

The roots and structures of possessive noun classes

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Abstract

In both the typological literature and literature on formal syntax and semantics, a division is drawn between nouns that are inalienably possessed such as body parts and kinship terms and nouns that are alienably possessed such as owned materials. In this paper I re-examine data from Spanish and Mayan languages and propose an analysis of it that emphasizes two important points regarding the roots and structures associated with inalienable and alienable possession. I first make the novel observation that various types of external possession in Spanish provide clear support for the idea that inalienable possession is structurally less complex than alienable possession: inalienable possessive relations are introduced within a complex *n* head that consists of a root and nominalizing head. I then explore attributive possession in Mayan languages and highlight data that leads to conflicting conclusions about where, precisely, inalienable relations such as part-of and kin-of are encoded: on *n* heads or on roots. I outline avenues for future research with the Mayan language family that may help elucidate which of these two analyses may ultimately be correct.

Keywords: (in)alienable possession, roots, Distributed Morphology, Mayan, Spanish

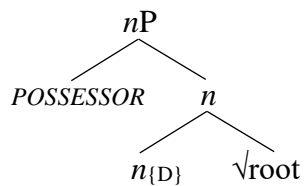
1. Introduction

In both the typological and formal semantic literature, a division is often drawn between nouns that are inalienably possessed such as body parts and kinship terms,

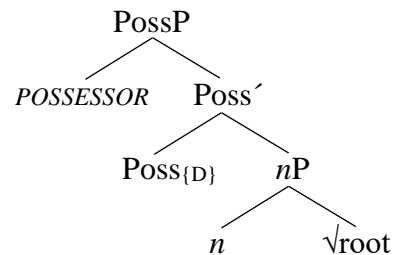
so-called relational nouns, and nouns that are alienably possessed such as objects with owners, so-called sortal nouns (for typological descriptions see Ultan 1978; Seiler 1983; Nichols 1988, 1992; Heine 1997; Nichols & Bickel 2013, for formal semantic descriptions see Barker 1995, 2011; Löbner 2011, for a general overview of both strands of literature see Myler 2016; Karvovskaya 2018). Within the syntactic literature, there is also a history of claims to the effect that the semantic difference between relational and sortal nouns is reflected by a structural difference: inalienable possessors are introduced lower in the noun phrase and are syntactically closer to the possessee than alienable possessors (Español Echevarría 1997; Alexiadou 2003; Myler 2016).

Within non-lexicalist approaches to grammar like Distributed Morphology (DM), (in)alienable possession has been an important empirical domain to investigate the contribution of both the structure and roots to the form and meaning of complex syntactic objects (Adger 2013; Myler 2016, 2018, in preparation). In this paper, I re-examine data from both Spanish and the Mayan languages and propose an analysis that emphasizes two points. The first is that there is a structural difference between inalienable and alienable possession as shown in (1) (see Myler 2016, 2018 for work within DM and Español Echevarría 1997; Alexiadou 2003 for similar proposals in different frameworks).

(1) a. Inalienable possession



b. Alienable possession



In section 2, I present comparative evidence from a range of different morphosyntactic constructions in Spanish that indicates that in an external possession relation when a possessee is bare noun, only inalienable possession is permitted. On the contrary, if the possessee is a DP, both inalienable and alienable relations are possible. Following Myler (2016), I hypothesize that this observation can be straightforwardly explained if we claim that relevant heads in possessive constructions may select for relational $n(P)$ or DP complements. If a possessive construction is specified to select for an $n(P)$ complement, it will only admit inalienable possessive relations due to the structural differences in (1). If, on the other hand, a possessive construction is specified to select for a DP complement, it should admit any type of possessive relation since a D head may merge with either nP or PossP.

While the Spanish data provide evidence in favor of a structural difference between inalienably and alienably possessed nouns, they do not help us decide whether or not inalienable relations themselves are part of the roots or part of the nominalizing head in (1a). In principle, the structural difference in (1) is compatible with either idea. In section 3, I examine a set of attributive possession data from Mayan languages that appears to support both claims. I argue that a subset of attributive possession constructions indicate that the inalienable part-of relation should be encoded on n (following Myler 2018) while another subset of attributive possession constructions

have a simpler analysis if part-of and kin-of are encoded in individual roots (see Myler 2016).

Taken together, the data presented in sections 2 and 3 support the claim that inalienable possessive constructions are syntactically smaller than alienable ones. However, the Mayan data appear to lead to different conclusions about where inalienable possession relations are encoded within the *nP* domain – on *n* heads or on roots. I outline some avenues of future research that may help decide which analysis is ultimately correct.

2. External possession in Spanish: evidence for structural differences between inalienable and alienable possession

Across the Romance languages, there are numerous morphosyntactic environments that appear to be sensitive to the inalienable-alienable division discussed in the introduction. Spanish has at least three constructions that are restricted primarily to inalienably possessed nouns, shown in (2). In each of these, the possessor of a noun that is part of a compound (2a), a noun embedded in an adjectival phrase (2b) or a noun that is the internal argument of a verb (2c) is linked to an external position – in all the examples, this happens to be the sentential subject.

- (2) Spanish
- | | | | |
|-----------------------------|-----------------------|-------------------------|--------------------------|
| a. Ella es pel-i-roja | she is hair-i-red | ‘She is red-haired’ | N- <i>i</i> -A compounds |
| b. Pablo es largo de cuello | Pablo is long of neck | ‘Pablo has a long neck’ | A <i>de</i> N phrases |
| c. Leti movió el pie | Leti moved the foot | ‘Leti moved her foot’ | External possession |

If inalienable possession is distinguished from alienable possession structurally, the question arises as to how we might use this structural difference, in addition to the semantic properties of inalienable possession, in order to explain the restrictions that are observed in these environments (Myler 2016: 366-367). In the following subsections, I show that the constructions in (2a) and (2b) are truly restricted to inalienably possessed nouns because there is an adjective/preposition that is specified to select for *n* possesses that are linked to a possessor externally. On the other hand, external possession in (2c) is typically inalienable but it may also be alienable. The fact that the possessee in those cases is a DP means that the structure below it could potentially be a PossP or an *nP*, which is compatible with either inalienable or alienable possession. Following previous work, I suggest that the constraints on external possession in (2c) that limit it mainly to inalienably possessed body parts have to do with affectedness, a semantic, rather than a structural, property.

2.1 N-*i*-A compounds

N-*i*-A compounds in Spanish contain a noun root followed by the vowel /i/, followed by an adjective that modifies the noun root. Categorically, the adjective at the right

edge functions as the head of the compound and it agrees in gender and number with a subject in a predicative sentence, or a modified noun in an attributive construction. Finally, the subject in a predicative sentence, or modified noun in an attributive construction, is interpreted as the possessor of the noun root in the compound (Picallo & Rigau 1999; Val Álvaro 1999; AALE y RAE 2009: 767-770; Marqueta 2019).

- (3) a. Ellos son pel-i-rroj-os
 they are hair-i-red-M.PL
 ‘They have red hair/They are red-haired’
 b. una persona pel-i-rroj-a
 a persona hair-i-red-F.SG
 ‘a red-haired person’
 c. Ellos son oj-i-tuert-os
 they are eye-i-twisted-M.PL
 ‘They are cross-eyed’
 d. una persona oj-i-tuert-a
 a persona eye-i-twisted-F.SG
 ‘a cross-eyed person’

The N in N-*i*-A compounds must be in a part-whole relation with the external possessor. It is not possible if N is a kinship term or an alienably possessed object as shown in (4) and (5).

- (4) a. *Él es madr-i-jóven
 he is mother-i-young.M.SG
 Intended: ‘He has a young mother’ (lit. He is young-mothered)
 b. *una persona hij-i-numeros-a
 a person child-i-numerous-F.SG
 Intended: ‘a person with many children’ (lit. a much-childed person)
- (5) a. *Juan es carr-i-nuev-o / coch-i-nuev-o
 Juan is car-i-new-M.SG / car-i-new-M.SG
 Intended: ‘Juan has a new car’ (lit. Juan is new-carred’)
 b. *Ellos son cas-i-grand-es
 they are house-i-big-M.PL
 Intended: ‘They have a big house’ (lit. They are big-housed)

2.1.1 Possessive predicativization: background

I claim that N-*i*-A compounds should be included in the typology of a possessive strategy known as predicativization (Stassen 2009; Myler 2016). The hallmark of this kind of possessive strategy is that the possessee is a nominal or adjectival predicate and the possessor is the subject. Myler (2016: 347-366) argues that Quechuan languages have nominal possessee predicates that are headed by the predicativizing morpheme *-yoq* as in (7).

- (7) Cochabamba Quechua (Myler 2016: 365)
 a. Noqa [_{NP} wawa-yoq] ka-ni
 I child-YOQ be-1SG
 ‘I have a child’

- b. Noqa [_{nP} yana chujcha-yoq] ka-ni
 I black hair-YOQ be-1SG
 ‘I have black hair’

English, on the other hand, has adjectival possessee predicates that are headed by the predicativizing morpheme *-ed* as in (8).

- (8) English
 a. a [_{aP} bearded] warrior
 b. She is [_{aP} brown-eyed]

Interestingly, in addition to categorial differences between the possessee predicates, there are also differences in the apparent size of what can be embedded under the predicativizing morphemes. For instance, Cochabamba Quechua *-yoq* can create possessee predicates out of full DPs while English *-ed* may only combine with bare nouns or nominal compounds. This difference is shown in (9).

- (9) a. Cochabamba Quechua (Myler 2016: 367)
 Noqa askha puka auto-s-ni-yoq ka-ni
 I many red car-PL-EUPH-YOQ be-1SG
 ‘I have a lot of red cars’
 b. English (Myler 2016: 367)
 *John is lovely big blue-eyed
 Intended: ‘John has lovely big blue eyes’

Given these basic observations about possessive predicativization, Myler (2016: 367) claims that the two primary ways in which predicativization may vary across languages depend on the category of the predicativizing head and the nature of its relational complement.

- (10) Parameters of variation in Predicativization
 a. The category of the derivational morpheme itself (*n/a*).
 b. The size of the relational structure that it embeds (DP/*nP*)

If the hypothesis that inalienable possessive relations are *nPs* and alienable ones are PossPs is on the right track, a prediction is made about which kinds of relations can possibly surface in different types of possessive predicativization. Since Poss merges above *nP*, a predicativizing morpheme that selects an *nP* complement should only be compatible with inalienable possessive relations. On the other hand, a predicativizing morpheme that selects a DP complement should be compatible with either inalienable or alienable possession since DP may merge with either PossP or *nP*. This prediction is corroborated by differences between Cochabamba Quechua *-yoq* and English *-ed*. Since *-yoq* can embed DPs, it is compatible with inalienable and alienable relations as shown in (11), while English *-ed* is only compatible with inalienable relations as shown in (12).

- (11) Cochabamba Quechua (Myler 2016: 365-366)
 a. Noqa [_{nP} yana chujcha-yoq] ka-ni
 I black hair-YOQ be-1SG
 ‘I have black hair’

- b. Mama-y pollera-yoq ka-sha-n, mana-taq pay-pata-chu
 mother-1POSS pollera-YOQ be-DUR-3SG, not-and s/he-GEN-NEG
 ‘My mother has a *pollera* (traditional skirt), but it’s not hers’

- (12) English
 a. I am green-eyed
 b. *I am old-phoned
 Intended: I have an old phone

One wrinkle in this proposal is that English *-ed* appears to be compatible only with the part-of inalienable relation but not with kinship terms (13a). Cochabamba Quechua *-yoq* is compatible with kinship relations as shown in (13b).

- (13) a. English (Myler 2016: 374)
 *a three-sistered boy
 Intended: a boy with three sisters
 b. Cochabamba Quechua (Myler 2016: 375)
 kinsa pana-s-ni-yoq wayna
 three sister-PL-EUPH-YOQ boy
 ‘a boy with three sisters’

In order to account for this, Myler (2016: 375-377) provides cross-linguistic evidence in favor of the generalization in (14).

- (14) In order for a kinship term to project a possessor argument, it must enter into a syntactic relationship with a D-head (Myler 2016: 375)

The generalization in (14) provides a structural account for why the difference between (13a) and (13b) is observed. Since, by hypothesis, a D head is present in (13b) but not in (13a), it is only in the former that a kinship term can license a possessor argument. This means that even though kinship relations are inalienable (and thus encoded within *nPs*), there must still be a D head present in order to formally license the possessor, which leads to the conclusion that a predicativizing head that selects for an *nP* complement will not permit kinship terms.

2.1.2 *N-i-A compounds as predicativized possession*

Before going into the details of the proposed analysis of *N-i-A* compounds, I provide some relevant background on the internal structure of words following work by Embick (2004, 2023) and Wood (2023). I assume that complex heads can be created directly through the operation MERGE and not only through head movement. When a categorizing head merges directly with a root, the result is a head of the relevant category as in (15).

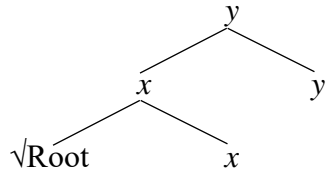
- (15)
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graph TD
 x[x] --- Root["√Root"]
 x --- x2[x]

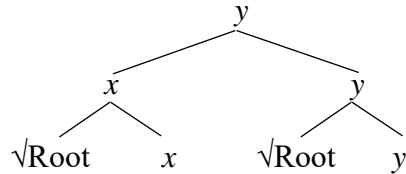
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Complex heads may also be formed by merging a categorizing head with a categorized root (a category changing structure) as in (16a) or by merging two already categorized heads (a compound) as in (16b).

(16) a. Category changing structure

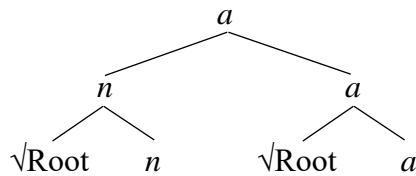


b. Compound



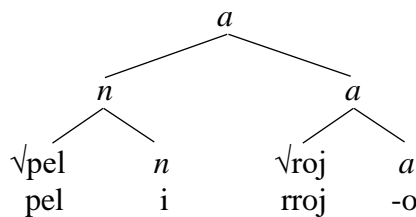
I propose that N-*i*-A compounds have the structure in (17).

(17) N-*i*-A compounds



(17) can account for some of the basic technical details required of any analysis of N-*i*-A compounds. First, the label correctly accounts for its distribution as an adjective. Second, the terminal *n* node can be posited to be the locus of the realization of the -*i* morpheme that always appears between nominal and adjectival root, and the terminal *a* node is where relevant theme vowels on adjectives that are sensitive to agreement are spelled out (see Kramer 2015 for details) as in (18).

(18) Vocabulary items that spell out terminal nodes in *pelirrojo*



While the *n* head associated with the root for the noun *pelo* ‘hair’ is usually spelled out as -o, the presence -i may be attributed to contextual allomorphy. When the relevant *n* head is sister to *a*, it is spelled out as the vowel -i.<sup>1</sup>

(19)  $n \leftrightarrow i / [ [ \_n ] a ]$

<sup>1</sup> This rule may apply more generally to any categorizing head that is sister to *a* in adjectival compound. For instance, there are also A-*i*-A compounds where the theme vowel slot of the leftmost adjective is always spelled out as *i*: *agridulce* ‘sweet-and-sour’, *rojiblanco* ‘red and white striped.’

Evidence for this kind of “small structure” (Embick 2023, Wood 2023), in which heads project as heads and not phrases, comes from the fact that nominal portion of N-*i*-A compounds cannot consist of anything more than a noun root and theme vowel. For instance, it is impossible to construct examples like those of the Quechuan languages described in the previous subsection in which a noun phrase with a quantifier or numeral is possessed by the adjectival head. Someone with a lot of red hair cannot be described as in (20).

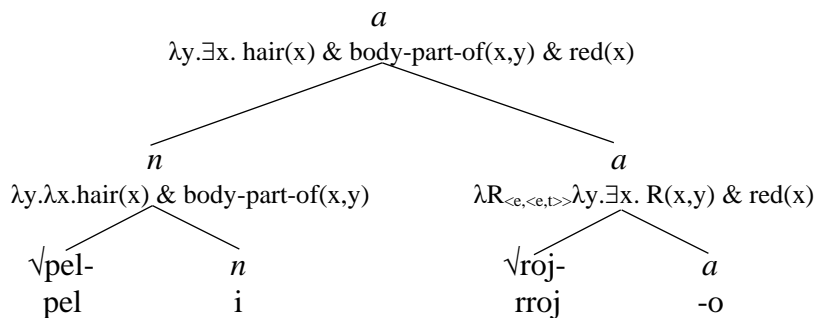
- (20) \*Juana es mucho pelirroja  
 Juana is a lot hair-i-red-F.SG  
 Intended: ‘Juana has a lot of red hair’

Beyond these details related to morphological structure, spell out and size, the most important question is how this structure may help us understand why N-*i*-A compounds are restricted to relations involving body parts. I claim that it is the semantics of adjectivizing head in N-*i*-A, combined with the structural constraints that its sister be maximally *n* that conspire to limit the possible types of *n* solely to inalienably possessed body part nouns. I propose that the complex *a* head is a property-denoting expression that takes a relation with an unsaturated possessor as its argument as outlined in (21).

- (21) Semantics of the complex *a* head in N-*i*-A compounds  
 $[[a]] = \lambda R_{\langle e, \langle e, t \rangle \rangle} \lambda y. \exists x. R(x, y) \ \& \ P(x)$

$P(x)$  represents the property described by the complex head that consists of the root and the adjectivizing head – it may be something like *red* or *long*. The first argument of this head must be a relation of type  $\langle e, \langle e, t \rangle \rangle$ , which maps a relation between two entities to truth values. One member of this relation, the possessee (the variable  $x$  in 21), is modified by the property expression  $P$  while the other member, the possessor (the variable  $y$  in 21) is unsaturated. This unsaturated entity is the second argument of the adjective and is saturated once the adjective combines with its subject in a predicative sentence or with an *nP* in an attributive construction. In (22), the relational argument is saturated by the complex *n* head *pel*. This yields a new complex head that takes an entity-denoting expression as its argument that is interpreted as the possessor of the relation.

- (22) pel-i-rroj-o  
 hair-i-red-M.SG  
 ‘red-haired’





Because *a* must take a relational argument, it will only be compatible with an *n* that is relational. By the hypothesis in (1), only inalienable relations can be introduced by *n*. Alienable relations are introduced higher in the structure by Poss. This leads to the prediction that only inalienable relations are possible arguments of the complex *a* head in N-*i*-A compounds. The same structural requirement also rules out kinship terms, due to the generalization in (14) above: kinship terms are inalienable relations that require a D head to formally license a possessor. Since the nominal component in N-*i*-A compounds is maximally *n*, the licensing requirement for kinship terms cannot be met. This leaves body part terms as the only kind of relation that could potentially serve as arguments of *a*: they are relations introduced by *n* and do not have any additional licensing requirements on the possessor within the extended *nP*. The possessor argument can be satisfied through “delayed gratification” (Myler 2016) upon merging a subject in a predicative sentence or modifying an *nP* in an attributive construction.

## 2.2 A de N constructions

A second type of adjectival construction that, in broad terms, has nearly identical restrictions as N-*i*-A compounds in terms of the kinds of possessive relations it is compatible with is shown in (23) (Español Echevarría 1997; Picallo & Rigau 1999; AALE y RAE 2009: 2757).

- (23) a. Él es [largo de cuello]  
           he is long.M.SG of neck  
           ‘He has a long neck’
- b. una persona [ancha de cara]  
           a person wide.F.SG of face  
           ‘a person with a wide face’

I label this construction *A de N*. The bracketed strings are adjectival phrases in which the adjective describes a property of the N following the preposition *de*. This N is interpreted as the possessee of a possessor argument that is either the subject of a predicative sentence (23a) or a modified noun in an attributive construction (23b). The adjective agrees in gender and number with the external possessor and not with the possessee noun following *de*. As is the case for N-*i*-A compounds, *A de N* constructions are not possible with kinship terms or alienably possessed nouns as shown in (24) and (25).

- (24) a. \*Él es alto de padre  
           he is tall of father  
           Intended: He has a tall father
- b. \*una persona simpática de hermano  
           a person nice of brother  
           Intended: a person with a nice brother
- (25) a. \*Él es nuevo de carro  
           he is new of car  
           Intended: ‘He has a new car’

- b. \*una persona grande de casa  
 a person big of house  
 Intended: ‘a person with a big house’

The body part term that follows *de* must be a bare noun – no determiners are possible as shown in (26).

- (26) a. \*Él es largo del cuello  
 he is long.M.SG of.the neck  
 ‘He has a long neck’  
 b. \*una persona ancha de la cara  
 a person wide.F.SG of the face  
 ‘a person with a wide face’

Plural body part nouns are possible, but these have special properties that distinguish from ordinary plural count nouns. First, there are plural body part nouns that are either obligatorily plural or do not have a plural meaning (*pluralia tanta*) as in (27). or parts that belong to a single possessor rather than multiple body parts distributed across different possessors. In (27a), the pluralized noun *espaldas* is used to refer to singular body part ‘back’ while in (27b) the noun *reflejos* ‘reflexes’ is obligatorily plural.

- (27) Spanish (Español Echevarría 1997: 224-226)  
 a. Juan es ancho de espaldas  
 Juan is wide of back.F.PL  
 ‘Juan has a wide/broad back’  
 b. Juan es rápido de reflejos  
 Juan is quick of reflexes  
 ‘Juan has quick reflexes’

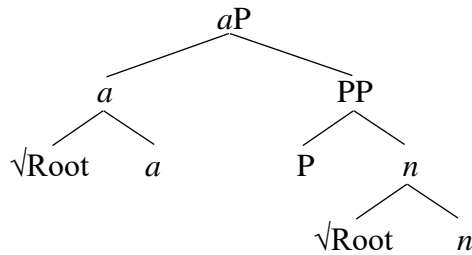
Second, some body part nouns that come in pairs may appear as plurals if the adjective that heads the *A de N* construction describes both of them as belonging to the same possessor as in (28a). Crucially, as observed in Español Echevarría (1997: 225), pluralized body parts or parts of wholes are ungrammatical if they are used in contexts where a single part is described by an adjective that is distributed across multiple possessors as in (28b).

- (28) Spanish (Español Echevarría 1997: 225-226)  
 a. Juan es largo de piernas  
 Juan is long of legs  
 ‘Juan has long legs’  
 b. Estas botellas son estrechas de {cuello/\*cuellos}  
 these bottles are narrow of neck.M.SG/neck.M.PL  
 ‘These bottles all have a narrow neck’

Even though *cuello* ‘neck’ refers to a plurality of things in (28b), it can only surface as a bare singular in the *A de N* construction. Español Echevarría (1997) suggests that this indicates that there is no Num projection in nominal component of *A de N* constructions, and opts to treat plural body part nouns as lexical plurals.

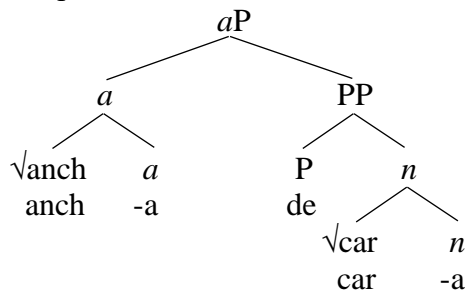
The key property that is shared between A de N and N-*i*-A compounds is that they both are headed by adjectives that modify a bare body part (or part of a whole) noun. The difference between the two is that in A de N constructions the bare body part noun is preceded by the preposition *de* and this PP serves as the complement to *a*, forming an *a*P as in (29).

(29) A de N constructions



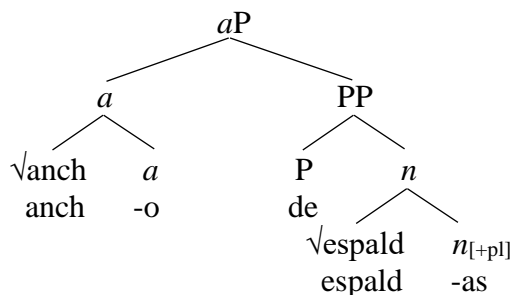
An example of how each of the terminal nodes in an A de N construction are spelled out is provided in (30) below. Note here that the terminal *n* node is not a sister to *a*, so the contextual allomorphy rule that applies in N-*i*-A compounds does not apply here and the normal theme vowel associated with the root in question is inserted.

(30) una persona [ancha de cara]  
 a person wide.F.SG of face  
 ‘a person with a wide face’



Following work by Acquaviva (2008), Alexiadou (2019) and Wood (2023), and maintaining Español Echevarría’s (1997) original insight, I claim that *pluralia tanta* and lexical plurals have a plural feature on *n* and lack any higher functional projections associated with number. Example (27a) above, would be spelled out as in (31).

(31) Juan es ancho de espaldas  
 Juan is wide of back.F.PL  
 ‘Juan has a wide/broad back’



Finally, I would like to point out that the preposition in A de N appears to be part of a wider class of prepositions in the language that take bare nominals or lexical plurals as complements. Such prepositions lack an inherent meaning and serve to create expressions that may serve as complements or adjuncts to nouns, adjectives or verbs as in (32).

- (32) a. una cita [a ciegos-as]  
 a date to blind-F.PL  
 ‘a blind date’  
 b. Estás [de jefe] hoy  
 be.PRS.2sg of boss today  
 ‘You are acting as boss today’  
 c. tomar una pastilla [en ayun-as]  
 take a pill in fast-F.PL  
 ‘take a pill without having eaten’

I will tentatively label this class of prepositions  $P_{bare}$  in order to indicate that they take a complement that is maximally of size  $n$ .

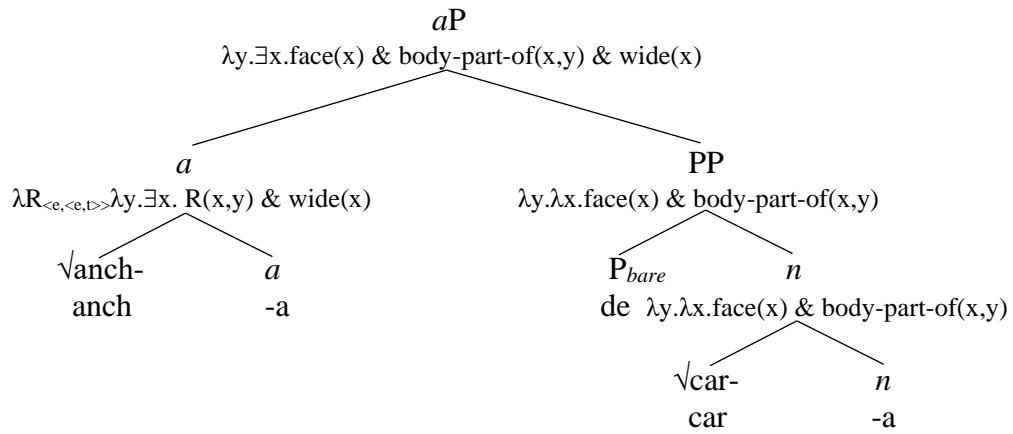
Turning now to the explanation as to why A de N constructions are limited to body part nouns, I propose that there are similar, though not identical, semantic and structural restrictions that conspire to limit possible nouns to body parts. The adjectival head that consists of the categorizer and root in A de N has the same semantics as that of the adjectival head in N-*i*-A compounds.<sup>2</sup>

- (33) Semantics of the adjectival head in A de N constructions  
 $[[a]] = \lambda R_{\langle e, \langle e, t \rangle \rangle} \lambda y. \exists x. R(x, y) \ \& \ P(x)$

$P(x)$  represents the property described by the complex head that consists of the root and the adjectivizing head – it may be something like *red* or *long*. The first argument of this head must be a relation of type  $\langle e, \langle e, t \rangle \rangle$ , which maps a relation between two entities to truth values. Unlike in N-*i*-A compounds, the relational argument in A de N constructions saturated by a PP. The PP, in turn, is headed by  $P_{bare}$ , which always has nominal complement of maximal size  $n$ . One member of the relation encoded by PP, the possessee (the variable  $x$  in 33), is modified by the property expression  $P$  while the other member, the possessor (the variable  $y$  in 33) is unsaturated. This unsaturated entity is the second argument of the adjective and is saturated once the adjective combines with its subject in a predicative sentence or with an  $nP$  in an attributive construction. An illustrative example is provided in (34).

- (34) una persona [ancha de cara]  
 a person wide.F.SG of face  
 ‘a person with a wide face’

<sup>2</sup> As discussed in Marqueta (2019: 11), there are certain combinations of adjective and body part noun that are possible in N-*i*-A compounds but not in A de N constructions, so they are not exact equivalents. I leave a detailed treatment of such restrictions for future work. What is most important for the present argument is to account for the fact that only inalienable part-of relations are possible in the A de N construction.



Note that in (34),  $P_{bare}$  does not provide any semantic input to the expression – it is an identity function that passes the meaning of  $n$  to the PP projection. From this position, the relation that originates in  $n$  may serve as the argument of  $a$ . Given this proposal, it is possible to account for the restrictions on A de N constructions in broadly the same way as N-*i*-A constructions. The primary reason they are restricted to inalienable possession with body part terms is due to a chain of semantic and syntactic selectional restrictions. The adjectival head requires a relational argument and this relational argument must, in turn, come from the complement of  $P_{bare}$ . Since this preposition must take an  $n$  complement, the possible relations that could serve as the argument of  $a$  are limited to those that can be encoded by  $n$ . This rules out alienable possession relations since Poss cannot be contained within  $n$ , and it also rules out kinship terms because the licensing D head that is required for formal reasons, per the generalization in (14) above, is also absent.

In this section we have seen that Spanish has an additional type of predicativized possession that has the same broad restrictions as can be observed for N-*i*-A compounds. Crucially, these A de N constructions have relational complements that are maximally of size  $n$ . If the generalizations about inalienable possession discussed in the introduction is on the right track, the lack of the Poss and D-layers should correlate with the lack of alienable possession and kinship terms, which is precisely what we observe. A de N constructions, thus, provide additional evidence in favor of the idea that inalienable possessive relations are encoded in a smaller syntactic structure than alienable ones.

### 2.3 External possession of internal verbal arguments

External possession of internal verbal arguments is extremely common across the Romance language family (Guéron 1985, 2003; Kempchinsky 1992; Vergnaud & Zubizarreta 1992; Demonte 1995; Landau 1999; Nakamoto 2010; Rodrigues 2010). External possession sentences consist of a DP in an internal argument position with an unexpressed possessor that is coreferential with another verbal dependent – usually a subject (35a) or an indirect object (35b).

- (35) a. Juan movió el pie  
           Juan moved the foot  
           ‘Juan moved his foot’

- b. Juan me tocó la espalda  
 Juan 1SG.DAT touched the back  
 ‘Juan touched my back’

The possessive relationships that can be expressed through external possession are almost always inalienable ones in which the possessee is a body part noun as shown in (35). These restrictions on external possession seem to question the structural generalization about external possessors and the size of the possessee. Unlike in *N-i-A* compounds and *A de N* constructions, we clearly have a *D* layer in (35). The prediction is that, because of this additional structure, both alienably possessed nouns and kinship terms should also participate in external possession. One piece of evidence that this prediction is actually correct is that the DPs in external possession constructions may be kinship terms or alienably possessed objects in a limited set of contexts as shown in (36).

- (36) a. Se me murió el abuelo materno  
 SE 1SG.DAT died the grandfather maternal  
 ‘My maternal grandfather died’  
 b. Juan nos rompió las macetas  
 Juan 1PL.DAT broke the flower pots  
 ‘Juan broke our flower pots’

The data in (36) corroborate the idea that the presence of a *D* layer should correlate with the possibility of having external possessors of kinship terms and alienably possessed nouns. The question then becomes why external possession constructions usually involve body parts. I claim that this has to do with two factors that are not related to the size of the internal argument possessee. First, the DP must be headed by a weak definite determiner (Vergnaud & Zubizarreta 1992; Guéron 2003).<sup>3</sup> Second, the external possessor must be affected by what happens to, or holds of, the possessee. A weak determiner may combine with either an *nP* or a *PossP*. This will permit both inalienable and alienable possessive relations to be expressed externally. What imposes limits on the potential inalienable and alienable possessive relations that can be expressed externally is affectedness. For the most part, a possessor is directly affected by something that happens to, or holds of, a part of their body. This is why body parts nouns are the most frequent ones to be externally possessed. However, there are contexts in which a possessor may be affected by what happens to a relative or even an object they own as shown in (36) (see Landau 1999; Cuervo 2003 and Deal 2017 for more detailed information on affectedness in external possession constructions).

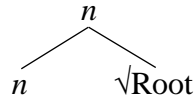
## 2.4 Summary

In this section, I have presented three different kinds of constructions from Spanish in which an external possessor is linked to a possessee. The amount of structure in the possessee nouns determines which kinds of possessive relations are permitted in these

<sup>3</sup> Weak determiners have received different treatments in the literature. They are *D* heads in Vergnaud & Zubizarreta (1992), classifiers in Guéron (2003) and agreement projections in Ticio (2005). These differences do not matter for the point I make here so long as the functional head where the article is generated is above *PossP*.

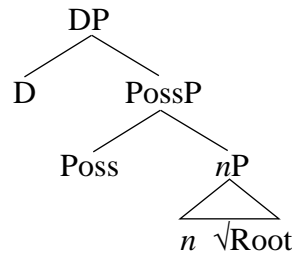
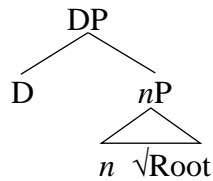
external possession constructions. If an *n* is selected as the possessee, only inalienable part-of relations are permitted. If a DP is selected as the possessee, both inalienable and alienable relations are permitted.

- (37) Only inalienable part-of relations (N-i-A compounds, A de N constructions)



- (38) Inalienable or alienable possession permitted (internal verbal argument DPs)<sup>4</sup>

- a. Inalienable part/kin possession      b. Alienable possession



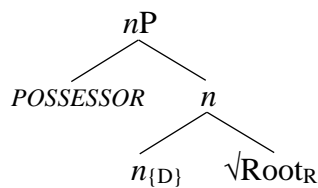
Spanish external possession, consequently, provides a clear argument in favor of the structural distinction between inalienable and alienable possession. What this data does not weigh in on is whether inalienable relations are part of individual roots or whether they are introduced by specific nominalizing heads like *n*<sub>part-of</sub> or *n*<sub>kin-of</sub>. The semantic contribution of roots vs. nominalizing heads is the topic of the next section.

### 3. Attributive possession in Mayan: exploring the contentful versus underspecified views of roots

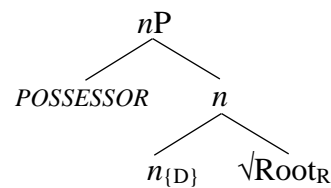
The structure proposed for inalienably possessed nouns in the previous sections is compatible with two different ways of distributing the relational meaning among their component parts. The meanings could be attributed to the roots themselves, in which case we would have relational roots (marked as R below) and the role of the nominalizing head is to merely introduce a syntactic argument (e.g. – it is specified with a {D} feature). This is the *contentful roots view* of relational meaning.

<sup>4</sup> I have represented the lower nominal projection as phrasal here in order to capture the fact that in external possession constructions that have DP possessee, the possessee noun permits modifiers and numerals (see 36), unlike in N-*i*-A compounds and A de N constructions.

## (39) a. Part-of relations

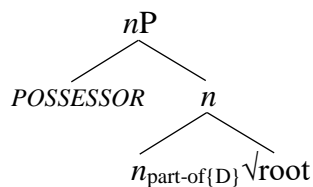


## b. Kin-of relations

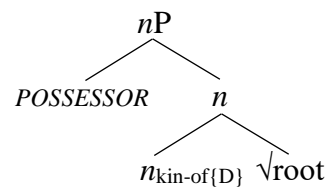


On the other hand, we might sever relational meanings from individual roots and attribute those to the nominalizing heads. On this view, there are different flavors of nominalizing heads that introduce different kinds of inalienable relations. Here, the possessor arguments are licensed semantically and syntactically by a nominalizing head. This is the *underspecified roots view* of relational meaning.

## (40) a. Part-of relations



## b. Kin-of relations



In what follows, I explore these two approaches to the distribution of inalienable relational meanings using data from Mayan languages. I suggest that certain properties of possessive morphology and inalienable relations are more aptly analyzed in the underspecified view of roots while other aspects of the data are amenable to an analysis on the underspecified view of roots but can just as easily be handled on the contentful view of roots. Thus, the overall objective of this section is to highlight which kinds of data can be used to further explore the topic of the distribution of relational meanings in inalienably possessed nouns.

The Mayan language family consists of approximately 30 languages spoken by around 6 million people in Guatemala and regions of southern Mexico, Belize and Honduras (Bennett et. al. 2016; Aissen et. al. 2017 for recent overviews). Myler (2018) outlines a proposal for the underspecified view of roots based on data from the Mayan language Tz’utujil (Dayley 1985). I extend the arguments he makes taking data from a range of Mayan languages and highlight some data that pose some difficult difficulties for this view. Before pointing delving into the details of attributive possession in Mayan languages, I will provide a brief background of how attributive possession works in the language family and present a working proposal for how to capture its core properties.

Possessors are indexed with a morpheme that appears before the possessee. It is called a bound *set A* pronoun in Mayanist literature and glossed below as *A* along with person and number features. There is phonologically conditioned allomorphy of set *A* morphemes across the entire language family. Distinct sets of set *A* morphemes are realized before consonant and vowel-initial possesseees as shown in (41).

## (41) Tseltal (Polian 2013: 408)

## a. s-machit

A3SG-machete

‘his/her machete’



- b. y-akan  
 A3SG-foot  
 ‘his/her foot’

Third person full nominal possessors, when present, follow the possessee and are indexed with a 3<sup>rd</sup> person singular set A morpheme as shown in (42).

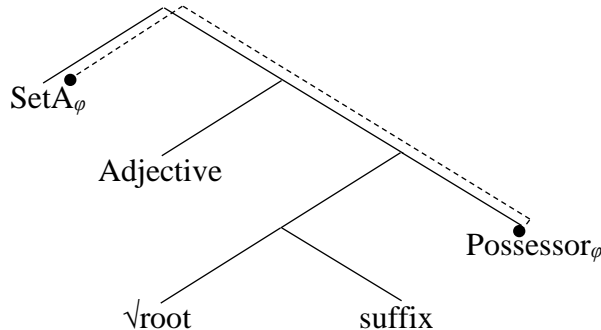
- (42) Popti’ (Ross Montejo & Delgado Rojas 2000: 162)  
 s-mi’ naj tzeh  
 A3SG-mother CL.M young man  
 ‘the young man’s mother’

Finally, while set A morphemes are often graphically represented as nominal prefixes in modern orthography, they may be separated from the possessee with modifiers like adjectives.

- (43) Popti’ (Ross Montejo & Delgado Rojas 2000: 162)  
 hin k’ej boq’wi’  
 A1SG black hat  
 ‘my black hat’

In what follows, I will assume that possessors are introduced either as null pronouns or full nominal arguments in a position that follows the possessee and that set A morphemes are realized as agreement heads in a higher position.

- (44) Schematic representation of possession in Mayan languages



### 3.1 “Part-of” relations in Mayan languages and “vowel+I” suffixes

One of the most studied cases of inalienable possession is the part-whole relation that holds between a part of the body and a human/animal possessor or a part of an inanimate object. Within the Mayan language family, body part nouns can be formally divided into two groups based on how they are marked in and out of possessive contexts. Group 1 consists of body part nouns that are marked with a suffix that contains a vowel + I (abbreviated -*VI* in the Mayanist literature) when possessed and unmarked when not possessed. This group varies slightly throughout the language family, but generally consists of the equivalents of the following nouns: *blood*, *hair*, *bone*, *flesh* and *skin/hide* (see Mora-Marín 2021a,b for extensive discussion and list of examples of this particular group of nouns throughout the entire language family). Some representative examples are shown in (45) and (46).

- 
- (45) Chuj (Buenrostro 1996: 45)
- a. in-chik-**il** possessed (as a body part) – suffix  
 A1sg-blood-POSS  
 ‘my blood (in body)’
- b. chik not possessed – no suffix  
 blood  
 ‘blood’
- (46) K’iche’ (Larsen 1988: 110)
- a. nu-tz’u’m-**aal** possessed (as a body part) – suffix  
 A1sg-skin-POSS  
 ‘my skin (on body)’
- b. tz’u’m not possessed – no suffix  
 skin/hide  
 ‘skin/hide’

The point raised by this data that I would like to emphasize, following Adger (2013) and Myler (2018), is that an analysis whereby the part-of relation is not an inherent component of the meaning of roots appears to be simpler than one that posits part-of relations to be inherent to roots. The primary reason has to do with the connection between overt morphological marking, the *-VI* suffix, and the addition of a part-of relation. The roots *chik* ‘blood’ in (45) and *tz’u’m* ‘skin/hide’ in (46) can be treated as simple property-denoting expressions while the suffixes *-il* in (45) and *-aal* in (46) can be taken to introduce the part of relational meaning that requires a possessor argument. On the other hand, if we were to treat relational part-of meanings as inherent to the roots, we would have to explain why such a meaning seems to be absent when the root is used as an unmarked noun. It is possible to say that the suffixes in (45) and (46) are purely syntactic in nature and simply mark the presence of a syntactic possessor, but this seems to miss the clear connection between relational meaning and the suffix.

There are two additional properties of *-VI* suffixes that can be more easily explained if these suffixes are treated as nominalizers that introduce relational part-of meanings rather than encoding relational meanings in roots themselves. First, many nouns may take syntactic possessors with or without *-VI* suffixes. The presence of the *-VI* correlates with a part-of reading while its absence correlates with an ownership reading. Consider the pairs of examples in (47) – (49).

- (47) Tz’utuujil (Dayley 1985: 147)
- a. nuu-muuj  
 A1SG-shade  
 ‘my shade’ (of a tree I’m sitting under)
- b. n-muuj-**aal**  
 A1SG-shadow-POSS  
 ‘my shadow’ (extension of my body)
- (48) Yucatec Maya (Bricker et. al. 1998: 174-175)
- a. in luuk’  
 A1SG mud  
 ‘my mud’ (for building a wall)

- b. in luuk'-**el**  
 A1SG mud-POSS  
 'my mud' (dust mixed with sweat on body)

(49) Tseltal (Polian 2013: 432)

- a. s-mis  
 A3sg-cat  
 'his/her cat'  
 b. s-mis-**ul**  
 A3sg-cat-POSS  
 'his/her biceps' (metaphorical interpretation)

These examples show that *-Vl* suffixes can “coerce” the meanings of nouns that are otherwise not relational into ones that encode part-of relations. These observations can be easily accounted for if the part-of relation is introduced by the *-Vl* suffix rather than in roots. A second property of *-Vl* suffixes appears to indicate that they are nominalizers more generally (Dayley 1985; Myler 2018, in prep; Mora-Marín 2021a). Throughout the entire language family, *-Vl* suffixes also appear on abstract nouns formed from a variety of roots as shown in (50) and (51).

(50) Tz'utujil (Dayley 1985: 150, cited in Myler 2018: 10)

- a. r-chee'-**aal**  
 A3sg-wood/tree-NMLZ  
 'its woodness/treeness'  
 b. r-winaq-**il**  
 A3sg-human-NMLZ  
 'its humanness'

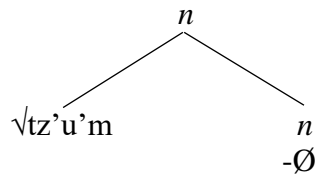
(51) Popti' (Ross Montejo & Delgado Rojas 2007: 23-24)

- a. s-k'ah-**il**  
 A3sg-bitter-NMLZ  
 'its bitterness'  
 b. s-k'olan-**il**  
 A3sg-round-NMLZ  
 'its roundness'  
 c. s-chi'-**al**  
 A3sg-sweet-NMLZ  
 'its sweetness'  
 d. s-nahat-**il**  
 A3sg-far.away-NMLZ  
 'its distance from'  
 e. s-mal-**il**  
 A3sg-measure-NMLZ  
 'its size'

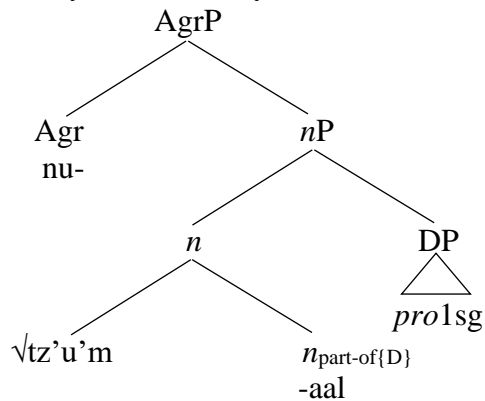
To sum up, the simplest analysis of *-Vl* suffixes across the Mayan language family is to treat them as nominalizing heads that may introduce part-of relations. The individual roots that combine with *-Vl* suffixes do not otherwise have part-of relational meanings. A sketch of this analysis on the underspecified view of roots is given below. The K'iche' examples from (46) are repeated below as (52).

## (52) K'iche' (Larsen 1988: 110)

- a. *tz'u'm*  
 skin/hide  
 'skin/hide'



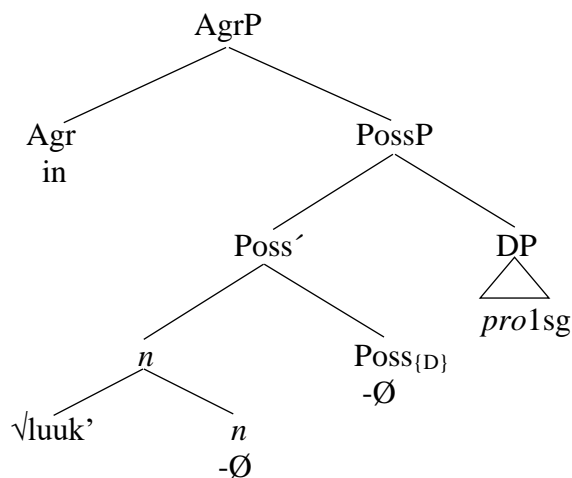
- b. *nu-tz'u'm-aal*  
 A1sg-skin-POSS  
 'my skin (on body)'



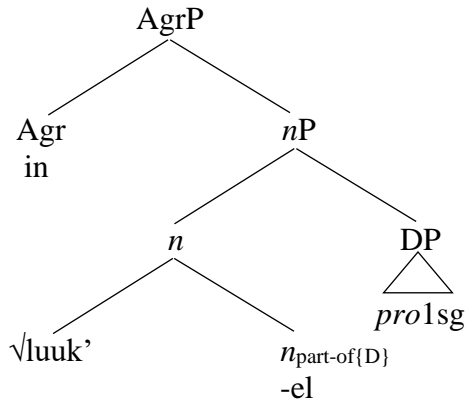
The root *tz'u'm* does not encode an inherent relation and when nominalized by a plain, unmarked *n* gives rise to a sortal noun (52a). On the other hand, when it is nominalized by an *n* head that is spelled out as a *-VI* suffix (*-aal*), it gives rise to a relational noun that takes a possessor argument. Finally, consider the Yucatec Maya examples in (48), repeated in (53) below.

## (53) Yucatec Maya (Bricker et. al. 1998: 174-175)

- a. *in luuk'*  
 A1SG mud  
 'my mud' (for building a wall)



- b. in luuk'-el  
 A1SG mud-POSS  
 'my mud' (dust mixed with sweat on body)



Here, the same root  $\sqrt{luuk}$  'mud' is in a different kind of possessive relation with the possessor. In (53a), it is nominalized by a plain  $n$  and a Poss head introduces an alienable relation of ownership. Both these heads are null. In (53b) the same root is nominalized by a relational part-of  $n$  that introduces a possessor of a body part. This relational  $n$  head is spelled out as the  $-VI$  (-el) suffix.

### 3.2 Unpossessive morphology in body part nouns

Most body part nouns in Mayan languages are unmarked when possessed as a part-of relation and thus do not fall into the group that is marked with the  $-VI$  suffix. Mayan languages can be divided into groups depending on how this class of body part nouns are treated outside of possessive contexts. Some languages, like Tseltal have unpossessive suffixes that appear when such body part nouns lack a possessor (54a), while others like Yucatec Maya do not mark such body part nouns in or out of possessive contexts (55).

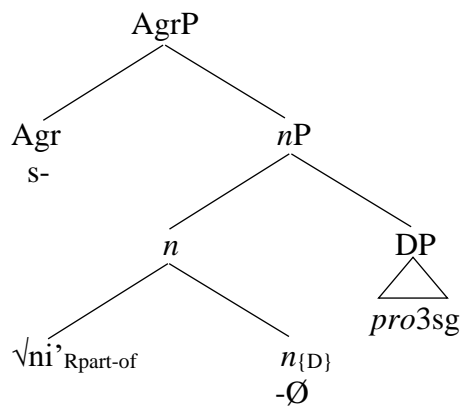
- (54) Tseltal (Polian 2013: 423)
- |                |                                        |
|----------------|----------------------------------------|
| a. s-ni'       | possessed (as a body part) – no suffix |
| A3SG-nose      |                                        |
| 'his/her nose' |                                        |
| b. ni'-il      | not possessed – suffix                 |
| nose-UNPOSS    |                                        |
| 'nose'         |                                        |
- (55) Yucatec Maya (Lehmann 2002: 77)
- |               |                                        |
|---------------|----------------------------------------|
| a. in koj     | possessed (as a body part) – no suffix |
| A1SG tooth    |                                        |
| 'my tooth'    |                                        |
| b. le koj=o'  | not possessed – no suffix              |
| DET tooth=DET |                                        |
| 'the tooth'   |                                        |

I will focus primarily on the data in (54) as it is the most interesting for discussing the distribution of relational meanings. The pair of examples in (54) appear

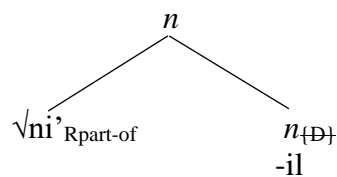
to pull us in the opposite direction of the data analyzed in subsection 3.1. Unpossessive morphemes surface with a semantically coherent class of roots that are normally possessed (see Nichols 1988, 1992 for typological generalizations). A simple analysis of this pattern would be claim that the roots in question encode a possessive relation inherently and that the presence of the unpossessive suffix may bind or prevent the merge of the possessor argument that is licensed inherently by the root, much like a passive morpheme prevents the merge of the external argument normally licensed by a transitive verb (see Barker 1995, 2011 for a proposal in which an operator *Ex* may bind the inherent possessor argument of a relational noun). One possible way of doing this is outlined in (56). The proposal here is that unpossessive suffixes nominalize relational roots and eliminate the {D} feature on *n* that normally requires a syntactic possessor.

(56) Tseltal (Polian 2013: 423)

- a. s-ni'  
A3SG-nose  
'his/her nose'



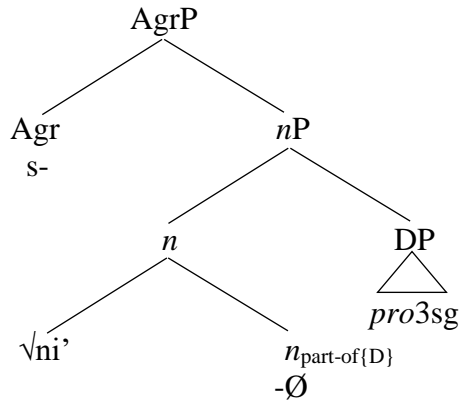
- b. ni'-il  
nose-UNPOSS  
'nose'



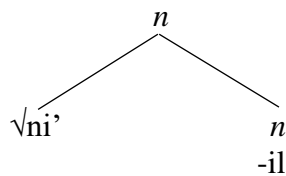
The prediction is that unpossessed body parts are interpreted as having some unspecified possessor that is not syntactically expressed. The same data could also be analyzed on the underspecified view of roots. On this analysis, sketched out in (57), the part-of relation is introduced on *n* that has no overt morphology while the unpossessive suffix spells out a plain *n* in the context of a certain set of roots such as  $\sqrt{ni}$  'nose.'

(57) Tseltal (Polian 2013: 423)

- a. s-ni'  
A3SG-nose  
'his/her nose'



- b. ni'-il  
nose-UNPOSS  
'nose'



On the underspecified view of roots, we should not be able to detect an implicit possessor in unpossessed form since there is no relational meaning encoded in the structure at all.

In absence of further data to evaluate these two possible analyses, it seems that the contentful view of roots provides an intuitively more appealing way of analyzing data like (54). This is because it attaches a clear meaning to unpossessive morphology that explains why it appears precisely with the set of roots it does: its function is to bind or prevent the merge of a possessor argument that is semantically licensed by the roots it composes with. On the other hand, it is entirely possible that the underspecified view of roots is correct. Two avenues of future research may be helpful in distinguishing between the two analyses. The first one would involve contexts in which unpossessed body part nouns can be definitively shown to lack an implicit possessor. For instance, Adger (2013: 67) suggests that the English examples in (58) do not clearly that entail the presence of an implicit possessor.

- (58) a. On each spike on the castle ramparts there was displayed a **head**.  
b. It had the same contours as a **hand**.

That said, the evaluation of the presence or absence of an implicit possessor with body part nouns like *head* and *hand* seems rather impressionistic. It is still possible to think of the *head* in (58a) and the *hand* in (58b) as belonging to a body in some sense. If a more robust and precise way of identifying the presence versus absence of implicit possessors can be devised, we might test this on unpossessed forms of body part nouns in Mayan languages. The second avenue would involve looking in to the details of the distribution of unpossessive suffixes across the entire Mayan language family. On the contentful roots view there is a clear semantic motivation for unpossessive suffixes to appear precisely with a set of roots that are inherently relational. On the underspecified roots view, there seems to be room for arbitrary

distributions of unpossessive suffixes since one has to specify that these appear with a list of roots when they are nominalized by a plain, non-relational *n*. There is some preliminary evidence of somewhat arbitrary distributions of unpossessive suffixes in some Mayan languages.

- (59) Tseltal (Polian 2013)
- a. ts'anjol-**il**  
pillow-UNPOSS  
'pillow'
  - b. lot-**il**  
lie-UNPOSS  
'lie'
  - c. jach'ub-**il**  
comb-UNPOSS  
'comb'
  - d. bolmal-**il**  
merchandise-UNPOSS  
'merchandise'

- (60) Q'anjob'al
- a. tx'otx'-**ej**  
dirt-UNPOSS  
'dirt/earth'
  - b. txat-**ej**  
bed-UNPOSS  
'bed'
  - c. chem-**ej**  
chair-UNPOSS  
'chair'
  - d. kaw-**ej**  
masa-UNPOSS  
'masa/corn dough'

If unpossessive suffixes are allomorphs of plain *n* that appear with a list of roots, we might expect to see more examples like those of (59) and (60), which do not describe body part nouns. These lists, however, are quite limited and a more systematic investigation into them is necessary in order to see if they are truly arbitrary or if they may have properties associated with inalienably possessed body part nouns in different Mayan languages.

### 3.3 Kinship terms in Mayan languages

Kinship terms are the other most widely studied class of inalienably possessed nouns. Within the Mayan language family, there are two main morphological patterns reported for kinship in and out of possessive contexts. Pattern 1 is shown in (61). Here, kinship terms are unmarked when possessed and marked with an unpossessive suffix when not possessed (see Mora-Marín 2021a: 385-394).



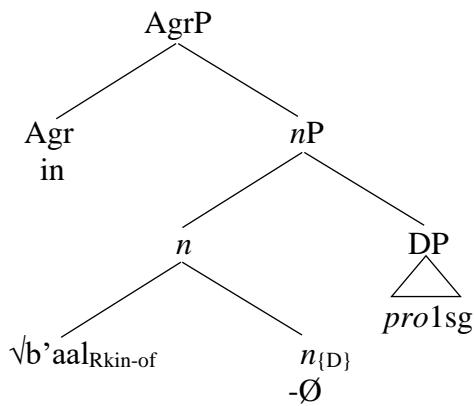
- (61) Chajul Ixil (Adell 2019: 371)  
 a. in b'aal  
 A1sg father  
 'my father'  
 b. u b'aal-aj  
 DEF father-UNPOSS  
 'the father'

The other pattern is shown in (62). Here, a kinship term may appear unmarked with or without a possessor.

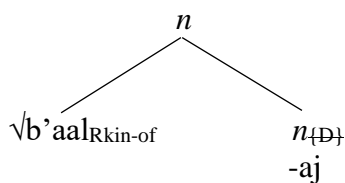
- (62) Poqomchi' (Brown 1979: 58)  
 a. ni-k'een  
 A1sg-grandmother  
 'my grandmother'  
 b. k'een  
 grandmother  
 'a grandmother'

These two patterns mimic those of body part nouns described in subsection 3.2. As discussed above, the first pattern is the most interesting and it appears to suggest that kinship terms have inherently relational meanings, as they exhibit the expected typological characteristics of unmarked inalienable possession and marked when not possessed (Nichols 1988, 1992). A potential analysis of the Chajul Ixil examples in (61) above, based on the contentful view of roots, is sketched out in (63).

- (63) Chajul Ixil (Adell 2019: 371)  
 a. in b'aal  
 A1sg father  
 'my father'



- b. u b'aal-aj  
 DEF father-UNPOSS  
 'the father'

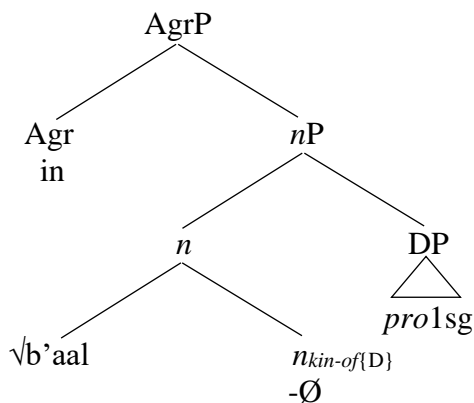


The unpossessive suffixes that appear with kinship terms could be treated as morphological realizations of a nominalizing head that eliminate the syntactic {D} feature that normally requires the merge of a possessor argument. However, since roots encode relational meaning on this view, there should be an implicit possessor argument: (63b) means ‘the father of someone.’

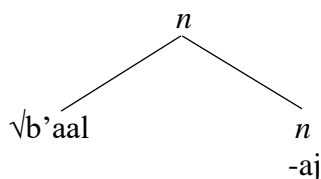
Alternatively, the underspecified view of roots would claim that the relation *kin-of*, perhaps with more specific relations such as *parent-of*, *sibling-of*, *etc.* should be severed from individual roots and used to derive a class of nouns that encode this relation. This potential analysis is sketched out for some Chajul Ixil examples in (61) below in (64).

(64) Chajul Ixil (Adell 2019: 371)

a. in b'aal  
A1sg father  
‘my father’



b. u b'aal-aj  
DEF father-UNPOSS  
‘the father’



As discussed in the similar proposal outlined for body part nouns in subsection 3.2, the underspecified roots view predicts that unpossessed kinship nouns should not have implicit possessors since the roots lack inherent relational meanings and they are nominalized by a plain *n*. A proper evaluation of each proposal will require contexts in which one may arrive at a precise answer regarding the presence or absence of an implicit possessor in unpossessed forms. Some potentially interesting facts that may support the underspecified roots view come from special meanings attached to unpossessed kinship terms like those illustrated in the Tselal examples in (65).

- (65) Tseltal (Polian 2013: 426-427)
- a. *tat-il*  
father-UNPOSS  
'sir' (lit. father)
  - b. *me'-el*  
mother-UNPOSS  
'madam' (lit. mother)

The unpossessed forms of *tat* 'father' and *me'* 'mother' are used as respectful forms of address for elders regardless of whether the person is someone's father or mother. More data of this particular type could be used in support of the idea that kinship relations are not encoded in individual roots but rather depend on the nominalizing context. On the other hand, the question regarding why unpossessive suffixes cluster precisely around kinship and certain body part terms is an important phenomenon that has a relatively simple explanation if body part and kinship terms are treated as a semantically coherent root class that encodes relational meanings, but is treated somewhat arbitrarily on the underspecified roots view.

### 3.4 Summary

In this section I have used data from Mayan languages to compare and contrast two different views of where inalienable relations such as *part-of* and *kin-of* are introduced in possessed nominals. The Mayan language family contains an extremely rich data set that does not clearly support the underspecified or contentful roots view of inalienable possessive relations. Rather, a subset of the data can be analyzed in a very simple way if part-of relations are encoded on *n*, whereas another subset of the data, while possible to analyze in the underspecified view of roots, appears to have a simpler analysis if part-of relations and kin-of relations are encoded in roots themselves. I outlined a few avenues of future research that might help us decide which of these competing analyses is better supported by the data from Mayan languages.

### 4. Conclusions

In this paper I have made two points regarding possessive noun classes. The first is that inalienable possession relations are structurally smaller than alienable ones in that the former require an extra piece of structure – a Poss head – to introduce a possessive relation. I did this by examining the constraints on different types of external possession in Spanish, showing that when a possessee with an external possessor is bare noun, the relation between possessee and possessor must be one of inalienable part-whole. If there is a determiner layer in the structure of externally possessed possessee, any kind of possessive relation is possible. This is because a D layer can embed a Poss head and formally license the possessor of a kinship term.

I then explored the question of where inalienable relational meanings are introduced within the *nP*: as an inherent part of the root or as part of the nominalizing head. I used data from Mayan languages to show that different patterns in morphological marking and corresponding meanings seem to pull us in different directions. Some data appear to lend clear support to the idea that relational meanings are introduced structurally on nominalizing heads (Myler 2018) while other data seem

to have a simpler analysis if relational meanings are encoded in roots themselves (Myler 2016).

The Spanish data used to argue in favor of the first point are yet another example in a long list of empirical phenomenon that support the idea the inalienable possession is introduced in a position closer to the root than alienable possession (Español Echevarría 1997; Alexiadou 2003; Myler 2016; Adamson 2024). The second point is still a somewhat controversial issue in non-lexicalist approaches to grammar. An appealing characteristic of non-lexicalist theories like DM is the parsimonious account it offers for the contextual flexibility in the form and meaning of roots. Rather than listing phonological, syntactic and semantic idiosyncrasies in lexical entries that impose restrictions on syntactic structures, roots are treated as underspecified grammatical primitives that can, in principle, freely appear in a multitude of different structural environments. Many (perhaps all) of their formal and interpretative properties are derived by formal (spell-out) instructions at the PF interface and interpretative instructions at the LF interface that link roots in particular structural environments to interpretations (Harley 2014 and references therein). Treating roots as radically underspecified grammatical primitives provides a neat way of accounting for families of words derived from the same root, which may or may not have a common conceptual core. Some data from Mayan languages appear to support severing inalienable relations from roots themselves (see Myler 2018, in preparation for a detailed analysis in this vein of Tz’utujil).

However, there are roots that appear in a limited set of words and/or have rather specific meanings and/or syntactic requirements. One idea that has been proposed in various guises in the DM literature is that at least some roots may have syntactic or semantic content that imposes restrictions on their potential structural environments (Levinson 2014; Myler 2016; Alexiadou & Londahl 2017; Coon 2019). Some data from attributive possession constructions in Mayan languages appears to have simpler analysis on this contentful view of roots.

Further scrutiny will hopefully reveal whether a uniform analysis that severs all meaning and grammatical information from roots themselves could be applied to and convincingly argued for in the Mayan languages, which could potentially be extended to other languages that lack the intricate possessive morpho-semantic interactions of this language family (see Harley 2014; Panagiotidis & Nóbrega 2022, and references therein for a detailed overview of the controversies regarding content of roots).

### Abbreviations used

|      |                             |
|------|-----------------------------|
| 1    | 1 <sup>st</sup> person      |
| 2    | 2 <sup>nd</sup> person      |
| 3    | 3 <sup>rd</sup> person      |
| A    | set A bound pronoun (Mayan) |
| DAT  | dative                      |
| EUPH | euphonic suffix (Quechuan)  |
| F    | feminine                    |
| M    | masculine                   |
| PL   | plural                      |
| PRS  | present tense               |
| POSS | possessive suffix           |
| SG   | singular                    |

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UNPOSS    unpossessive suffix

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