreted as disjoint in reference. Since the question of whether these relations encode agreement, binding, or both is controversial, the indices are used in a theory-neutral sense.

[2]   We use the following abbreviations in this article: A = adjective suffix (participle adjective in this article); ACC=accusative case, e = an empty element or a gap of whatever kind (i.e. PRO, *pro*, trace). ELA = elative case; GEN=genitive case, INF=non-finite verb (any type); KSE=rationale infinitival; MA = MA-infinitival; MA/PTCP=agentive participle; NOM = nominative case, VA/PTCP=VA-participle, PL = plural; *pro*= little-*pro* (empty pronominal); PRO = empty pronominal subject to control; PRT = partitive case; Px = possessive suffix (see note 1); SG = singular; SUP = superlative; VA = VA-infinitival.

(1)   a. *Pekka   kunnosti ostama-nsa   pyörän.*
          Pekka.NOM repaired buy.MA/PTCP-ACC.PX/3 bike.ACC
          'Pekka repaired the bike he bought.'

      b. *Pekka   istui minun   lähellä-ni.*
          Pekka.NOM sat I.GEN near-PX/1SG
          'Pekka sat near me.'

      c. *Hän   löysi   pyörä-nsä.*
          s/he.NOM found bike-ACC.PX/3
          'She found her bike.'

      d. *Minä   ostin   pyörän   voidakse-ni   matkustella.*
          I.NOM bought bike.ACC be-able.KSE-PX/1SG travel.INF
          I bought a bike in order to travel.'

      e. *Me   uskoimme ostava-mme   pyörän.*
          we.NOM believed buy.VA-PX/1PL bike.ACC
          'We believe that we would buy a bike.'

   There are currently three schools of thought concerning possessive suffixation in Finnish. According to the first one, the possessive suffix acts as an agreement marker that takes place in non-finite environments, such as adjective participles (1a), postpositions (1b), nouns (1c), and non-finite verbs (1d-e) (Anderson 2005: 235–239, Karlsson 1977, Nikanne 1989, van Steenbergen 1987, 1991). Under this hypothesis, it is the theory of agreement (or Agree, in the current minimalist theory) which carries the burden of possessive suffixation. Another line of thought regards the possessive suffix as an anaphoric element, which puts it under systems of binding, government, and anaphor resolution (Pierrehumbert 1980, Trosterud 1993, Vainikka 1989, 2012). There is evidence in favor of both theories. In fact, some authors have proposed mixed models, in which the possessive suffix can be both, an agreement marker and an anaphoric element, depending on the context (Nelson 1998, Toivonen 2000, Hakulinen et al. 2004). We will return to the details later on.

   A common denominator of all of these proposals is that the possessive suffix must be c-commanded by its correlate at the grammatical level, where the behavior of the possessive suffix is overseen. First, within anaphor theories, the antecedent selection follows the standard binding theoretical principles (Chomsky 1980, Reinhart 1983). For example, in sentence (1c), the DP *hän* 's/he' c-commands the DP *pyöränsä* 'his/her bike' that hosts the possessive suffix. (A node c-commands its sister node and all of its sister's descendant nodes. We will return to the exact definition of c-command in section 3.)

(2)   *Hän$_i$ löysi   pyörä-nsä$_i$.*
      s/he found bike-ACC.PX/3
      'She found her bike.'

   Within agreement theories, it is typically assumed that the controller of agreement occurs at the local specifier position of the head that hosts the agreement marker, creating

a Spec-head agreement configuration. Thus, in the example (3), the pronoun occupies the specifier position of the noun phrase.

(3) *hänen   pyörä-nsä*
     his/her.GEN bike-PX/3
     'his/her bike.'

In this article, we examine data which calls the c-command assumption into question. We show that there are scenarios under which the antecedent does not c-command the possessive suffix. A sample of our data is provided in (4). Notice how in each case the possessive suffix can access a 'wild' antecedent in a way that cannot be easily understood as a form of agreement or anaphor binding.[3]

(4)

a. *Tämä on [[[Jere$_i$ ottama]   kuva]   [siskosta-an$_i$ Jadesta]].*
    this is   Jere.GEN take.MA/PTCP picture sister.of-PX/3 Jade.of
    'This is the picture that Jere took from his sister Jade.'

b. *[[Isä-nsä$_i$ veroiseksi] tuleminen] muutti   hänet$_i$.*
    father-GEN.PX/3 equal.to   becoming changed s/he.ACC
    'Becoming equal with his father changed him.'

c. *[Kiinnostus toisia-an$_{i+j}$ kohtaan, jota   Pekka$_i$ ja   Merja$_j$ osoittivat], oli*
    interest   each.other.PAR-PX/3 towards which Pekka and Merja showed   was
    ohimenevää.
    fleeting
    'The interest in each other that Pekka and Merja showed was fleeting.'

d. *Vanhempana poikana Eesau$_i$ piti   huolta, että isä-nsä$_i$ piti   hänestä*
    older.as   son.as Eesau.NOM took care   that father-NOM.PX/3 liked s/he.of
    enemmän.
    more
    'As the older son, Eesau ensured that his father liked him more.'

e. *Äiti-nsä$_i$ lähtee mukaan ja onkin   ihan kivaa matkaseuraa.*
    mother-NOM.PX/3 goes along   and is.3SG.too quite nice travel.company
    'His/her mother will come along, and she is quite nice travel company.'

It should be noted that examples (4c-e) are not part of the normative grammar of Finnish. However, according to Hakulinen et al. (2004: §1295), the contextual reference of the possessive suffix is widespread in colloquial speech, newspapers, and magazines. We

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3   The possessive suffix is ambiguous in example (4e). The suffix *-nsA* is used both in the third person singular and plural. Thus, the entity picked up from the context in (4e) can be either singular or plural.

will return to the usage and stylistic and dialectal variation of the lone possessive suffix in section 3.

Let us have a look at some of the possible explanations for (4a-e). One possibility is that the specimens have been misanalysed, and that the correct analysis does not involve a c-command violation. According to this claim, there is an analysis, or a stage in the derivation, where the c-command constraint is in force. We will argue that such analysis is unlikely and thus reject this alternative. The second option is to stretch either agreement theory or binding theory to cover the non-c-command territory exhibited in (4). The problem with this strategy is that new agreement and binding possibilities would open up at once that are simply not attested and would require significant amount of damage control and theory re-crafting. We will therefore not follow this path, although it remains a possibility. A third possibility is to grant the 3rd person possessive suffix a special, perhaps "logophoric" status, and liberate it from the c-command condition. We recommend against this strategy as well, since, as we will show in a moment, in most cases, the possessive suffix *is* related to an antecedent that c-commands it. Thus, we want a theory which keeps the c-command condition as a theorem that is not in force in examples such as (4).

We will show, instead, that the non-c-command antecedents only emerge if no c-command antecedents are found, and that their selection is strongly affected by discourse. Hence, we propose a descriptive 'discourse friendly' rule, according to which, the non-c-command antecedents are selected from the discourse as a last resort *only if* the c-command antecedent search fails (i.e., c-command grammatical antecedents > non-c-command discourse antecedents). This descriptive rule, which, importantly, applies to the behavior of the *finite* null subjects in Finnish (Brattico 2015), leads us to believe that the possessive suffix is always accompanied by a local pronominal element, a non-finite null subject, or specifier.

Thus, instead of placing the burden of antecedent selection on the possessive suffix, we propose that the possessive suffix is a person and number agreement marker for a pronominal element that is located in the specifier of the head bearing the possessive suffix. If so, what kind of null pronominal are we dealing with? We suggest that both PRO-element and the little *pro* are able to license possessive suffixes in Finnish. Finnish is a partial pro-drop language: in finite clauses, 1st and 2nd person subjects can be dropped, but dropping a 3rd person subject is restricted by both syntactic and discourse factors. In finite clauses, the empty subject position contains a little *pro* (e.g. Vainikka & Levy 1999, Holmberg 2010). We suggest that the possessive suffix can be licensed in non-finite contexts by the same pronominal element *pro*. The *pro*-element is located in the specifier/subject position of the head hosting the Px, as in (5). This would explain why it, too, is sensitive to discourse in the selection of its antecedent. Our hypothesis is an elaboration of Vainikka (1989) and van Steenbergen (1991), both of whom have proposed that there exists a non-finite pro-drop phenomenon in Finnish.

(5) *Hän_i löysi   [pro_i pyörä-nsä].*
     s/he found   bike-ACC.PX/3
     'She found her bike.'

This article is organized so that section 2 introduces the basic properties of the Finnish possessive suffix and provides an overview of previous accounts. Section 3 discusses contexts in which the Finnish possessive suffix seems to be licensed without a c-commanding antecedent. In section 4, we present evidence for an analysis of the possessive suffix in terms of a pronominal *pro*-element, and section 5 provides the syntactic analysis. Finally, section 6 concludes the article. In addition, this paper is the first part of what was originally a larger work. The second part now constitutes the supplementary material (Brattico & Huhmarniemi 2016), which is available online.

2   Possessive suffix as a phi-agreement marker

We will begin with the agreement hypothesis. According to the agreement hypothesis, the Finnish possessive suffix is a phi-agreement marker licensed by an overt or covert pronominal in the specifier of the relevant head. Section 2.1 discusses the licensing of the Px, and section 2.2 provides some basic arguments for analyzing the Px as a suffix, rather than a clitic. Section 2.3 investigates the phi-feature specification of the possessive suffix.

2.1   Licensing of the possessive suffix

The Finnish possessive suffix attaches itself to nouns, non-finite verbs, prepositions, and adjective participles. In each of these environments, it shows the 1st, 2nd, and 3rd person and singular-plural number feature distinctions, as in (1a-f) (the singular/plural distinction is not manifested in the 3rd person).[4] In these examples, the possessive suffix shares the person and number features with the possessive human pronoun. The possessive suffix will be glossed as Px/phi, where *phi* denotes the person and number features.

(6)   a. *minun laukku-ni*
           my   bag-PX/1SG
           'my bag'

       b. *sinun laukku-si*
           your bag-PX/2SG

       c. *hänen   laukku-nsa*
           his/her bag-PX/3

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[4]   In addition, the 3rd person suffix has two variants *-nsA* and *-Vn*. For details, see Hakulinen et al. (2004: §95).

    d. *meidän laukku-mme*
       our   bag-PX/1PL

    e. *teidän laukku-nne*
       your bag-PX/2PL

    f. *heidän laukku-nsa*
      their bag-PX/3

Examples (7a-b) illustrate contexts where the 3rd person possessive suffix behaves like a reflexive anaphor that takes a DP as a correlate. In addition, the correlate must be local (7c).

(7)   a. *Pekka$_i$ korjasi pyörä-nsä$_i$.*
       Pekka.NOM fixed   bike-ACC.PX/3
       'Pekka fixed his bike.'

     b. *Kaappi$_i$ löysi   paikka-nsa$_i$.*
       cupboard.NOM found place-ACC.PX/3
       'The cupboard found its place.'

     c. **Pekka$_i$ kertoi, että minä   korjasin pyörä-nsä$_i$.*
       Pekka.NOM told   that I.NOM fixed   bike-ACC.PX/3

In contrast, 1st and 2nd person possessive suffixes can also access contextual correlates (8a-c). They thus display properties of a pronoun, unlike the third person Px, which cannot normally receive a contextual correlate (d).

(8)   a. *Minä$_i$ korjasi pyörä-ni$_i$.*
       I.NOM fixed   bike-ACC.PX/1SG
       'I fixed my bike'

     b. *Pekka   korjasi pyörä-ni.*
       Pekka.NOM fixed   bike-ACC.PX/1SG
       'Pekka fixed my bike'

     c. *Pekka   korjasi pyörä-si.*
       Pekka.NOM fixed   bike-ACC.PX/2SG
       'Pekka fixed your bike'

     d. **Minä korjasin pyörä-nsä.*
       I.NOM fixed   bike-ACC.PX/3

In the anaphoric theories of the Px, the 3rd person possessive suffix is treated as a reflexive anaphor that takes a local DP as a correlate (Pierrehumbert 1980, Vainikka 1989, 2012, Trosterud 1993). In examples (6), the correlate is the pronoun in the specifier of the NP, and in examples (7), the correlate is a local c-commanding DP.

In this paper, we argue for the hypothesis that the Finnish possessive suffix is an agreement marker (Anderson 2005: 235–239, Karlsson 1977, Nikanne 1989, and van Steenbergen 1987, 1991). In addition, we borrow the basic idea from van Steenbergen (1991),

in which the Px is licensed by a null pronominal (9). This view is also adopted in Reime (1993), Kaiser (2002) and Vainikka (2012):[5]

(9) *Pekka$_i$ korjasi [$_{NP}$ pro$_i$ pyörä-nsä].*
     Pekka.NOM fixed   bike-ACC.PX/3
     'Pekka fixed his bike.'

A crucial difference between our analysis and that of van Steenbergen (1991) concerns the identity of the null pronoun. Whereas for van Steenbergen (1991), the null pronoun that licenses 3rd person Px is anaphoric, we propose that the null pronoun has both anaphoric and pronominal properties.[6] Indeed, based on the existence of non-c-commanding antecedents, the 3rd person possessive suffix shows mixed properties with regard to anaphoric and pronominal binding. The alternative we want to put forward here is that the mixed binding properties can be accounted for by assuming that the Px can be licensed by a little *pro*. Another motivation for this analysis comes from the fact that the licensing of the possessive suffix in Finnish involves similar pro-drop phenomenon that is found in finite domains, see section 4.2.

2.2   Suffix and clitic analyses

One central question on the Finnish possessive suffix considers its status as a clitic-like element or an inflectional affix. The possessive suffix has been analyzed as an incorporated (Dolbey 1995) or cliticized reflexive pronoun (Pierrehumbert 1980, Nevis 1984, Trosterud 1993). The clitic analysis is supported by the fact that although Finnish implements extensive case and number concord, the possessive suffix occurs only on the head (10a-b). The clitic *-kin*, 'too, also', exhibits similar behavior: it attaches to only one element within an NP (c-d).[7]

(10) a. *nii-ssä   punais-i-ssa   auto-i-ssa-ni*
          those.PL-INE red-PL-INE car-PL-INE-PX/1SG
          'in the new red cars'

      b. **se-ni   punaise-ni   auto-ni*
          the/that-PX/1SG red-PX/1SG car-PX/1SG

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[5]   According to Vainikka (1989, 2012), the possessive suffix is itself a Condition C anaphor that must be locally bound. In Vainikka (1989), it is proposed that the possessive suffix is a head of its own projection. In addition, the 1st and 2nd person possessive suffixes are bound by an implicit discourse-related binder in the specifier of the Px-projection. In the 3rd person, this binder is not present and therefore, the Px requires a local antecedent elsewhere in the structure.

[6]   Finnish has another null subject pronoun that is able to license the possessive suffix in certain contexts – the null subject PRO of obligatory control structures. The contexts, where the PRO-element occurs together with Px are discussed in section 4.2, example (40).

[7]   Further evidence for the clitic analysis is that the possessive suffix occurs after the other inflectional affixes and does not trigger consonant gradation.

    c. *se   punainen auto-kin*
      the/that red   car-*kin*
      'the new red car too'

    d. **se-kin   punainen-kin auto-kin*
      the/that-*kin* red-*kin*   car-*kin*
      'the new red car too'

On the other hand, the possessive suffix is more selective for its host than clitics. For example, the clitic *-kin* can attach to the determiner or a regular adjective (11a), which is not possible for the possessive suffix (b).

(11)   a. *se-kin   punainen auto / se   punainen-kin auto*
        the/that-*kin* red   car   the/that red-*kin*   car
        'the/that red car too'

        b. **se-ni   punainen auto / *se   punaise-ni   auto*
        the/that-PX/1SG red   car   the/that red-PX/1SG car

Kanerva (1987) convincingly argues on the basis of phonological, morphological, and semantic evidence that the possessive suffix is a suffix, not a clitic. He points out, for example, that whereas the possessive suffix attaches to the inflecting stem in example (12a) (example (29) from Kanerva (1987)), the question clitic particle *-kO* attaches to the non-inflecting stem (see also Nelson 1998: 196–203).

(12)   a. *naise-nsa*
        woman-PX/3

        b. **naine=nsa*

        c. *nainen-ko*
        woman-Q

        d. **naise=ko*

We follow Kanerva and assume that the possessive suffix is a suffix, not a clitic. Not much hinges on this assumption, however. If it were a clitic, it would still show person and number agreement, requiring some form of agreement between the pronoun and the clitic.

2.3   Phi-features associated with the possessive suffix

Assuming that the Px is an agreement marker in Finnish, which phi-features are involved in agreement? The first point to notice is that overt full DPs do not trigger possessive suffix-ation in a local configuration. The possessive suffix is only triggered by human pronouns. For example, (13a-c) are ungrammatical.

(13)   a. **sen laukku-nsa*
        its   bag-PX/3

b. **Pekan laukku-nsa*
   Pekka's bag-PX/3

c. **vieraiden laukku-nsa*
   guests'   bag-PX/3

One could therefore propose that the possessive suffix is an agreement marker for the person, number, and *human* feature.[8] We assume this view here.

3 Possessive suffixes without c-command

This section introduces several contexts that contain the 3rd person possessive suffix without a local c-commanding antecedent. We start with an introduction to the c-command relation in section 3.1 and then continue with the data: adjective participles (section 3.2), relative clauses (section 3.3), and clausal domains (section 3.4). The contextual licensing of the possessive suffix is discussed in section 3.5.

3.1 C-command requirement for the possessive suffix

Both the agreement hypothesis and the binding hypothesis of the Finnish possessive suffix have one property in common. Theories of agreement posit a c-command relation between the DP and the agreeing head.[9] The anaphor theories make the same assumption: if the possessive suffix is an anaphor, it will generally require a c-commanding antecedent.

The c-command relation says, in intuitive terms, that a term X c-commands (by definition) its sister node and everything that's inside the sister node. More precisely, we adopt the following definition of the c-command relation (Chomsky 1986):

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[8]   There are certain possible counterexamples to this proposal. First, the wh-pronoun *kenen* 'whose' does not trigger the possessive suffix in (8a), although it only refers to humans. Second, in (8b), colloquial *meikäläinen* 'a person like me' replaces the pronoun, but does not permit the possessive suffix (Toivonen 2000: 582–584).

(i) a. *Kenen pyörä(*-nsä) tämä on?*
       whose bike-PX/3 this is
    b. *Tämä on meikäläisen uusi pyörä(*-ni).*
       this is my   new bike-PX/1SG
       'This is my new bike.'

[9]   Within the generative tradition, there are at least two candidate theories on the origin of agreement. According to the Spec-head theory, agreement takes place between a head and a noun phrase/determiner phrase at its Spec (Chomsky 1993). Another alternative, Agree-based theory, is that a head agrees with a DP it c-commands, while the Spec-head configuration arises via movement (Chomsky 2000, 2008). For Finnish, the former option has been assumed by Vainikka (1989), Nelson (1998), the latter by Brattico & Leinonen (2009), Brattico (2012).

(14) **C-command** Node A c-commands node B if and only if

   a. $A \neq B$,

   b. A does not dominate B and B does not dominate A, and

   c. every X that dominates A also dominates B.

   Dominance Node A dominates node B if and only if A is higher up the tree than B, such that you can trace a line from A to B going only downwards.

The lack of c-command has an effect on grammaticality. This can be seen in examples (15a-c), where the suitable antecedent is embedded within a subject noun phrase, and, hence, does not c-command the possessive suffix. The result is ungrammaticality, or at least a strong feeling of deviance.[10]

(15) a. *?* [Suunnitelma tavata   Pekka_i] häiritsi   serkkua-an_i.*
          plan   to.meet Pekka   disturbed cousin.PAR-PX/3
          Intended: 'The plan to meet Pekka disturbed his cousin.'

   b. *?* [Lahja   Pekalle_i] löytyi   autosta-an_i.*
          present to.Pekka found car.from-PX/3
          Intended: 'The present for Pekka was found in his car.'

   c. *?* [Pekan_i auto] oli   koko   talven   tallissa-an_i.*
          Pekka's car   was whole winter garage.in-PX/3
          Intended: 'Pekka's car was in his garage the whole winter.'

To illustrate the lack of c-command, we have included a tree-graph of the example (15c). Here, the correlate is embedded within the subject argument. Whereas the subject DP as a whole c-commands the possessive suffix, the c-command relation cannot be established between the DP *Pekka* and the DP *tallissaan* 'in its garage'.

(16) *?*[Pekan_i auto] oli koko talven tallissa-an_i*

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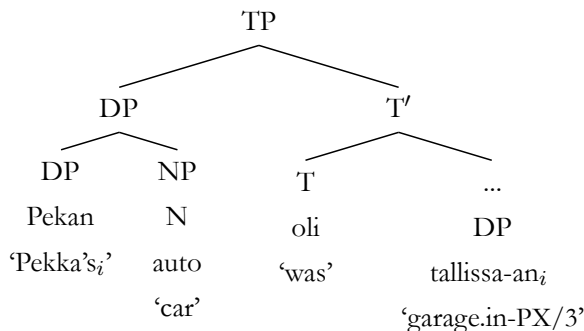
[10]   Example (15c) is grammatical if we interpret the possessive suffix to refer the whole DP *Pekan auto*, 'Pekka's car', when the meaning of the sentence is 'Pekka's car spent the whole winter in its carage.'

Against this background, examples such as (4), repeated here as (17), where the Px is not c-commanded by its antecedent, seem anomalous. We call them "wild" antecedent possessive suffixes, barring a more detailed understanding of their properties. To our knowledge, these data have not been analyzed before.

(17)   a.   *Tämä on [[[Jeren$_i$ ottama]   kuva] [siskosta-an$_i$ Jadesta]].*
         this   is   Jere.GEN take.MA/PTCP picture sister.of-PX/3 Jade.of
         'This is the picture that Jere took from his sister Jade.'

       b.   *[[Isä-nsä$_i$ veroiseksi] tuleminen] muutti   hänet$_i$.*
         father-GENPX/3 equal.to   becoming changed s/he.ACC
         'Becoming equal with his father changed him/her.'

       c.   *[Kiinnostus toisia-an$_{i+j}$ kohtaan, jota   Pekka$_i$ ja   Merja$_j$ osoittivat],*
         interest   each.other.PAR-PX/3 towards which Pekka   and Merja   showed
         oli   ohimenevää.
         was fleeting
         'The interest in each other that Pekka and Merja showed was fleeting.'

       d.   *Vanhempana poikana Eesau$_i$ piti   huolta, että isä-nsä$_i$ piti*
         older.as   son.as   Eesau.NOM took care   that father-NOM.PX/3 liked
         hänestä   enemmän.
         s/he.of more
         'As the older son, Eesau ensured that his father liked him more.'

       e.   *Äiti-nsä$_i$ lähtee mukaan ja   onkin ihan   kivaa matkaseuraa.*
         mother-NOM.PX/3 goes along   and is.too quite nice   travel.company
         'His/her mother will come along, and she is quite nice travel company.'

These examples are problematic to the existing analyses for the possessive suffix, provided that we can show that they cannot satisfy the (standard) c-command requirement at any grammatical analysis, and that they are really used in written and spoken Finnish. These matters will occupy us in the next section.

We will now show that the sentences in (17) do not exhibit a c-command relation between the possessive suffix and its antecedent. Establishing this claim will require a moderate level of syntactic analysis of the relevant constructions and the discussion of some of their possible derivational histories. We want to establish that at no point during their syntactic derivation does the standard c-command relation hold.

3.2   Adjectival participles

Let us start with adjective participles (18a-b). The head of an adjective participle is derived by adding a participial suffix to the verbal stem, such as *-mA* in the example (18a) and *-ttU*

in (18b) (Hakulinen et al. 2004: §122).[11]

(18)   a. *Tämä on [[Jeren$_i$ ottama]   kuva   [siskosta-an$_i$ Jadesta]].*
            this is   Jere.GEN take.MA/PTCP picture sister.of-PX/3 Jade.of
            This is the picture that Jere took from his sister Jade.'

        b. *Tämä on [[Jerelle$_i$ annettu]   kuva   [uudesta autosta-an$_i$]].*
            this is   Jere.to give.VA/PTCP picture new.of car.of-PX/3
            'This is the picture of his new car that was given to Jere.'

The participle in example (18a) is referred to as "agentive participle", because the argument must be thematically interpreted as the agent. Example (b) involves a passive form of the VA-participle, and the DP represents the goal. The phrase *Jeren ottama* in (a) can be translated as a participle 'taken by Jere' or as a relative clause 'which Jere took'. However, Finnish adjective participles are not relative clauses, nor do they share a derivational history with them. We will take a moment to show this.

Finnish adjective participles differ from relative clauses in several respects (Karlsson 1973). First, the head of an adjective participle has characteristic properties of a regular adjective. It displays case and number concord with the noun head, and the word order suggests that the construction is a left-adjoined modifier of the noun phrase. In addition, adjective participles have (limited) comparative and superlative forms.[12] Unlike adjective participles, Finnish relative clauses are postnominal. In addition, whereas participles have reduced agreement and tense inflection, relative clauses are standard finite clauses by their grammatical properties.[13]

Finally, adjective participles are constrained by several restrictions not present in relativization (see Karlsson 1973). For example, whereas adjective participles modify only an NP that is interpreted as the subject or object argument of the participle, relative clauses face no such restriction (Hakulinen et al. 2004: §531). For example, relative clauses such as (19)-(20) do not have a parallel participial form.

(19)   *puisto, jossa   Merja   istui*   *(place relativization)*
        park   where.in Merja.NOM sat
        'a park where Merja used to sit'

---

[11]   Finnish has two other types of adjective participles not discussed here, see Hakulinen et al. (2004: §521)
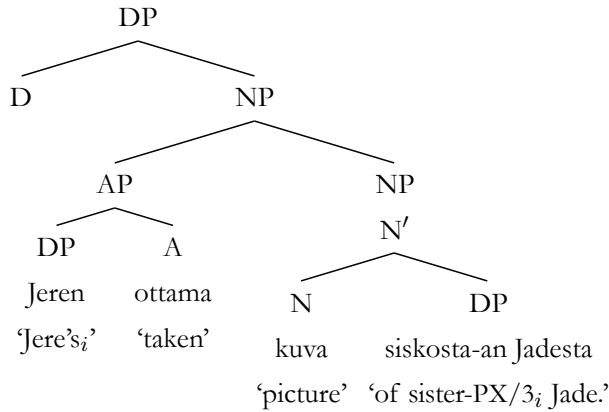
[12]   The more lexicalized the participle is, the more permissible it is with the comparative and superlative inflection. In addition, the presence of arguments restricts the ability to inflect in the comparative and superlative. Thus, the following forms are considered grammatical or slightly deviant: *?sinuun rakastuneempi mies* 'a man more in love with you', *minua haittaavin muutos*, 'the change that bothers me most'.

[13]   In addition, Finnish adjective participles differ from finite clauses in that they do not involve complementizers or other elements typically associated with C-domain (wh-phrases, left peripheral contrastive focus).

(20)   *Merja, jolle   annoimme kirjan   (goal relativization)*
       Merja to.which gave.1PL book.ACC
       'Merja, to whom we gave a book'

We will adopt an analysis that treats the participle as a left-adjoined modifier. A simplified analysis of the sentence (18a) is given in (21). The DP-modifier *siskostaan Jadesta* is in this example located to the complement of the noun head; another option would be to locate it to an adjunct position. In any case, the DP *Jeren* fails to c-command the possessive suffix, and therefore, the possessive suffix should not be licensed.

(21)   *Tämä on [[Jeren$_i$ ottama]   kuva [siskosta-an$_i$ Jadesta]].*
       this   is   Jere.GEN take.MA/PTCP picture sister.of-PX/3 Jade.of
       'This is the picture that Jere took from his sister Jade.'

```
                    DP
              ┌──────┴──────┐
              D            NP
                      ┌─────┴─────┐
                     AP          NP
                  ┌───┴───┐      N′
                 DP       A  ┌───┴────┐
                Jeren  ottama N       DP
               'Jere's$_i$' 'taken'
                             kuva   siskosta-an Jadesta
                          'picture' 'of sister-PX/3$_i$ Jade.'
```

We thus believe that the participle constructions presents a genuine puzzle for any theory of the possessive suffix currently on offer. The same reasoning holds for example (18b).

3.3   Relative clauses

Let us now turn to another problematic wild antecedent construction: the relative clause in (17c), repeated here as (22a) (The comparable English example is from Schachter 1973). Example (22b) shows the same phenomenon.[14]

(22)   a. *[Kiinnostus toisia-an$_{i+j}$ kohtaan, jota   Pekka$_i$ ja   Merja$_j$ osoittivat],*
           interest   each.other.PAR-PX/3 towards which Pekka and Merja showed
           oli   ohimenevää.
           was fleeting
           'The interest in each other that Pekka and Merja showed was fleeting.'

---

14   Example (22b) is not accepted by all speakers of Finnish.

b. *?Se   kuva   äidistä-än$_i$,   jonka Pekka$_i$ otti   vuosia sitten, löytyi*
the/that picture mother.of-PX/3 which Pekka.NOM took years ago   found
muutossa.
move.in
'The picture of his mother which Pekka took years ago was found during the move.'

There are alternative ways to analyze these examples. In one analysis, the PP *toisiaan kohtaan* 'towards each other' is a complement of the noun head, and the relative clause is an adjunct modifier. Alternatively, both phrases can be adjuncts. However, in neither of these analysis is the constituent *Pekka ja Merja* able to c-command the possessive suffix.

There is, however, one possible analysis which would allow the antecedent to c-command the possessive: the raising analysis of relativization proposed by Vergnaud (1974), Schachter (1973), Kayne (1994), Bhatt (2002), de Vries (2002), Bianchi (1999, 2000), among others. Manninen (2003) has defended the raising analysis for Finnish relativization. Ignoring minor details and differences among various raising analyses proposed to date, the raising derivation of (22b) goes as follows. The starting point is (23a), where the NP that the relative clause modifies is contained by the relative clause. This construction is expanded into (23b) by two movement steps. The resulting construction is complemented to D, as in (23c).

(23)   a. *[Pekka$_i$ oli ottanut [jonka kuvan   äidistä-än$_i$]]*
Pekka   had taken which picture mother.of-PX/3

b. *[kuvan äidistä-än,   jonka ___] Pekka$_i$ oli   ottanut ___*
picture mother.of-PX/3 which   Pekka had taken

c. *se   [kuva äidistä-än$_i$,   jonka ___] Pekka$_i$ oli   ottanut ___*
the/that picture mother.pf-PX/3 which   Pekka had taken
'the picture of his mother which Pekka had taken'

In the raising analysis, the noun phrase has thus been inside the relative clause before landing to the surface position. This means that the possessive suffix can be bound by a c-commanding antecedent in the position where it was initially merged; see configuration (23a). The raising analysis thus explains why the possessive can be 'backward bound' to its antecedent.

There are, however, several problems with this hypothesis, as noted by Huhmarniemi & Brattico (2013). Since the point has been argued in detail elsewhere, we recapitulate the basic findings and refer to the above paper for details. The raising analysis, which assumes that the modified noun phrase is located inside the relative clause, predicts that many of its properties should be determined by what is inside the relative clause. For instance, the hypothesis predicts that the case, polarity, and scope properties of the noun phrase should exhibit traces of its first-Merge position inside the relative clause. Huhmarniemi & Brattico (2013) show that no such evidence exists; all syntactic and semantic properties of the head

are indicative of the fact that it has never been part of the relative clause. They further argue, based on Condition C effects and other evidence, that Finnish relative clauses are right-adjoined to the projectional spine of the noun phrase. However, they do not discuss backward possessive binding in examples such as (22a-b) (neither does Manninen), and so, the mystery remains unsolved.

The sum of the evidence is that relative clauses exhibit a phenomenon where the possessive suffix that occurs inside a PP modifying an NP can be bound by an antecedent inside the relative clause. Something establishes a link between them. The link is not operational if the possessive is attached to other elements within the relative clause head.

3.4 Lack of c-command within the clausal domain

In this section, we discuss two types of wild antecedent possessive suffixes, one from colloquial speech and another from normative grammar. In a more colloquial example (24), the correlate is embedded within a DP. In this passive sentence, the DP *Väänäsen urakehitys* 'Väänänen's career prospects' is the direct object argument and the DP *vaimonsa ministeriyteen* 'to his wife's position as a minister' is the indirect object. The antecedent is embedded within the object DP and there is thus no analysis where the c-command relation would hold.[15]

(24) *Väänäsen$_i$ urakehitys   oli   kytketty   vaimo-nsa$_i$*
      Väänänen.GEN career.prospect was connected wife-GEN.PX/3
      ministeriyteen.
      position.as.minister.to
      'The career prospects of Väänänen were connected to his wife's position as a minister.'

This example is problematic when we compare it to examples like (15), where the lack of c-command causes ungrammaticality.

The other example of wild antecedent possessive suffix in clausal domain is offered by a normatively well-formed sentence (25). This sentence contains a psych predicate that has a nominative subject Theme and a partitive Experiencer. Assuming that the subject Theme is base-generated higher than the partitive Experiencer, the c-command condition does not hold.[16]

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[15] Example (24) is from Hakulinen et al. (2004: § 1448). The lack of c-command in these type of examples was noted in Vainikka (1989: 240, fn.4).
[16] Example (25) is from Palander (1999).

(25) *Voutilaista$_i$ harmittaa ja säälittää kahden entisen   seuransa$_i$,*
Voutilainen.PAR is.annoyed and feels.sorry two.GEN former.GEN club.GEN.PX/3
Kuusysin   ja KuPS:n   nykyinen   alennustila.
Kuusysi.GEN and KuPS.GEN present.NOM low.state.NOM
'Voutilainen feels annoyed and sorry about the present low state of his former sport clubs Kuusysi and KuPS.'

However, another analysis for similar constructions is provided by Nelson (2000), where the Experiencer is base-generated higher than the Theme. Under this analysis, example (25) would thus not be problematic. According to Nelson (2000), stative causatives such as *surettaa*, 'to grieve', lack an external argument. She grounds her argument on data from impersonal passivization, binding, case and agentive passivization. We will dedicate the rest of this section to discuss Nelson's analysis. Some of these details are not essential for our main argument and may thus be skipped. However, Nelson's analysis as such provides an important contribution to the syntactic structure of these constructions.

First, word order does not provide direct evidence for either hypothesis; the Theme and the Experiencer seem to be equally valid alternatives for the subject position:[17]

(26) a. *Koirani   kuolema suretti   minua.*
dog.PX/1SG death(N) grieve.CAUS.PST.3SG me.PAR
'My dog's death grieved me.'

   b. *Minua suretti koirani kuolema.*

Data from impersonal and agentive passivization support the lack of an external argument (Nelson 2000). These verbs cannot be passivized, or, if they are, the Experiencer is preserved rather than the Theme. Second, psych predicates cannot be used in agentive participials. These findings can be interpreted as supporting the lack of external argument.

An important source of data that Nelson uses to support the organization of arguments of psych predicates comes from binding. We find the data problematic and provide binding data that points towards a different analysis. For example, Nelson provides the example (27) of reflexive binding Vilkuna (see also 1989: 53). However, to us, this example is marginal.

(27) Nelson (2000: 157)

Mikko-a$_i$ harmitt-i   / sure-tt-i   itse-nsä$_i$.
Mikko-part annoy.CAUS-PST3SG / grieve-CAUS-PST.3SG self.NOM-PX/3

'Mikko annoyed himself / made himself sad.'

Instead, the data from reflexive binding seems to support the analysis where the Theme c-commands the Experiencer (28a). In addition, example (28b), where the Theme in the subject position is a reflexive pronoun, is ungrammatical.

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17   Example (26a) is from Nelson (2000: 169, example (83)).

(28) a. *Matti$_i$ suretti itseään$_i$.*
      Matti.NOM grieved self.PAR.PX/3
      'Matti grieved for himself.'

   b. **Itsensä$_i$ suretti Mattia$_i$.*
      self.NOM.PX/3 grieved Matti.PAR

The most direct support for treating the nominative Theme as the subject, contrary to Nelson's analysis, comes from phi-agreement: these verbs inflect in the person and number of the Theme (18a-c).[18]

(29) a. *Jotkut   asiat   suretta-vat   minua.*
      some.NOM things.NOM sadden-3PL me.PAR
      'Some things make me sad.'

   b. *Sinä   olet surettanut   minua jo   pitkään.*
      you.NOM have saddened.2SG me.PAR already long.for
      'You have made me sad for a long time already.'

   c. *He   harmittavat minua   sekaantuessaan asioihi-ni.*
      they.NOM annoy.3PL me.PAR interfere.INF things-PX/1SG
      'They annoy me when interfering with my business.'

Another piece of evidence for treating the nominative element as a subject rather than nominative object is provided by case assignment in the presence of negation. In Finnish, the negation requires that the object argument is in the partitive (30a-b). However, the negation does not change the case of the Theme to the partitive in (c).

(30) a. *Löydettiin   avain.*
      find.PASS.PST key.NOM
      'A key was found.'

   b. *Ei löydetty   *avain   / avainta.*
      not find.PASS.PST key.NOM   key.PAR
      'A/the key was not found.'

   c. *Minua ei   harmita koira-ni   kuolema   / *koira-ni*
      I.PAR not annoy dog-GEN.PX/1SG death.NOM   dog-GEN.PX/1SG
      kuolemaa.
      death.PAR
      'I'm not sorry about my dog's dead.'

Finally, when the subject position is occupied by an expletive, the order Theme – Experiencer in (31a) is less marked than the order Experiencer – Theme in (31b). This supports the analysis where the base-generated order is (31a).

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[18]   Example (c) is from the Internet.

(31) a. *Sitä   suretti   Pekka   Merjaa.*
          EXPL saddened Pekka.NOM Merja.PAR
          'Pekka grieved Merja.'

      b. *Sitä   suretti   Merjaa   Pekka.*
          EXPL saddened Merja.PAR Pekka.NOM

In addition, a reflexive or a possessive suffix can also be bound by the subject Theme also when the subject is in this low position, as in (32a). The same does not hold in (32b). We propose that in (b), we are dealing with wild antecedent Px. These examples show that the binding properties are already present in the base-generated structure, and do not arise (only) from A-movement to the subject position.

(32) a. *Sitä   suretti   Pekka   ?itseään   / veljeään.*
          EXPL saddened Pekka.NOM self.PAR.PX/3   brother.PAR.PX/3
          'Pekka grieved himself / his brother.'

      b. *Sitä   suretti   Merjaa   *?itsensä   / ?veljensä.*
          EXPL saddened Merja.PAR self.NOM.PX/3   brother.NOM.PX/3
          'Merja grieved herself/her brother.'

We thus conclude that the nominative Theme is base-generated to a higher position than the partitive Experiencer and is assigned nominative case by the T, which agrees with it in phi-features. We therefore believe that these constructions do provide genuine counterexamples to the generalization that the possessive suffix must be c-commanded by its antecedent.

Finally, it should be noted that the binding of the possessive suffix is possible in both orders. For example, the possessive suffix hosted by the Theme can be bound by the Experiencer (33a) and vice versa (33b).

(33) a. *Mattia$_i$ suretti poikansa$_i$ epäonnistuminen.*
          Matti.PAR grieved son.GEN.PX/3 failure.NOM
          'Matti grieved for his son's failure.'

      b. *[Sairas   koira]$_i$ suretti omistajaansa$_i$.*
          sick.NOM dog.NOM grieved owner.PAR.3SG
          'A sick dog grieved its owner.'

Assuming the two sentences above have the same base-generated order of arguments, the c-command condition is not in force in either sentence. Therefore, the exact structural configuration of the sentence does not really matter; the wild antecedent Px seems to be present in any case.

3.5   Contextual licensing of the possessive suffix

Let us now turn to another class of wild antecedent examples, where the correlate of the 3rd person possessive suffix is either too far (34a) or missing altogether (34b) (see Hakulinen

et al. 2004: §1295, for more examples). We believe that in these sentences, contextual access is necessary to establishing the reference.

(34)

    a. *Vanhempana poikana Eesau$_i$ piti   huolta, että isä-nsä$_i$ piti   hänestä*
        older.as   son.as Eesau.NOM took care   that father-NOM.PX/3 liked s/he.of
        enemmän.
        more
        'As the older son, Eesau ensured that his father liked him more.'

    b. *Äiti-nsä$_i$ lähtee mukaan ja onkin   ihan kivaa matkaseuraa.*
        mother-NOM.PX/3 comes along   and is.3SG.too quite nice travel.company
        'His/her mother will come along and she is quite nice travel company.'

The distribution of lone possessive suffixes in constructions such as above is subject to dialectal variation; it is most common in Tavastian dialects (Palander 1999). In the normative grammar, both examples would require the presence of an overt pronoun (hence, *hänen isänsä*, 'his/her father' and *hänen äitinsä* 'his/her mother'). According to Palander (1999), the usage of the overt pronoun with the possessive suffix has developed to a norm slowly from the beginning of the 20th century. The early editions of formal grammar by E.N. Setälä included examples such as *Akka lähti pois, kun miehensä tuli kotiin* 'The wife$_i$ left when husband.Px$_i$ came home' ja *Ei hän taida. Mutta isänsä kyllä taitaa* 'He$_i$ will not. But father.Px$_i$ will'. They were removed in the 1950's as a consequence of the influence of Eastern dialects to Finnish normative grammar (Palander 1999). However, the construction is widespread in colloquial speech.[19]

We investigate the licensing conditions of the possessive suffix in these sentences. Example (34b) does not contain a suitable antecedent, so the c-commanding condition is not met and the antecedent is accessed through context. However, sentence (34a) contains a suitable antecedent *Eesau*, which c-commands the possessive suffix. What makes this sentence exceptional is that the possessive requires a local antecedent, and its licensing cannot normally cross a CP-boundary. For example, sentence (35) is ungrammatical.

(35)   **?Merja$_i$ vakuutti että sinä varastit pyörä-nsä$_i$.*
       Merja   insisted that you stole   bike-PX/3
       'Merja insisted that you stole her bike.'

---

[19]   A characteristic property of possessive suffixes that access a discourse antecedent is that they are often attached to family terms. However, it should be noted that the phenomenon is not restricted to them; also, other nouns can take a wild antecedent possessive suffix:

  (i) *Pekka lähti kotiin. Pyöränsä   jäi   tänne.*
      Pekka left home bike.PX/3 stayed here
      'Pekka went home. His bike was left here.'

It is characteristic to sentences such as (34a-b) that the lone possessor occurs in the subject position of a finite clause, and the antecedent is located in the previous clause or, alternatively, in the immediate context. With this respect, the distribution of a lone possessor is similar to the pro-drop of 3rd person pronouns in Finnish (Vainikka & Levy 1999, Holmberg 2005, 2010, Frascarelli 2014). We will later make much use of this observation.

To gather the relevant points, we have argued that the counterexamples to the c-command requirement are real. No grammatical trickery seems to be available to realign these constructions in such a manner that the standard c-command condition could be satisfied. A theory of the Finnish possessive suffix must incorporate a mechanism which allows the possessive suffix to access elements other than c-commanding antecedents.

4   Evidence for the null pronominal

Wild antecedents present a problem for the previous analyses of the possessive suffix. Neither agreement nor binding can accommodate such facts in any trivial way. In this section, we will first look at the behavior of the c-command and non-c-command antecedents in more detail. The purpose of these arguments is to suggest that there is a pronominal element, a null pronoun, in close proximity to the possessive suffix. We will then use the presence of that null pronominal to access the non-c-commanding wild antecedents. Our hypothesis is illustrated in (36), which shows how the hypothetical null pronoun carries coreference.[20]

(36)

    a.   *Tämä on [[Jeren$_i$ ottama kuva]   pro$_i$ siskosta-an   Jadesta]*.
          this   is Jere.GEN taken picture   sister.of-PX/3 Jade.of
          'This is the picture that Jere took from his sister Jade.'

    b.   *[Kiinnostus pro$_{i+j}$ toisia-an   kohtaan, jota   Pekka$_i$ ja   Merja$_j$ osoittivat]*,
          interest   each.other.PAR-PX/3 towards which Pekka and Merja showed
          oli   ohimenevää.
          was fleeting
          'The interest in each other that Pekka and Merja showed was fleeting.'

First, we show that it is always possible to insert a pronoun to the position of a *pro*-element (section 4.1). In section 4.2, we present data that suggest that possessive constructions have similar properties to finite clauses with regard to pro-drop. Section 4.3 addresses 'long-distance' binding domains for Px. The properties of the Px are compared to

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[20]   We will use a convention whereby the binding properties of various nominal elements are represented by means of indices. Sometimes there are other possibilities besides those we mark explicitly. Thus, the binding relations represented in the examples should be read as a disambiguation device, by which we indicate which of the possible readings we want to draw readers' attention.

pronouns with several respects: binding condition C (section 4.4), quantified noun phrases (section 4.5), sloppy identity readings (section 4.6), and split antecedents (section 4.7). Section 4.8 briefly addresses the logophoric theory of pronouns as an alternative analysis, and in section 4.9, we present our proposal for the last resort mechanism of binding.

4.1   Distribution of pronouns and pro-elements

Here, we will examine the effects of inserting an overt pronoun to the possessive suffix construction. Two things are salient: first, there is always space for an overt pronoun, and second, the overt pronoun, when present, is able to pick up wild antecedents. This is our first clue that the anomalous possessive constructions might in fact contain a pronominal element, a little-*pro*.

(37)

a. *Tämä on [[Jeren$_i$ ottama kuva] hänen$_i$ siskosta-an   Jadesta].*
   this   is Jere.GEN taken picture his/her.GEN sister.of-PX/3 Jade.of
   'This is the picture that Jere took from his sister Jade.'

b. *[[Hänen$_i$ isän-sä   veroiseksi] tuleminen] muutti   hänet$_i$.*
   his/her father-GEN.PX/3 equal.to becoming changed him/her
   'Becoming equal with his father changed him.'

c. *[Kiinnostus heitä$_{i+j}$ toisia-an   kohtaan, jota   Pekka$_i$ ja Merja$_j$*
   interest   they.PAR each.other.PAR-PX/3 towards which Pekka and Merja
   osoittivat], oli   ohimenevää.
   showed   was fleeting
   'The interest in each other that Pekka and Merja showed was fleeting.'

d. *Minä näin [kuvat hänen$_i$ autosta-an   jotka   Pekka$_i$ oli ottanut].*
   I   saw pictures his   car.of-PX/3 which.ACC Pekka had taken
   'I saw the pictures of his car that Pekka had taken.'

e. *Vanhempana poikana Eesau$_i$ piti   huolta, että hänen$_i$ isä-nsä   piti*
   older.as   son.as Eesau.NOM took care   that his/her father-NOM.PX/3 liked
   hänestä enemmän.
   s/he.of more
   'As the older son, Eesau ensured that his father liked him more.'

f. *Hänen$_i$ äiti-nsä   lähtee mukaan ja   onkin ihan   kivaa matkaseuraa.*
   his/her$_i$ mother-NOM.PX/3 goes along   and is.too quite nice   travel.company
   'His/her mother will come along, and she is quite nice travel company.'

g. *Väänäsen*ᵢ *urakehitys oli kytketty hänen*ᵢ *vaimo-nsa*
Väänänen.GEN career.prospect was connected his/her wife-GEN.PX/3
ministeriyteen.
position.as.minister
'The career prospects of Väänänen were connected to his wife's position as a minister.'

It is important to keep in mind that we are *not* claiming that the overt and covert pronouns are the same element. But we are claiming that because there is syntactic space for overt pronouns, and because these overt pronouns can pick up wild antecedents, it is possible to argue that the syntactic slot for an overt pronoun can also be filled by a covert pronoun. Indeed, one important difference between the overt and covert pronouns is that the overt pronoun has an additional reading where the antecedent is accessed from the context. This reading is clearly more difficult to get if the 3rd person pronoun is not pronounced. In our data, reviewed in the earlier chapters, we saw that discourse access for the 3rd person Px is possible, but somehow more restricted.

4.2   The prod-drop phenomenon of the possessive construction

The 1st and 2nd person possessive pronouns can be dropped both in singular and plural (38a-b), while the option is more limited for the 3rd person (38c), which will be discussed later in detail. This phenomenon resembles the Finnish partial pro-drop phenomenon that takes place in finite domains (Vainikka & Levy 1999, Holmberg 2005, Vainikka 2012).[21]

(38)   a.   *(Minun) auto-ni   hajosi.*
              my   car-PX/1SG broke
              'My car broke.'

        b.   *(Sinun) auto-si   hajosi.*
              your   car-PX/2SG broke

        c.   *?*(Hänen) auto-nsa   hajosi.*
              his/her   car-PX/3 broke

Consider the fact that the possessive suffix is not restricted to the expressions of possession. Instead, it can be attached to deverbal nouns (39a), prepositions (39b), adjectivals (39c), and non-finite verbs (39d). All person and number variants are possible in these contexts.

(39)   a.   *(Sinun)   siivoamise-si   on huolimatonta.*
              you.GEN cleaning-PX/1SG is reckless
              'Your cleaning is reckless.'

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b. *(minun) lähellä-ni*
I.GEN near-PX/1SG
'near me'

c. *(sinun)   siivoa-ma-si   huone*
you.GEN clean.MA/PTCP-PX/2SG room
'a/the room cleaned by you'

d. *Pekka lähti (sinun)   siivottua-si   huoneen.*
Pekka left you.GEN clean.TUA-PX/2SG room
'Pekka left after you had cleaned the room.'

Examples (39a-d) display the same type of optionality as regular noun phrases: the genitive pronoun can be dropped in the 1st and 2nd person.[22] We seem to have an across-the-board generalization at play, according to which, both non-finite null pronominals and finite null pronominals are subject to the same kind of split between 1st/2nd and 3rd person pronouns. More evidence towards this conclusion is presented in the supplementary material (Brattico & Huhmarniemi 2016), which is available online.

A potential problem for a *pro*-analysis is the fact that there is a class of constructions that do not exhibit the pro-drop behavior. Consider examples (40a-d), where the local pronoun must be absent, and the possessive suffix is mandatory.

(40) a. *Sinä uskoit   siivoa-va-si   hyvin.*
you believed clean-VA-PX/2SG well
'You believed that you would clean well.'

b. **Sinä uskoit   siivoa-van hyvin.*
you   believed clean-VA well

c. *Sinä lepäsit siivota-kse-si.*
you rested clean-KSE-PX/2SG
'You rested in order to clean.'

d. **Sinä lähdit hänen   siivota-kse-en.*
you   left   s/he.GEN clean-KSE-PX/3
'You left in order for him to clean.'

These sentences would be problematic, if we were claiming that the possessive suffix can be generated exclusively by the little *pro*. This is not what we claim. Recall that the possessive suffix is also generated by *overt* pronouns; indeed, we think that it can be generated

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[22]   The TUA-infinitive also has a passive form which does not take the possessive suffix (22) http://katariinanmatkat.kuvat.fi/blog/26/Saksa,+Ranska,+Italia,+Itävalta+25.5.13+-+19.6.13/

(i) *Pysähdyimme heti   lähdettyä   puoleksi tunniksi Lorelei-neidon   luokse.*
stopped.1PL straight leaving.INF half.for hour.for Lorelei-maiden to
'Straight after leaving, we stopped for half an hour to visit the statue of the maiden Lorelei.'

by pronominal elements in general. Thus, we will argue later in section 5.1 that non-finite clauses in (40) are control constructions with an empty PRO-element. The examples above indeed are standard control structures, which, we assume, involve a PRO subject. Finnish control construction has been recently studied by (Brattico 2015).

4.3   Long-distance binding

Another piece of evidence that brings the anaphor analysis of the 3rd person Px into question is long-distance binding, where the binding domain of pronouns and possessive suffixes are partially overlapping (e.g. van Steenbergen 1991). For example, in (41)-(42), the Px is able to refer to the sentence subject past a more local binder (examples are modified from van Steenbergen 1991).

(41) a. *Pekka$_i$ näki Matin$_j$ lukevan   kirjaa-nsa$_{i/j}$.*
          Pekka saw Matti.GEN read.VA book.PAR-PX/3
          'Pekka saw Matti read his book.'

      b. *Pekka$_i$ näki Matin$_j$ katsovan   häntä$_{i/*j}$.*
          Pekka saw Matti.GEN watch.VA him/her
          'Pekka saw Matti watch him.'

(42) a. *Pekka$_i$ sanoi Jussille$_j$ Matin$_k$ tulevan   katsomaan   autoa-an$_{i/?j/k}$.*
          Pekka said Jussi.to Matti.GEN come.VA watch.MAINF car.PAR-PX/3
          'Pekka said to Jussi that Matti is coming to watch his car.'

      b. *Pekka$_i$ sanoi Jussille$_j$ Matin$_k$ tulevan   katsomaan   häntä$_{i/j/?k}$.*
          Pekka said Jussi.to Matti.GEN come.VA wath.MAINF him.PAR
          'Pekka said to Jussi that Matti is coming to watch him.'

Because the VA-infinitive hosts tense, the binding relation seems to stretch past a tensed clause and its subject and thus further than the "local domain". Kaiser (2002) proposes that the *pro*-element refers to a local topic, whereas the overt pronoun *hänen*, 'his/her', tends to refer to something else. Nevertheless, in the examples above (as in Kaiser's examples), the correlate is found from the minimal finite clause and the c-command relation is still in effect.

4.4   Evidence from the binding condition C

If the possessive suffix occurs together with a null pronoun, it ought to be possible to detect the presence of such pronouns by means of binding conditions. Pronominal binding, specifically, is regulated by the Condition C, which prevents the pronoun to function as an antecedent for a referential expression it c-commands (Chomsky 1986).

(43) **Binding condition C**
   An R-expression is free

If the wild antecedent construction involves a pronominal, it should cause Condition C violations. This prediction is borne out, as shown in (44a-b). In example (44a), the hypothetical pronoun *pro* does not c-command the DP *professori* 'professor', and hence, the coreference is possible. (Recall that we consider the relative clause as a right-adjoined modifier of the noun phrase.) In contrast, example (44b) contains a finite clause in the complement of the noun head. In this sentence, the *pro*-element c-commands the DP and, as expected, coreference is ruled out by Condition C.

(44)

   a.   *Niitä pro$_i$ käsityksiä-än, jotka professori$_i$ oli julkaissut blogissa, pidettiin*
       those   ideas-PX/3   which professor had published blog.in were.regarded
       yliopistoon   sopimattomina.
       university.to unsuitable.as
       'His ideas, which the professor had blogged, were regarded as unsuitable for the university.'

   b.   *pro$_{*i/j}$ Käsityksiä-än, että professori$_i$ oli pitänyt blogia, pidettiin   väärinä.*
            ideas-PX/3   that professor had kept   blog were.regarded wrong.as
       'His ideas that the professor had blogged were regarded as wrong.'

The c-command relation in example (44b) is illustrated below. The *pro*-element occupies the specifier position within the noun phrase, and therefore, it c-commands the DP *professori*. In contrast, the relative clause can obtain a higher adjunct position within the NP (see Huhmarniemi & Brattico 2013) and avoid the Condition C violation.

(45)   *(hänen) käsityksiään, että professori oli julkaissut blogia*
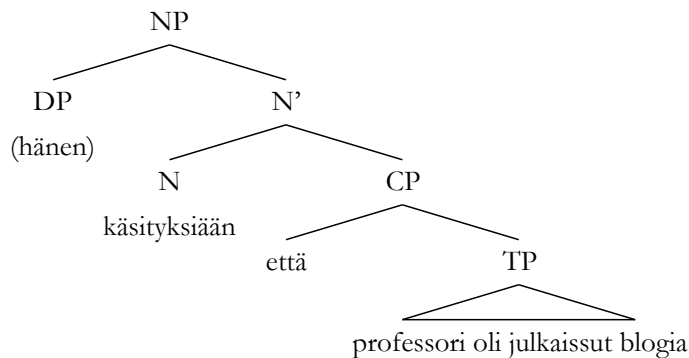
These data show that the possessive suffix constructions behave as if they would be required to obey Condition C, a condition which restricts pronominal coreference.

4.5　　　Quantified noun phrases

Another argument in favor of our analysis comes from quantified NPs (QNPs). A pronoun can be bound by a QNP, so that its reference is dependent on a local or nonlocal quantifier. If the wild antecedent constructions emerge due to pronouns, we should obtain such readings with third-person possessive suffixes. This prediction is borne out. (Indices represent binding relations between the quantifier and the pronoun, not coreference.)

(46)　a. *Kaikki$_i$　pitivät pro$_i$ kuvasta-an.*
　　　　everybody liked　　　picture.of-PX/3
　　　　'Everybody liked his picture.'

　　b. *Jokainen$_i$ mies on pro$_i$ isä-nsä　　　veroinen.*
　　　　Every　man is　　father-GEN.PX/3 equal
　　　　'Every man is equal to his father.'

　　c. *Kukaan$_i$ ei　pitänyt suorituksesta-an$_i$.*
　　　　no-one　not liked　performance.PAR-PX3SG
　　　　'No-one liked his performance.'

　　　Let us then examine sentences where the possessive suffix has a wild antecedent. Examples (47) illustrate binding between a quantifier within an adjoined finite clause and an overt pronoun in the main clause. Examples (47) and (48) show that dropping the 3rd person pronoun does not change the interpretation: the quantifier can still bind something within these constructions, most likely a null pronoun.

(47)　a. *Kun　jokainen lapsi meni nukkumaan, hänen　äiti-nsä　　　luki iltasadun.*
　　　　when each　child went sleep.to　his/her mother-PX/3 read bed.time.story
　　　　'When each child went to sleep, her mother read a bed time story.'

　　b. *Kun　jokainen lapsi meni nukkumaan, äiti-nsä　　　luki iltasadun.*
　　　　when each　child went sleep.to　mother-PX/3 read bed.time.story
　　　　'When each child went to sleep, her mother read a bed time story.'

(48)　a. *Jokainen lapsi meni nukkumaan ja　hänen　äiti-nsä　　　valvoi.*
　　　　each　child went sleep.to　and his/her mother-PX/3 stayed.awake
　　　　'Each child went to sleep, and her mother stayed awake.'

　　b. *Jokainen lapsi meni nukkumaan ja　äiti-nsä　　　valvoi.*
　　　　each　child went sleep.to　and mother-PX/3 stayed.awake
　　　　'Each child went to sleep, and her mother stayed awake.'

　　　Thus, overt pronoun and the mere possessive suffix are parallel; in both cases, bound reading is a possibility. This is accounted for if the possessive suffix is accompanied by a null pronoun.

4.6 Sloppy identity readings

When a pronoun is linked with a definite DP, or with a proper name, it can become ambiguous between a referential interpretation and a bound-variable interpretation (Sag 1976, Williams 1977). This happens when a portion of the sentence containing the predicate is deleted elliptically. Example (49) Reinhart (from 1983) shows this effect.

(49) Felix hates his neighbors and so does Max.
Interpretation a) '....Max hates Felix's neighbors.'
Interpretation b) '....Max hates Max's neighbors.'

The sentence has two interpretations, one where the deleted pronoun is linked with Felix (interpretation a) and another, where it behaves like a variable, taking different values depending on the context (interpretation b). The bound-variable interpretation is called the sloppy identity reading. If such effects could be demonstrated with the possessive suffix, this would give further indication of the presence of a pronoun. Example (50) shows that the sloppy identity reading is present with ordinary use of the possessive suffix. Furthermore, example (51) shows that a lone possessive suffix can generate the sloppy identity reading.

(50) *Pekka vihaa naapureitaan   ja   niin myös Merja.*
Pekka hates neighbors.PX/3 and so   does Merja
Interpretation a) '.. Merja hates Pekka's neighbors.'
Interpretation b) '.. Merja hates Merja's neighbors.'

(51) *Pekan äiti   ajattelee, että pro lapse-nsa   on nero,   ja   niin ajattelee myös Merjan*
Pekka's mother thinks   that   child.PX/3 is genius, and so   thinks   also Merja's
äiti.
mother
Interpretation a) '... Merja's mother thinks that Pekka's child is a genius.'
Interpretation b) ... Merja's mother thinks that Merja's child is a genius.'

We will return to this topic later, in section 5, when we compare the behavior of the *pro*-element to that of PRO.

4.7 Split antecedents

We will next utilize the fact that pronouns allow split antecedents and argue that certain possessive suffix constructions resemble pronouns in this respect. Examples (52a-d) show that pronouns, both overt and covert, allow split antecedents in Finnish.

(52)

a. *Pekka$_i$ ajatteli Merjan luulevan,   että heidän suhteensa   oli lopussa.*
Pekka$_i$ thought Merja$_j$ think.INF that their$_{i+j}$ relationship was end.in
'Pekka thought that Merja was thinking that their relationship was finished.'

b. *Pekka$_i$ ajatteli Merjan kuulleen, että he   lähtisivätkin jo   huomenna.*
   Pekka$_i$ thought Merja$_j$ heard.INF that they$_{i+j}$ leave   already tomorrow
   'Pekka thought that Merja heard that they will leave already tomorrow.'

c. *?Pekka$_i$ kuuli Merjan lähteneen, vaikka   pro$_{i+j}$ sopivat lähtevänsä vasta*
   Pekka$_i$ heard Merja$_j$ left.INF although pro$_{i+j}$ agreed to.leave   not.until
   huomenna.
   tomorrow
   'Pekka heard that Merja had left, although they agreed on not leaving before to-
   morrow.'

d. *Vasemmisto$_i$ ja vihreät voivat miettiä   sitä, että pro$_{i+j}$ lähtisivät   hallituksesta.*
   Left$_i$ and Greens$_j$ can   think.INF it   that pro$_{i+j}$ would.leave government
   'The Left and the Greens could think about leaving the government.'

Example (53a) illustrates that the split antecedent reading is present in the third per-
son plural possessive suffix, which is most likely an instance of pro-drop. However, the
same reading is present with our 3rd person pro-drop in example (53b). (Although not
indicated in glosses, the split antecedent is not the only reading available, but the possessive
suffix may pick the antecedents separately.) Examples (53c-e) show that the split antecedent
reading can be constructed for our core examples of lone possessive suffixes.

(53)

a. *Minä$_i$ uskoin Merjan/sinun$_j$ ajattelevan, että suhtee-mme$_{i+j}$ oli*
   I   belived Merja.GEN/you.GEN think.VA   that relationship-PX/1PL was
   lopussa.
   end.in
   'I believe that Merja/you thought that our relationship was finished.'

b. *Pekka$_i$ uskoi Merjan$_j$ ajattelevan, että suhtee-nsa$_{i+j}$ oli lopussa.*
   Pekka belived Merja.GEN think.VA   that relationship-PX/3 was end.in
   'Pekka believed that Merja thought that their relationship was finished.'

c. *Käsitykset   toisista-an$_{i,j}$,   jotka Merjalla$_i$ ja Pekalla$_j$ oli, olivat vääriä.*
   conceptions each.other.of-PX/3 which Merja$_i$ and Pekka$_j$ had, were wrong
   'The conceptions of each other that Merja and Pekka had were wrong.'

d. *Merjan$_i$ Pekalle$_j$ antamat kuvat lapsista-an$_{i+j}$ olivat kadonneet.*
   Merja.GEN Pekka.to given   pictures children.of-PX/3 had   disappeared
   'The pictures of their children that Merja gave to Pekka had disappeared.'

e. *Isä-nsä$_{i+j}$ veroiseksi tuleminen muutti Pekan$_i$ suhteen   Merjaan$_j$.*
   father-PX/3 equal.to becoming changed Pekka.GEN relationship Merja.to
   'Becoming equal to their father changed Pekka's relationship with Merja.'

In conclusion, several characteristic properties of pronouns are present in construc-
tions that involve a non-c-commanded possessive suffix. This supports the proposal that

there might be a null pronominal in the proximity of the possessive suffix. These data are in agreement with the observation, made earlier, that a c-commanding antecedent is not always required for the 3rd person Px. This is another hallmark of pronominal behavior.

4.8 Logophoric theory of pronouns

Despite the fact that a strong case can be made in favor of the null pronoun hypothesis, there is an alternative that we would like to rule out. The alternative is to regard the non-c-command constructions to reflect 'logophoric' behavior. Clements (1975) shows that in Ewe, a Niger-Congo language, there exists a third type of pronoun side-by-side with reflexives and personal pronouns. This pronoun refers to the person whose speech, thoughts, and more general 'point of view' is adopted in uttering the sentence. Thus, its referential potential is dictated by discourse properties. Such logophors do not require the presence of a c-commanding antecedent. Similar facts have been reported for Japanese (Oshima 1979) and Icelandic (Thráinsson 1976, Sigurdsson 1986), (see Cole et al. 2001: for a review). One could thus analyze Finnish possessive suffixes as logophoric.

There are, however, several points of view which speak against this hypothesis. One is that the Finnish third person possessive suffix does pick up a c-commanding antecedent, if such is present. That is, if a c-commanding antecedent exists, it will provide the referential value for the possessive suffix and prevent logophoric or discourse-oriented interference. This suggests anaphoric behavior in contrast to logophoric behavior. The second problem with the logophoric analysis is that, even if we examine the constructions that lack c-commanding antecedents (e.g., ex. (4)), the antecedents are not determined by any type of 'point of view' analysis. Thus, in examples (4), the antecedent remains the same, irrespective of whether it refers to a person whose point of view is reported.

4.9 Evidence for the last resort mechanism

While an overt pronoun can pick up a discourse antecedent virtually under any circumstances, the null pronominal, that we propose to license the possessive suffix, cannot. There is some type of resistance towards discourse antecedents. This observation will be captured in this section, by showing that the discourse search is triggered as a *last resort* strategy. In other words, it is only in the absence of a c-commanding antecedent that the null pronominal is able to access wild antecedents.[23]

(54)   Antecedent condition for null pronominals (Finnish)

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[23]   The discourse-friendly rule (54) is not meant to be universal. There are languages, such as Chinese, in which c-commanding noun phrases serve as antecedents for null pronouns, but there is no priority between (A) and (B). C-commanding and non-c-commanding antecedents are equally possible, even in the presence of the former (Huang, 2000: 66-67). An alternative conceptualization is to say that in such a language, only rule (B) is in operation, meaning that in these languages antecedent selection is 'discourse-oriented'. In Finnish, option (B) is available as a last resort with limited application.

A null pronominal in Finnish (**A**) must be paired with an overt c-commanding antecedent, but if no such antecedent is found, (**B**) discourse repository is accessed as a last resort.

Rule A is supported by all previous research, which shows that the c-command condition is often a requirement. The B-strategy is partially supported by the data, documented in this article, which shows that discourse antecedents are a possibility. According to (54), their mutual hierarchy is such that B-strategy is only triggered once A-strategy fails. This is shown by the data in (55). Once a c-commanding antecedent is present, wild antecedents disappear. In similar examples examined earlier, no c-commanding antecedent was present, and hence, we witnessed wild antecedents.

(55) a. *Pekka$_i$ myi [[Merjan$_j$ ottamat]   kuvat   pro$_{i,??j}$ autosta-an].*
      Pekka sold Merja.GEN take.MA/PTCP pictures   car.of-PX/3
      'Pekka sold the pictures of his/??her car that Merja had taken.'

   b. *Merja$_i$ näki [kuvat   pro$_{i/*j}$ autosta-an   jotka   Pekka$_j$ oli   ottanut].*
      Merja saw pictures.ACC   car.of-PX/3 which.ACC Pekka   had taken
      'Merja saw the pictures of her/*his car that Pekka had taken.'

   c. *Hän on [[pro$_i$ äiti-nsä   näköinen] poika$_i$].*
      He   is   mother-GEN.PX/3 looking   boy
      'He is a boy who looks like his mother.'

   d. *Merja$_i$ uskoi   pro$_{i/*j}$ äitinsä   tulevan   hakemaan   hänet$_{i/j}$*
      Merja believed   mother.GEN.PX/3 come.VA pick.up.INF his/her
      iltapäivällä.
      afternoon.at
      'Merja believed that her mother will come to pick him/her up this afternoon.'

Rule (54) does not impose locality conditions on the selection of the antecedent. We did not propose any such locality limits because "long distance" antecedents are also possible, as we saw in section 4.3. Incidentally, this is yet another feature which suggest that there is a null pronoun. Antecedents of pronouns, unlike the antecedents of reflexive pronouns, for example, are not limited by grammatical locality.

The two strategies listed in (54) are based on two different computational mechanisms. The first strategy is based on c-command and operates in narrow syntax/LF interface and generates bound readings. Thus, quantifier-variable constructions of several types are possible, such as (56a). The second strategy accesses discourse and is sensitive to discourse properties, such as topicality or discourse salience. This mechanism cannot generate quantifier-variable readings (b-c).

(56) a. *Kukaan$_i$ ei   hyväksynyt väitettä että pro$_i$ on huono työntekijä.*
      no-one.NOM not accepted claim that   is bad   emloyee
      'No-one accepted the claim that s/he is a bad employee.'

b. *Kukaan_i ei hyväksynyt väitettä. Hän_i on huono työntekijä.*
   no-one not accepted claim. s/he is bad   employee
   '*No-one_i accepted the claim. She_i is a bad employee.'

c. *Mitä tulee häneen_i, kukaan_i ei ole huono työntekijä.*
   what comes s/he.to no-one not is bad   employee
   '*As with her_i, no-one_i is a bad employee.'

5   An analysis

Our hypothesis thus far is that the possessive suffix is an agreement marker, agreeing in both person and number features of a local pronominal element. When the possessive suffix emerges in isolation, it is accompanied by a null pronoun. Furthermore, the null pronoun can be linked to its antecedent by one of the two ways (54): (A) by searching for a c-commanding antecedent, generating a bound reading, or (B) by searching the discourse, generating an independent reference reading. The data shows, we think, that any rule for the antecedent selection must be discourse friendly in the sense that it must contain a clause that permits discourse search. But what kind of null pronominal behaves in this way? In this, last section, we discuss some of the possibilities and suggest that the element is the little *pro*. However, we will not address the matter in detail here, but see the supplementary material (Brattico & Huhmarniemi 2016).

5.1   Comparison of *pro*-element to PRO in Px-constructions

We think that the putative null pronominal exhibits both anaphoric and pronominal properties. It is anaphoric because it is strongly related to a possible c-commanding antecedent (rule A). It is also pronominal because it may access the discourse, much like an overt pronoun (rule B). But unlike overt pronouns, the discourse search is conditioned by the failure of the anaphoric search. What is this null pronoun? One possibility is PRO, which occurs in various control structures, and little *pro*, which appears in the subject position in finite clauses. Let us start this section by observing that there is a case to be made for both.

It is well-known that the English PRO, when occurring in the absence of an antecedent, will generate a generic reading that can be further interpreted on the basis of the discourse (e.g., *to be always late is impolite*). Notice that the generic reading disappears once there is an antecedent (e.g., *John wants to be always late* cannot obtain the generic reading). This is reminiscent of (54), although the details are, of course, different. For example, in Finnish the generic reading emerges differently (Holmberg 2010). Yet, there is a similarity here that might not be entirely coincidental; one type of reading emerges once the more preferable one fails.

Another fact that speaks in favor of positing PRO is that the possessive suffix is a non-finite agreement marker, and PRO is normally assumed to occur in non-finite contexts.

So it makes sense to assume that the null pronoun that occurs inside the non-finite contexts examined in this paper is PRO. A potential complication in this direction is that no published research on Finnish control exist to date, so the hypothesis would remain a conjecture.

Even if, prima facie, one could be tempted to posit that the possessive suffix is an agreement marker for PRO, similar discourse antecedent properties have been reported for the Finnish little *pro* as well. Even if the Finnish third-person little *pro* normally requires a c-commanding antecedent, it can live without one (Holmberg 2010, Frascarelli 2014), and when it occurs without a c-commanding antecedent, we observe similar reluctance to search the discourse. Discourse options are more marginal, more peripheral, in some sense. In short, here too, we find something similar to (54). In fact, a possible interpretation of the facts is that (54) is a more general property of null pronouns, which means that we cannot use this property alone to distinguish PRO and *pro* – if there indeed is a distinction to be made.

What we can do, however, is to document certain important differences between lone possessive suffix constructions and certain standard control structures. Recall from section 4.6 that the lone possessive suffix construction can generate sloppy identity readings, which we used to argue that there indeed is a pronoun in close proximity to the possessive suffix. Standard control structures, such as the A-infinite or the VA-infinitive, cannot generate sloppy readings. This is illustrated in (57). Example (58) displays the PRO-element in VA-infinitive, which causes possessive inflection on the non-finite verb.

(57)   *Pekka haluaa PRO syödä kalaa, ja   niin haluaa myös   Merja.*
        Pekka wants   eat   fish, and so   also   wants Merja
        *Interpretation a) '... Merja wants Pekka to eat fish.'
        Interpretation b) '...Merja wants Merja to eat fish.'

(58)   *Pekka tiesi   PRO haluava-nsa   kotiin,   ja   niin tiesi   myös Merja.*
        Pekka knew   want.INF-PX/3 home.to, and so   knew also Merja
        *Interpretation a) '... Merja knew that Pekka wanted to go home.'
        Interpretation b) '...Merja knew Merja wanted to go home.'

While the status of the Finnish obligatory control PRO remains a subject of debate, these data show that overt pronouns and PRO contrast with respect to their ability to generate sloppy identity readings.

In a similar vein, control PRO does not allow split antecedents in Finnish, as shown in (59a-c). As we saw in section 4.7, when the possessive suffix is an agreement marker for the *pro*-element, it patterns with pronouns and not with the obligatory control PRO-structures.

(59) a. *Pekka$_i$ tiesi että Merja$_j$ haluaa PRO$_{*i+j}$ lähteä.*
Pekka knew that Merja wants   leave.INF
'Pekka knew that Merja wants to leave.'

b. *Pekka$_i$ käski Merjan$_j$ PRO$_{i+*j}$ lähteä.*
Pekka told Merja.to   leave.INF
'Pekka told Merja that he wants to leave.'

c. *Pekka$_i$ ajatteli Merjan$_j$ haluavan PRO$_{*i+j}$ lähteä.*
Pekka thought Merja.GEN want.VA   leave.INF
'Pekka thought that Merja believed that they'd leave.

d. *Pekka$_i$ halusi Merjan$_j$ tietävän PRO$_{*i+j}$ lähtevän-sä.*
Pekka wanted Merja.GEN know.VA   leave.VA-PX/3
Intended: 'Pekka wanted Merja to know that they would leave.'

What these data show is that the lone possessive suffix construction is not similar in its properties to standard control constructions. Perhaps the lone possessive suffix construction is "more pronominal", or more independent, than strict control structures. Indeed, as reported in Brattico (2015), who presents an analysis of the Finnish control, the null subjects in standard control constructions in Finnish cannot pick up discourse antecedents; they *must* pick up structural, c-commanding antecedents.

There is another crucial fact which suggests that the lone possessive suffix construction is equipped with the little-*pro* and not PRO. Finnish little *pro*-constructions are characterized by the property that the *pro* occurs in positions where overt pronouns occur (vice versa is not true). This was shown in section 4.1. This is not true for standard control structures, which often (but not always) lack the ability to host an overt pronoun (60).

(60) *Pekka   halusi   (*Merjan) lähteä.*
Pekka.NOM wanted Merja.GEN leave.INF
'Pekka wanted Merja to leave.'

Finally, and most importantly, the conditions for pro-drop seem to be identical for finite *pro* and the null pronoun in lone possessive suffix constructions, as we proposed in section 4.2 and have argued in the supplementary material (Brattico & Huhmarniemi 2016).

5.2   Non-finite *pro*-element

While finite *pro* occurs in the subject position of a finite clause, the non-finite *pro* must occur in the specifier position of the grammatical head manifesting possessive agreement. That is, it occurs in the specifier position of noun heads, adjective heads, adverbs, some non-finite verbs, and adpositions. It establishes an agreement-type of relation with the head, which then manifests possessive agreement. As in the case of finite pro, agreement is a necessary condition for the occurrence of the non-finite pro; when an overt pronoun is present, overt

agreement on the head is (often) optional. This is shown in (61).[24]

(61)   a.   *(minun) auto (colloquial)*
             my   car
             'my car'
        b.   *(minun) auto-ni*
             my   car-PX/1SG
             'my car'

The constitution of the *pro*-element itself is controversial, very little studied for Finnish, and hard to nail down due to its lack of phonological substance. Holmberg (2010), for example, assumes that it lacks a definiteness value and seeks for an antecedent to provide one. This is one possibility. We agree with this assessment at least in the sense that it cannot be a covert version of the overt third person pronoun; instead, it is a special entity that is marked for special interpretation and phonological weakness already in the lexicon.

Toivonen (2000) criticizes the pro-drop hypothesis on two grounds. She first points out (p. 593) that the covert null pronominal that occurs together with the possessive suffix cannot be a phonologically null copy of its overt counterpart. It follows, therefore, that we require two lexical entries for two distinct third-person pronouns, overt (with normal pronoun properties) and covert (with the anaphoric properties mixed in). Toivonen regards this as a problem. While the claim itself is true, we do not see why it is problematic. On her own theory, it is the possessive suffix itself that has two lexical entries (one for agreement, another for being a subject bound reflexive pronoun). In addition, there is much evidence that two lexical entries are required in any case. Not only is the interpretation of the overt and covert pronouns different, but overt pronouns can also express or carry several grammatical features that the covert null pronoun counterparts cannot, as shown in Brattico (2015).[25] These include honorific meaning, focus interpretation, human feature specification, different binding conditions, direct access to discourse and definiteness – all lacking from the covert counterpart. All this is independent of the theory of the possessive suffix; it is already required for the theory of finite pro-drop. We therefore believe that any theory will be forced to recognize that the overt and covert third person pronouns are two distinct grammatical entities. Perhaps Holmberg, for example, is right in that the covert version lacks a definiteness value. This would make its grammatical constitution different from that of its overt counterpart.

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[24]   The argument is present in full in the supplementary material (Brattico & Huhmarniemi 2016). There, we argue that null subjects in Finnish are subject to the following condition, which provides a more detailed formal analysis: "A null subject (=pro) is licensed by phi-agreement with its head H, it satisfies the EPP feature of H (if any) and looks for an antecedent, if it is in the 3rd person. Selection of H is not restricted to the finite domain." See the material for details.
[25]   Also reported in "A comment about the hän/___ problem" found from finnishsyntax.wordpress.com.

Another problem, according to Toivonen (2000), is that while the possessive suffix cannot agree with an overt nonhuman pronoun (62a), it can agree with a null pronoun whose antecedent is nonhuman, as in (62b).

(62)　a.　*sen　　paikka*-nsa*
　　　　　it.GEN place-PX/3
　　　　　'its place'

　　　b.　*Se　　　löysi　　paikka-nsa.*
　　　　　It.NOM found place-ACC.PX/3
　　　　　'It found its place.'

Toivonen says that there is no "natural way" to account for this, but we think there is – the two processes are different. The first is morphosyntactic agreement between the pronoun (whether null/non-null), which is sensitive to the human/nonhuman distinction. The second is an antecedent/control relation between a null pronoun and its antecedent, and this relation is not sensitive to the human/nonhuman distinction. There is independent evidence for this contention: in all constructions involving the possessive suffix and a null pronominal, even in the cases of what appears to be examples of standard obligatory control, the human/nonhuman distinction plays no role. Some examples of standard control are provided in (63a-b). They all involve the possessive suffix and an antecedent link between the suffix and a nonhuman antecedent/controller.

(63)　a.　*Koira　　osoitti　　PRO tunteva-nsa　　minut.*
　　　　　dog.NOM indicated　　　know.VA-PX/3 me.ACC
　　　　　'A/the dog indicated that it recognized me.'

　　　b.　*Auto kiihdytti　　PRO luisuakse-en　　tieltä　　hetkeä　　myöhemmin.*
　　　　　car　accelerated　　　slide.KSE-PX/3 road.from moment later
　　　　　'A/the car accelerated in order to slide from the road a moment later.'

Thus, the morphosyntactic agreement relation between the possessive suffix and the element in its specifier is sensitive to the human/non-human distinction. However, this feature does not participate in the antecedent selection (or establishing the reference) for the null pronominal, see example (64) below. We believe this is because the null pronominal itself is unable to establish an independent reference, thus the human feature is not used in computing its referential properties. The situation is different for overt pronouns, which can refer independently.

(64)　*Koira puri [pro häntää-nsä].*
　　　dog　bit　　　tail-PX/3
　　　'A/the dog bit its tail.'

　　　Koira[-human]　puri　*pro*　häntää-nsä[+human]
　　　　　↑_____↓ ↓_____↑
　　　.　　　　　binding　　　　　　　agree

Toivonen (2000) presents a split analysis, according to which, the third-person possessive suffix has two entries in the lexicon. When the Px occurs together with an overt pronoun, it represents an agreement marker for that pronoun, exactly as it does under our analysis. When it occurs without an overt pronoun, the possessive suffix itself represents a morphologically bound reflexive pronoun that is furthermore bound to a subject. Nothing occurs in the specifier position of the head carrying the possessive suffix; it is either empty or not projected at all.

We believe that the wild antecedent constructions could be explained, in theory, by developing a discourse-friendly theory of reflexive pronouns and thus only by revisiting Toivonen's hypothesis that the possessive reflexive pronoun is always bound to the subject inside the minimal tensed domain. (One problem of this analysis, though, is that it misses the parallelism between finite pro-drop and non-finite pro-drop, making their near-total identity an accident.) Our attempts at this direction nevertheless lead into a problem.

The problem is that Toivonen's analysis is presented within the framework of LFG, a theoretical framework for grammatical analysis which has no phonologically null elements in its arsenal (in the generative theory, in contrast, the issue is framed as an empirical problem requiring argumentation on a case-by-case basis). This explains in part why, according to Toivonen, there is no null pronoun at the specifier of the head carrying the possessive suffix. We believe that our data suggests that there is a null pronoun. But upon closer look, the issue is not that simple to solve. At LFG, there is a deeper level of grammatical representation (f-structure), into which morphologically bound material (such as the possessive suffix) is mapped in the same way as independent words (such as overt pronouns). They both become 'possessor pronouns' at that deeper level of grammatical analysis and are thus virtually equivalent in grammatical function. What we regard as a null pronoun is much like an abstract possessor pronominal at LFG's f-structure. This makes it very hard to compare the two approaches empirically.

Moreover, the f-structure and its elements (abstract features such as definiteness, human/nonhuman, binding features, "subject binding", indexes, plus/minus signs, '*pro*', linking rules, and such) are phonologically abstract, much like phonologically null elements in the generative theory are. Therefore, because both theories work with abstract notions and are theoretically quite powerful, it is possible to rewrite our entire analysis in the LFG framework by making similar adjustments to the theory of finite pro-drop. Our analysis, were it captured in terms of such LFG, would say that whatever element captures the equivalence between the possessive suffix and the overt pronoun at the abstract f-structure must capture the equivalence between finite agreement and finite pro-drop, presenting a unifying account of pro-drop in this language, and thus, explaining the parallelism between the finite and non-finite cases. We think that this would not violate any a priori maxims of LFG; if anything, the approach would seem to agree with the basic tenets of LFG.

In addition, if the data reported in the early portion of this paper is correct, such an LFG analysis would need to revisit the assumption that the reflexive pronoun is necessarily bound to a subject in the minimal tensed domain. That can be achieved in principle by

changing the LFG's SB ("subject binding") feature of the corresponding abstract entries. We believe it would be possible to achieve all this within the LFG, which makes the debate non-empirical.[26]

6   Conclusions

Previous accounts on Finnish possessive suffixes have treated the suffix either as an anaphoric element, or an agreement marker, or a mixture of these. A common denominator with the approaches is the assumption that the possessive suffix is licensed by a c-commanding element, a pronoun, or a noun phrase. In addition, whereas 1st and 2nd person possessive suffixes have the ability to refer outside the sentence, the third person possessive suffix behaves like a reflexive anaphor.

In this paper, we have presented data that suggest that the distribution of the third-person possessive suffix is richer than previously thought. We have discussed several examples where a suitable c-commanding antecedent is missing and the third-person possessive suffix appears to be licensed contextually.

Based on the evidence from the distribution of the third-person possessive suffix, anaphor and quantifier binding, sloppy identity readings, and split antecedents, we propose that the third-person possessive suffix is an agreement marker for a null pronominal that has both anaphoric and pronominal properties. We suggest, tentatively, that the null pronominal in question is a pro-element.

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[26]   On the other hand, we disagree with Toivonen's claim that the possessive data provides strong theory-independent motivation for LFG. She rules a uniform analysis, according to which the possessive suffix is always an agreement marker, as a priori unable to account for "all the facts" (p. 607). We think this is too strong, although it might trivially be true of some such unifying accounts. The second argument is that the LFG analysis uses syntactic assumptions that are motivated independently. This is a valuable point, but also something a useful and insightful syntactic analysis in whatever syntactic framework simply cannot decide to ignore. For example, it is paramount to our analysis that the finite and non-finite pro-drop phenomena are seen as parallel. The third argument is that her theory is simpler, because it involves less "complicated syntactic machinery" with "highly articulated theory of the lexicon", and is therefore a priori to be preferred. Our view is that this issue is non-empirical; what in the generative analysis, such as in ours, is seen as a phonologically null element can, in an LFG framework, be captured by means of abstract syntactic structures, i.e. f-structures, where similar equivalences are captured. It might be that one analysis can be rewritten in the other framework without any loss of simplicity.

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