

Plural Possession in Turkish and Sakha

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Abstract. This paper examines the morphological interaction of possessor agreement and the number of the possessor and possessed noun in Turkish and Sakha, two distantly related Turkic languages. Of particular focus are third-person possessors, where both languages can use the regular nominal plural suffix *-LAR* to index 3PL possessors, and (similar to many Turkic languages) do not allow two instances of *-LAR* in sequence, resulting in a three-way ambiguity, e.g. Sakha *at-tar-i* [horse-PL-3.POSS] a. ‘his/her horses,’ b. ‘their horse,’ c. ‘their horses.’ In Turkish, this ambiguity obtains only with *pro*-dropped possessors, as overt third-plural possessors do not index plurality on singular nouns, whereas in Sakha 3PL agreement is obligatory. It is argued that in Sakha, 3PL possession is true agreement, whereas in Turkish the pattern that obtains under *pro*-drop is a result of the possessor’s PL feature lowering onto the possessed noun. Further, we examine the nature of the **-lar-lar* haplology (i.e. the fact that a 3PL-possessing-PL cannot be marked with *-lar* twice: e.g. Sakha **at-tar-dar-a* [horse-PL-PL-3P] ‘their horses,’ contending that it is a particular property of the exponent *-lar* which occurs during Vocabulary-Insertion.

Keywords. Possessor agreement; plural possessors; third-person possession; haplology; Turkish language; Sakha language; Yakut language

1. Introduction. This paper examines the morphological realization of grammatical person and number in possessor agreement suffixes in Turkish and Sakha (Yakut), two distantly related Turkic languages. In particular, we focus on two main puzzles of third-person possessors in these languages. The first puzzle concerns the following pattern, where both languages display a three-way ambiguity between singular-possessing-plural (1a), plural-possessing-singular (1b), and plural-possessing-plural (1c) readings:¹

- (1) çocuk-lar-ı (Turkish) / оҕо-lor-o (Sakha)
 child-PL-3P / child-PL-3P
 a. ‘his/her children’ b. ‘their child’ c. ‘their children’

The ambiguity in (1) is fully resolved with the aid of overt possessors in Turkish as illustrated in (2). This is because *-LAR* can only mark the plurality of possessed noun (or ‘possessum’) (2a, 2c), but not plurality of possessor for a singular possessum (2b):

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¹ We follow Leipzig glossing conventions with the exception of possessor agreement morphemes, which we gloss as: 1SP=1SG possessor, 1PP=1PL possessor, 2SP=2SG possessor, 2PP=2PL possessor, 3P=third-person possessor. We use a broadly Turkological romanization for Sakha (e.g. <i>=[i]). Doubled Sakha vowels indicate length.

- (2) a. on-un çocuk-lar-1 b. onlar-in çocuğ-u c. onlar-in çocuk-lar-1
 3-GEN child-PL-3P they-GEN child-3P they-GEN child-PL-3P
 ‘his/her children’ ‘their child’ ‘their children’

However, only two of these three readings can be disambiguated through overt possessors in Sakha. This is because, unlike most other Turkic languages, possessed nouns always agree in number with 3PL possessors (Johanson 2021: 801, Stachowski & Menz 1998: 422, Vinokurova 2005: 133, Krueger 1962: 97-8). Thus, while the singular-possessing-plural reading can be disambiguated (3a), the other two readings remain ambiguous (3c):

- (3) a. kini oγo-lor-o b. *kiniler oγo-to c. kiniler oγo-lor-o
 he/she child-PL-3P they child-3P they child-PL-3P
 ‘his/her children’ ‘his/her child’ (i) ‘their child’
 (ii) ‘their children’

The second puzzle concerns the plural-possessing-plural reading (1c). Consistent with a common pattern among Turkic languages (Johanson 2021: 459), the plural morpheme *-lar* cannot appear in sequence *-lar-lar* where one *-lar* indexes plurality of the possessum, the other plurality of the possessor:

- (4) *çocuk-lar-lar-1 (Turkish) / *oγo-lor-dor-o (Sakha)
 child-PL-PL-3P / child-PL-PL-3P
 int. ‘their children’

This pattern we refer to as **-lar-lar*. Given that the possessum obligatorily agrees with a 3PL possessor in Sakha, why is it that we observe the same **-lar-lar* haplology as Turkish?

The structure of this paper is as follows. §2 presents the inventory of possessive suffixes in Turkish and Sakha. §3 discusses the Turkish pattern in depth and proposes a *Lowering* based analysis where third-person pronouns are considered to have a different structure than the non-third pronouns, following Déchaine & Wiltschko (2002). §4 investigates the Sakha pattern by illustrating the instances of haplology in the light of the irregular plural forms in this language. Moreover, this section accounts for the <PL,PL> **-lar-lar* in Turkish and Sakha by proposing vocabulary insertion level dissimilation following Nevins (2012). §5 concludes the paper and raises further questions for future studies.

2. Possessor agreement in Turkish and Sakha. Possessor agreement refers to inflectional morphology on a possessum indexed to *phi*-features of its possessor (Szabolcsi 1981; Dékány 2011; Myler 2016). Possessor agreement is obligatory for nouns possessed by first- and second-person pronouns in both Turkish (5a)² and Sakha (5b), while the possessive pronoun is optional.³

- (5) a. (benim) kedi-*(m) (bizim) kedi-*(miz) (senin) kedi-*(n) (sizin) kedi-*(niz)
 (my) cat-(1SP) (our) cat-(1PP) (your) cat-(2SP) (your) cat-(2PP)
 ‘my cat’ ‘our cat’ ‘your cat’ ‘y’all’s cat’

² While certain possessive constructions in Turkish allow the possessive-inflection to be omitted (see Öztürk & Taylan 2016), we do not consider these instances in the scope of this paper, as our main concern is the realization of possessor agreement *vis-à-vis* number of the possessor and possessed noun.

³ Note that Sakha lacks an overt genitive case morpheme (Vinokurova 2005; Baker & Vinokurova 2010), with unmarked/nominative forms serving the role of genitive (ia). There is however, a morpheme *-(t)In* which interestingly appears on possessed-possessors (ib):

- b. (min) oγo-*(m) (bihigi) oγo-*(but) (en) oγo-*(η) (ehigi) oγo-*(γut)
 (I) kid-(1SP) (we) kid-(1PP) (you) kid-(2SP) (you) kid-(1PP)
 ‘my child’ ‘our child’ ‘your child’ ‘y’all’s child’

As illustrated in (5a) and (5b), nouns possessed by a first- or second-person pronoun agree in person (*-(I)m* for first person, *-(I)n* for second person in Turkish; *-(I)m* ~ *-BI* for first person, *-(I)η* ~ *-GI* for second person in Sakha) and number (Turkish *-∅* SG, *-Iz* PL; Sakha *-∅* SG, *-t* PL).⁴

The more complex picture which emerges for third-person possessors is the focus of the following subsections.

2.1. THIRD-PERSON POSSESSORS IN TURKISH. In standard Turkish, a possessum only agrees in number with a 3PL possessor argument if that possessor is not overt in the structure.⁵ That is, for a plural-possessing-singular reading (6), the possessum is indexed for number only when the possessor is *pro*-dropped (6a). If it is overt, the noun is suffixed only with *-(s)I* (6b), (6c).⁶

- (6) a. kedi-ler-i b. onların kedi-si c. #onların kedi-ler-i
 cat-PL-3P their cat-3P their cat-PL-3P
 ‘their cat’ ‘their cat’ int: ‘their cat’

In combination with the prohibition on **-lar-lar*, this alternation under *pro*-drop has the effect of creating a three-way ambiguity, an ambiguity resolved by overt possessors:

- (i) a. aγa-∅ at-a
 father-GEN horse-3P
 ‘the father’s horse’
 b. Masha-∅ aγa-tin at-a
 Masha-GEN father-3P-*n* horse-3P
 ‘Masha’s father’s horse’
 (Baker & Vinokurova 2010: 598)

Some have assumed *-(T)In* is a relic of the genitive (e.g. Stachowski & Menz 1998: 428), though it is more likely related to the oblique form of third-person possession *-(T)In* (Krueger 1962: 77, Johanson 2021: 802), cognate with Turkish possessed accusative *-(s)In* (see footnote 6). The licensing of an oblique case in a possessed posses (ib) is an intriguing pattern and is worthy of further crosslinguistic comparison.

⁴ Following Tat & Kornfilt (2018), person and number features can be analyzed as two separate morphemes. Segmentation is straightforward in Turkish, though less so in Sakha: aside from the final *-t* PL, evidence for decomposing Sakha 1PL *-BIt* and 2PL *-GI*t can be found in the oblique forms of the possessives (Krueger 1962: 91-105, Stachowski & Menz 1998: 422), where 1SG, 2SG are syncretic with their plural forms:

- (i) 1SG 1PL 2SG 2PL
 NOM oγo-m oγo-**but** oγo-η oγo-**γut**
 ACC oγo-**bu**-n oγo-**but**-un oγo-**yu**-n oγo-**γut**-un

⁵ We hedge by localizing these judgments (6) to standard Turkish because some speakers we have surveyed do indeed accept (6c) on a ‘their cat’ reading, though for all these speakers also accept the *-lar-less* option (6b) as well.

⁶ The final *-i* in *kedileri* (6a) is the same third-person possessive suffix *-(s)I*. Evidence for this is found in the oblique case forms of possession, where *-(s)I* has a contextual allomorph *-(s)In* (the so-called ‘pronominal *-n*’; Johanson 2021: 459), which appears with both singular (ia) and plural (ib) nouns:

- (i) a. kedi-si > kedi-si-**n**-i b. kedi-ler-i > kedi-ler-i-**n**-i
 cat-3P cat-3P-*n*-ACC cat-PL-3P cat-PL-3P-*n*-ACC
 ‘his/her cat’ ‘his/her cats - their cat - their cats’

(7)	<u><POSS'R#,POSS'M#></u>	<u>pro-drop</u>	<u>overt possessor</u>		
a.	<PL,SG>	kediler-i	onların	kedisi	'their cat'
b.	<SG,PL>	kediler-i	onun	kediler-i	'his/her cats'
c.	<PL,PL>	kediler-i	onların	kediler-i	'their cats'

This indicates that the third-person possessive suffix *-(s)I* itself is not specified for number, thus our choice of glossing it simply as '3.' Considering the *pro-drop* patterns, the <PL,SG> (7a) and <SG,PL> (7b) readings can be captured by positing two distinct positions for *-lAr*, one for number of possessum (Num in (8)) and another for number of possessor (Poss'r # in (8)).

(8)	<u>Noun</u>	—	<u>Num</u>	—	<u>Poss'r #</u>	—	<u>AGR-person</u>	
a.	<i>kediler-i</i>		$-\emptyset$		<i>-lAr</i>		<i>-(s)I</i>	\Rightarrow <i>kedileri</i> 'their cat'
b.	<i>kediler-i</i>		<i>-lAr</i>		$-\emptyset$		<i>-(s)I</i>	\Rightarrow <i>kedileri</i> 'his/her cats'

In other words, for the 'their cat' reading (7a), the noun's Num-head is a zero-morpheme ((a) in (8)); for the 'his/her cats' reading (7b), the possessor's number slot is a zero ((b) in (8)).

Crucially, given the unavailability of plural agreement when a 3PL possessor is overt in Turkish as in (6c) and (7a), we contend that the structural position for possessor number is not a true agreement head. This is taken up in §3, where it is argued that *-lAr* does not spell out on the possessor as a result of an agreement relationship, but is rather lowered onto the possessor.

2.2. THIRD-PERSON POSSESSORS IN SAKHA. In Sakha, nouns possessed by a 3PL always index possessor number (Johanson 2021: 801, Stachowski & Menz 1998: 422, Vinokurova 2005: 133, Krueger 1962: 97-8). This is the case with pronominal possessors, whether overt or *pro*-dropped (9a), as well as full nominal possessors (9b). Unlike Turkish (6), omitting *-lAr* for singulars possessed by plurals is ungrammatical (10).⁷

(9)	a.	(kiniler) at-tar-a (they) horse-PL-3P 'their horse'	b.	oço-lor iye-ler-e child-PL mom-PL-3P 'the children's mother'
(10)	a.	*kiniler at-a they horse-3P int. 'their horse'	b.	*oço-lor iye-te child-PL mother-3P int. 'their mother'

Given the obligatoriness of *-lAr* to index possessor number, we argue that, unlike Turkish, the *-lAr* we observe in (9) is a genuine agreement morpheme, exposing an uninterpretable number feature. Thus, we have an immediate account of the structures responsible for two readings of

⁷ This appears to extend to subject-verb agreement in Sakha (Vinokurova 2005: 211). All of our examples with 3PL subjects have plural agreement on the verb, whether the subject is animate (ia) or inanimate (ib).

(i)	a.	İt-tar kuoska-ni sirsibit-tara. dog-PL cat-ACC chase-PST-3PL 'The dogs chased the cats.'	b.	Tünüg-ter aldžat-illi-bit-tar. window-PL break-PASS-PST-3PL 'The windows were broken.'
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This is another difference from Turkish, where 3PL agreement is ungrammatical for inanimate subjects, optional for 3PL animate subjects (Kornfilt 1997: 386-7); though *pro*-dropped 3PL results in plurality being required on the verb, overt pronouns are not ungrammatical with *-lar*-suffixes.

the three-way ambiguity in Sakha discussed in the introduction (see (11))—specifically, the 3PL-possessing-SG (11a) and 3SG-possessing-PL (11b) is structural ambiguity (12).

(11)	<u><POSS'R#,POSS'M#></u>	<u>pro-drop</u>	<u>overt possessor</u>	
a.	<PL,SG>	at-tar-a	kiniler at-tar-a	‘their horse’
b.	<SG,PL>	at-tar-a	kini at-tar-a	‘his/her horses’
c.	<PL,PL>	at-tar-a	kiniler at-tar-a	‘their horses’

(12)	<u>Noun</u>	—	<u>Num</u>	—	<u>AGR #</u>	—	<u>AGR-person</u>	
a.	<i>at</i>		-∅		-LAR		-(T)A	⇒ <i>attara</i> ‘their horse’
b.	<i>at</i>		-LAR		-∅		-(T)A	⇒ <i>attara</i> ‘his/her horses’

As an agreement morpheme, *-LAR* for the ‘their horse’ reading (11a) is unaffected by whether or not the possessor is overt. While the structural ambiguity responsible for this ambiguity in Sakha (12) is similar to what we have proposed for Turkish under *pro-drop* (8), we contend that the crucial difference is in the realization of the PL feature. Unlike Turkish, Sakha *-LAR* is part of the agreement paradigm for 3PL possessors; in Turkish, *-LAR* under *pro-drop* bears an interpretable number feature, and is suffixed to the possessum as a result of lowering.

2.3. PLURALS-POSSESSING-PLURALS. So far we have given very little discussion to the 3PL-possessing-PL reading (c):

(13)	çocuk-lar-ı (Turkish)	/	оҕо-lor-o (Sakha)
	child-PL-3P	/	child-PL-3P
	a. ‘his/her children’	b.	‘their child’
		c.	‘their children’

While we will reassess this **-lar-lar* haplology effect in §4, some relevant facts are worth noting here. First, the 3PL-possessing-3PL cannot be immediately captured by the structural ambiguity account we have developed for the other two readings, given that there is only a single *-lar* which is spelled out. *-LAR* cannot be spelled out in both positions (**çocuklari*, **oҕoloro* ‘their children’). The culprit for this haplology cannot be plausibly attributed to language-wide phonotactic constraints, given that similar sequences appear in Turkish (e.g. *kiler* ‘cellar’ > *kilerler* ‘cellars’) and Sakha (e.g. *kötör* ‘bird’ > *kötördor* ‘birds’).

As noted by Johanson (2021: 459), the offending sequence appears to be two adjacent plural morphemes, a condition which holds across Common Turkic languages. This generalization suggests that whatever grammatical mechanism is responsible for **-lar-lar* is unaffected by non-adjacent plurals.⁸ Thus, for 1PL, 2PL possessors in Turkish and Sakha, where person agreement intervenes between the possessum’s number affix and its possessor-number, a plural-possessing-plural (e.g. ‘our children’) reading requires both plural suffixes (14a). Neither the possessum’s PL suffix (14b) nor the plural-indexed possessor-agreement (14c) can be omitted for this reading.

(14)	a.	bizim çocuk- lar -im- ız (Turkish)	/	bihigi oҕо- lor -bu- t (Sakha)
		our child-PL-1P-PLP	/	we child-PL-1P-PLP
		‘our children’		

⁸ A second aspect of Johanson’s generalization concerns the South Siberian Turkic languages. These languages utilize the general plural suffix *-lar* for 2PL possessors, e.g. Tuvan *-(I)ḡAr*, Shor *-LARḡ* (Schönig 1998: 408-9). Like Sakha and Turkish, these languages show a three-way ambiguity in third-person possessors as shown in the grayed cells in the following (Iskhakov & Pal’mbakh 1961: 145; Anderson & Harrison 1999: 21-3; Dyrenkova 1941: 50-2):

- b. #bizim çocuk-um-uz (Turkish) / #bihigi oγo-bu-t (Sakha)
 our child-1P-PLP / we child-1P-PLP
 #‘our children’ (✓ ‘our child’)
- c. *bizim çocuk-lar-ım (Turkish) / *bihigi oγo-lor-um (Sakha)
 our child-PL-1SP / we child-PL-1SP
 int. ‘our children’

Based on these observations and analyses, we provide a structural account of third-person plural possession in Turkish and Sakha in the following section. Moreover, we present an analysis of *-lar-lar haplology in §4, following Nevins (2012)’s hypothesis that different types of haplology occur during different levels of exponence, arguing that *-lar-lar is a phonologically-sensitive restriction of -lar itself imposed during Vocabulary Insertion.

3. The three readings in Turkish under *pro*-drop, and why overt possessors resolve them.

As illustrated in the previous section, Turkish shows a three-way ambiguity in the absence of an overt third person possessor, an ambiguity which can be resolved by the use of an overt third-person pronoun (15):

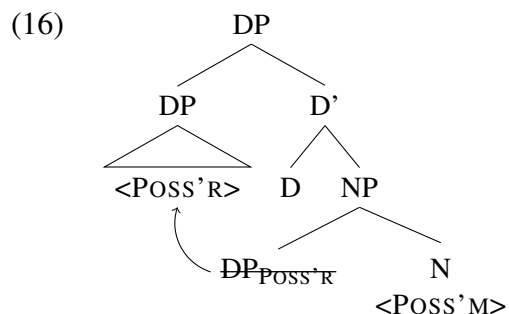
(15)	<POSS’R#,POSS’M#>	<i>pro</i> -drop	overt possessor		
a.	<PL,SG>	at-lar-1	onların	at-1	‘their horse’
b.	<SG,PL>	at-lar-1	onun	at-lar-1	‘his/her horses’
c.	<PL,PL>	at-tar-1	onların	at-lar-1	‘their horses’

Before diving into our analysis, we will first make more explicit our theoretical assumptions. We adopt a basic possession structure wherein the possessor is merged first into the specifier of a head in the possessum’s extended projection and then moves to the possessum’s DP specifier.⁹

	Tuvan		Shor	
	SG POSS’M	PL POSS’M	SG POSS’M	PL POSS’M
1SG	<i>nom-um</i>	<i>nom-nar-ım</i>	<i>tura-m</i>	<i>tura-lar-ım</i>
1PL	<i>nom-uvus</i>	<i>nom-nar-ıvıs</i>	<i>tura-bıs</i>	<i>tura-lar-ıvıs</i>
2SG	<i>nom-uŋ</i>	<i>nom-nar-iŋ</i>	<i>tura-ŋ</i>	<i>tura-lar-iŋ</i>
2PL	<i>nom-uŋar</i>	<i>nom-nar-iŋar</i>	<i>tura-lar-iŋ</i>	<i>tura-lar-iŋ</i>
3SG	<i>nom-u</i>	<i>nom-nar-i</i>	<i>tura-zı</i>	<i>tura-lar-i</i>
3PL	<i>nom-nar-i</i>	<i>nom-nar-i</i>	<i>tura-lar-i</i>	<i>tura-lar-i</i>

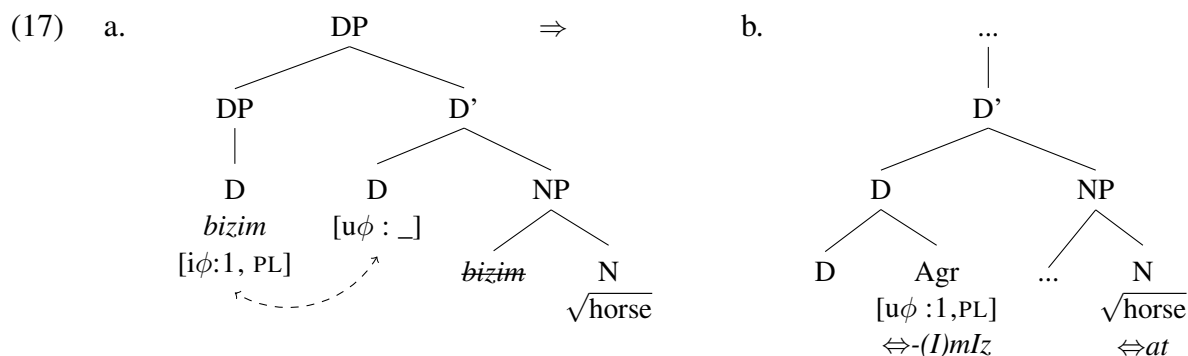
Interestingly, a similar three-way ambiguity extends into the second-person in Shor but not Tuvan. The presence of this ambiguity in Shor and its absence in Tuvan correlates with the order of person and number marking for 2PL—in Shor 2PL possessor agreement *-LARıŋ* number indexing in *-LAR* linearizes to the left of person *-ıŋ*, whereas in Tuvan 2PL *-ıŋAR* the number marking *-(l)Ar* appears to the right of person *-ıŋ*.

⁹ Note that merging the possessor in the specifier of the NP as in (16) is typically the structure for inalienable possession, with alienable possession introducing the possessor in the specifier of a PossP between D and N/n (see Myler 2016: 50-2). We adopt this structure for simplicity, though our analysis could be imported to a PossP analysis.



For the morphosyntax of possessor agreement, we adopt the Distributed Morphology (DM) position that agreement features are not themselves functional heads present in narrow syntax. Rather, agreement morphemes are adjoined to other functional heads which are themselves present at narrow syntax, and the establishment of agreement relationships occurs temporally between narrow syntax and Vocabulary Insertion (VI) (Halle & Marantz 1993; Embick & Noyer 2001; Bobaljik 2008; Dékány 2011). In particular, we assume that the relevant head which probes for possessor agreement is the possessum's D-head. Finally, while it is outside of the scope of this paper to discuss the ongoing theoretical debate on the status of Upwards vs. Downwards Agree (see Zeijlstra 2012), we assume that uninterpretable features are checked by interpretable features which c-command them (i.e. essentially Spec-Head Agree for the structure in (16)).

As a simple example, consider *bizim atımız* 'our horse.'¹⁰ Narrow syntax generates the structure in (17a), though, following DM assumptions, the nodes are not yet spelled out. Between narrow syntax and VI, the uninterpretable *phi*-probe in the possessum's D-head establishes an Agree relationship with the c-commanding pronoun, valuing the uninterpretable *phi*-features of the probe and adjoining them (17b). After (17b), the vocabulary items are inserted, imposing linearization (i.e. spelling out *-(I)mIz* as a suffix on the noun *at*).



¹⁰ We assume the following rules of exponence for Turkish possessor agreement. While we do contend that 1PL, 2PL are morphologically complex (see Tat & Kornfilt 2018), we treat them as portmanteaux for simplicity.

- (i) Turkish rules of exponence for POSS AGR
- | | | | |
|-----------|------------------|---|----------------|
| POSS AGR: | [1, PL] | ⇔ | <i>-(I)mIz</i> |
| | [1] | ⇔ | <i>-(I)m</i> |
| | [2, PL] | ⇔ | <i>-(I)nIz</i> |
| | [2] | ⇔ | <i>-(I)n</i> |
| | <i>elsewhere</i> | ⇔ | <i>-(S)I</i> |

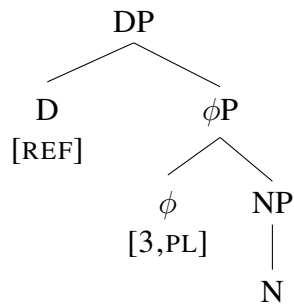
Following §2, 3PL *-IAr* is not in the rules of exponence. One could also posit the inclusion of *-IAr* in the paradigm, which would require a non-local deletion rule for the lower PL. This could potentially be implemented *à la* Nevins's (2012: 87) linearization-level dissimilation, with a filter that two plurals cannot be spelled out in the same domain.

With our theoretical assumptions established, we now move to the heart of our analysis, being the three-way ambiguity in (15) and its resolution with overt pronouns. There is, however, a crucially important difference that is masked by the relatively straightforward opposition of *pro*-drop versus overt third-person pronouns as we have laid out in (15), being that Turkish third-person pronouns display distinct Binding Theoretic properties from third-person *pro*. Specifically, third-person pronouns like *o*, *onlar* ‘he/she/it, they’ appear to be R-Expressions, showing Condition C effects (examples (a-b) in (18), (19)), whereas *pro* shows Condition B effects (examples (c-d)), and thus is more like variables:

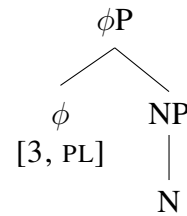
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|---|--|
| (18) ‘He loves his mother.’ | (19) ‘They rode on their horses.’ |
| a. o_i onun _{*i/j} annesini seviyor. | a. $onlar_i$ [$onların_{\{i/j\}}$ atlarına] bindi. |
| b. pro_i onun _{*i/j} annesini seviyor. | b. pro_i [$onların_{\{i/j\}}$ atlarına] bindiler. |
| c. o_i $pro_{\{i/*j\}}$ annesini seviyor. | c. $onlar_i$ [$pro_{\{i/*j\}}$ atlarına] bindi. |
| d. pro_i $pro_{\{i/*j\}}$ annesini seviyor. | d. pro_i [$pro_{\{i/*j\}}$ atlarına] bindiler. |

Following Déchaine & Wiltschko (2002), we assume that the cross-linguistic difference in Binding Theoretic status of pronouns can be encoded as a difference in structural complexity. We claim that overt and *pro*-dropped third-person possessors have different structures which affect the realization of the exponents, where third-person *pro* is a Pro- ϕ P and overt third-person pronouns are Pro-DPs. We assume that Turkish Pro-DPs project a REF(ERENTIAL) feature on their D-head (20), whereas Pro- ϕ Ps (i.e. *pro*), lacking the D-layer, correspondingly lack the REF feature (21). Both types of pronouns project *phi*-features (i.e. person, number) on their ϕ -head.

(20) Overt third-person pronouns: *onlar*



(21) Third-person *pro*_{PL}: \emptyset



One upshot of this approach for third-person overt pronouns versus *pro* is that we can reframe the basic opposition between plural-possessing-singular (22), where the possessum is only indexed for PL if the possessor is *pro*.

- | | |
|---|---|
| (22) a. $onların$ at-1
their horse-3P
‘their horse’ | b. pro at-lar-1
horse-PL-3P
‘their horse’ |
|---|---|

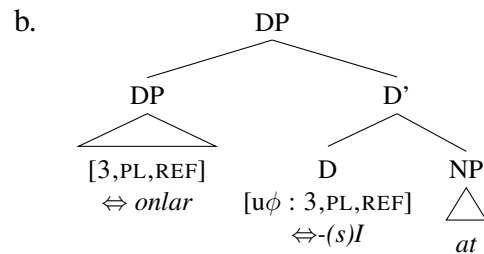
Rather than analyzing this as ‘optionality,’ we argue that an overt pronoun can only spell out if it is uttered in a context wherein the restrictions imposed by REF can be satisfied (i.e., contexts in which it is not c-commanded by an antecedent). If those restrictions are not met, the derivation will crash. However, if there is no REF feature in the structure (i.e. (21), (22b)), the grammar still

has to resolve the interpretable *phi*-features on the possessor. Again *-lar* in (22b) is *not* a genuine agreement feature. Instead, it is the result of morphological *Lowering* of the possessor’s PL feature onto the possessum, driven by the requirements that interpretable PL must be spelled out.

In the next subsections, we provide a more detailed syntactic analysis of the three readings with overt pronouns (§3.1) and under *pro*-drop (§3.2).

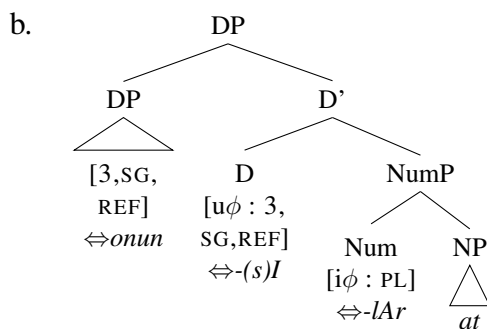
3.1. WITH OVERT PRONOUNS. Because we assume that the D-head of the possessum has no exponent for an uninterpretable PL feature, the three readings in Turkish can be straightforwardly accounted for. On the 3PL-possessing-SG reading (23), the *phi*-probe is valued by the features in the DP. After valuation, the features are matched to vocabulary items. Because there is no morpheme which matches the 3PL features of the *phi*-probe, it is spelled out as the elsewhere morpheme *-(s)I* (see fn 10). We adopt a simplified representation of a *phi*-probe in D in (23b) for reasons of space.

- (23) a. onların at-1 <PL,SG>
 their horse-3P
 ‘their horse’

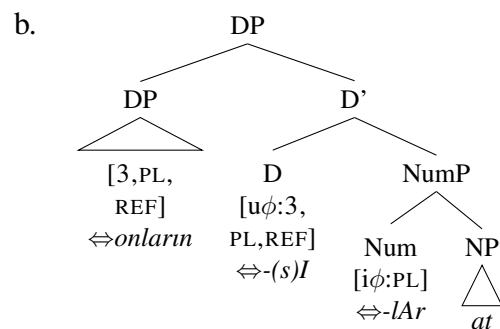


On the two examples where the possessum itself is plural (24), (25), the only difference from (23) is that the noun’s NumP projects an interpretable PL feature which is spelled out as the suffix *-lar*. Again, the D-head lacks number overt agreement because there is no exponent for it.

- (24) a. onun at-lar-1 <SG,PL>
 his/her horse-PL-3P
 ‘his/her horses’

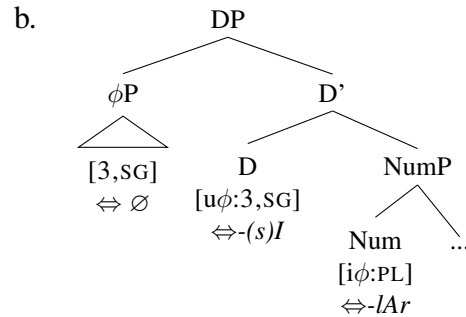


- (25) a. onların at-lar-1 <PL,PL>
 their horse-PL-3P
 ‘their horses’



3.2. WITH *pro*-DROPPED POSSESSORS. Turning to the situation under *pro*-drop, the most straightforward reading to account for is the SG-possessing-PL reading, where the only difference from the above (24) is that instead of a DP with a REF feature, the possessor is a ϕ P. Again, the possessum’s number is spelled out in Num, while its D-head receives the elsewhere possessor agreement *-(s)I*:

(26) a. pro_{SG} at-lar-1 <SG,PL>
 horse-PL-3P
 ‘his/her horses’

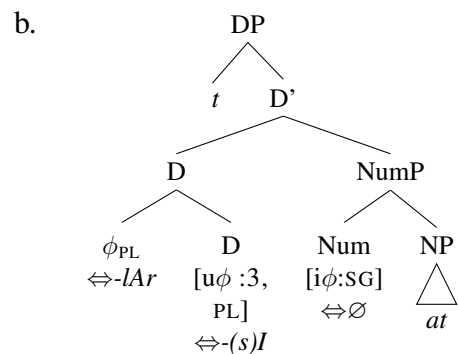
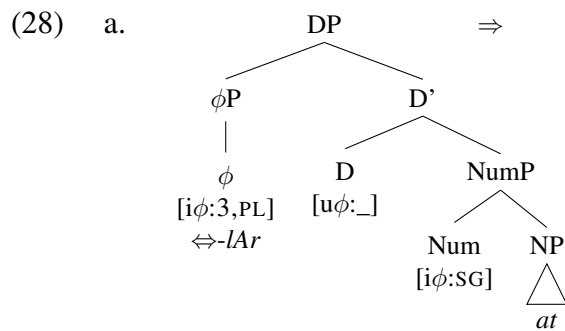


We encounter more complexity when the *pro*-dropped possessor is 3PL: In both cases where the possessum is singular (27a) or plural (27b), only a single instance of *-lar* can occur.

(27) a. pro_{PL} at-lar-1 <PL,SG>
 horse-PL-3P
 ‘their horse’

b. pro_{PL} at-lar-(*lar)-1 <PL,PL>
 horse-PL-PL-3SP
 ‘their horses’

For the ‘their horse’ reading (27a), we contend that the plural suffix *-lar* ends up as a suffix on the possessum as a result of *Lowering*, a merger operation that occurs between narrow syntax and vocabulary insertion which is able to spell out a terminal node in a location that it is not merged in the syntax (Embick & Noyer 2001). Because $\phi_{PL} \Leftrightarrow -lar$ is a suffix, it must have a host to spell out, a condition that cannot be met within the ϕ P itself, as the possessor does not project a REF feature (and thus cannot spell out as a pronoun). As a result, this feature adjoins to the nearest adjacent head, which is the possessum’s *phi*-probe (D^0):



Like agreement, Lowering (28b) operates before VI, and is thus a similar operation. On our approach, we assume that the main difference between Lowering and genuine agreement is that Lowering can move interpretable features, whereas agreement morphemes are uninterpretable. In the next section, we examine the last reading under *pro*-drop, being the <PL,PL> ‘their horses’ reading (27b).

4. *-lar-lar haplology in Turkish and Sakha. As demonstrated in §2, a possessum always agrees with a 3PL possessor in Sakha. This difference is a result of the exponents that form the possessor agreement paradigms between Turkish and Sakha (29), where Sakha includes PL as an exponent (29a):

- (29) a. Sakha POSS AGR (NOM):
- | | | |
|------------------|---|--------------|
| [1,PL] | ⇔ | <i>-Blt</i> |
| [1] | ⇔ | <i>-(Im)</i> |
| [2,PL] | ⇔ | <i>-GIt</i> |
| [2] | ⇔ | <i>-(I)ŋ</i> |
| [PL] | ⇔ | <i>-LArA</i> |
| <i>elsewhere</i> | ⇔ | <i>-(T)A</i> |
- b. Turkish POSS AGR (NOM)
- | | | |
|------------------|---|----------------|
| [1,PL] | ⇔ | <i>-(Im)Iz</i> |
| [1] | ⇔ | <i>-(Im)</i> |
| [2,PL] | ⇔ | <i>-(In)Iz</i> |
| [2] | ⇔ | <i>-(In)</i> |
| <i>elsewhere</i> | ⇔ | <i>-(s)I</i> |

Following from these rules of exponence for Sakha (29a), the <PL,SG> reading is a result of spelling out the plural exponent after it is valued from the interpretable PL feature in the possessor (30a) whether the possessor is overt or *pro*-dropped. The <SG,PL> reading predictably spells out *-LAr* on the noun's Num-head (30b).

- (30) at-tar-a
horse-PL-3P
- | | |
|-----------------------------|---|
| a. <PL,SG> 'their horse' | $[N \textit{ at}] [Num \textit{ -}\emptyset] [D [Agr\# \textit{ -tar}] [Agr\pi \textit{ -a}]]$ |
| b. <SG,PL> 'his/her horses' | $[N \textit{ at}] [Num \textit{ -tar}] [D [Agr\# \textit{ -}\emptyset] [Agr\pi \textit{ -a}]]$ |
| c. <PL,PL> 'their horses' | |

The final topic we consider is the third reading, the <PL,PL> reading, where we find only a single plural morpheme in both Sakha and Turkish. To repeat, this reading is available in Sakha with overt or *pro*-dropped possessors (31a), and under *pro*-drop in Turkish (31b). PL *-lAr* is not present in Turkish's possessor agreement paradigm (29b).

- (31) a. (kiniler) at-tar-(*-dar)-a (Sakha)
(they) horse-PL-(PL)-3P
'their horses'
- b. *pro*_{PL} at-lar-(*-lar)-ı (Turkish)
horse-PL-(-PL)-3P
'their horses'

How can the **-lar-lar* haplology be accounted for? This presents a challenge in both Sakha, where 3PL always agrees, and Turkish, where under *pro*-drop $\phi_{PL} \Leftrightarrow \textit{-lAr}$ lowers onto the possessum's D-head (as argued in §3.2). As was shown in §2.3, this ban on two-plurals in the same word is only in effect when the plural morphemes would otherwise surface in sequence (thus not affecting the order $Agr\pi$ - $Agr\#$ we observe in 1PL *-(Im)Iz/-Blt*, 2PL *-(In)Iz/-GIt*), and is unlikely to be the result of broader phonotactic properties of these languages.

One intriguing hypothesis is to assume that the **-lar-lar* effect observed in Sakha (31a) is actually the result of *-lar* being spelled out in the possessum's Num-head in a type of omnivorous number agreement (Nevins 2011). This could be implemented in (32) by hosting the *phi*-probe for non-participant PL agreement on the Num-head. Implementing such a modification to Turkish would require significant modifications to our proposal in §3, hence we will not explore it here.

- (32)
- ```

graph TD
 D1[D] --- Num1[Num]
 D1 --- D2[D]
 Num1 --- N[N]
 Num1 --- Num2[Num]
 N --- at[at]
 Num2 --- LAr[-LAr]
 D2 --- TA[-(T)A]

```

(=PL/AGR<sub>PI</sub>)      (=AGR)

Evidence against hosting Sakha plural agreement in Num (32) is found in a small set of nouns which undergo root-allomorphy in the plural, where the last consonant of the stem is replaced with a *-t* before the plural suffix (e.g. *uol* ‘boy’ > *uolat-tar*; see Krueger 1962: 75).<sup>11</sup> Crucially, these irregular nouns only undergo a stem change if they are plural (33b)-(33c)—if they are semantically singular the *-t*-less stem appears (33a).

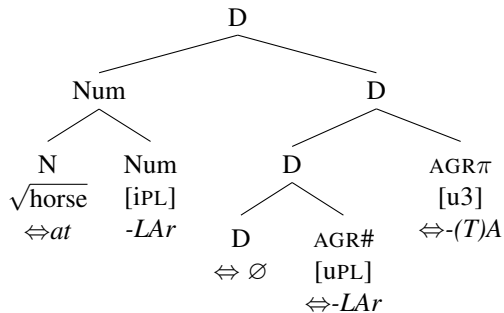
- |                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(33) a. (kiniler) <i>uol-lar-a</i> &lt;PL,SG&gt;<br/>(they) son-PL-3P<br/>‘their son’</p> <p>b. (kini) <i>uolat-tar-a</i> &lt;SG,PL&gt;<br/>(s/he) son-PL-3P<br/>‘his/her sons’</p> <p>c. (kiniler) <i>uolat-tar-a</i> &lt;PL,PL&gt;<br/>(they) son-PL-3P<br/>‘their sons’</p> | <p>(34) a. (kiniler) <i>oγo-lor-o</i> &lt;PL,SG&gt;<br/>(they) kid-PL-3P<br/>‘their child’</p> <p>b. (kini) <i>oγo-lor-o</i> &lt;SG,PL&gt;<br/>(s/he) kid-PL-3P<br/>‘his/her children’</p> <p>c. (kiniler) <i>oγo-lor-o</i> &lt;PL,PL&gt;<br/>(they) kid-PL-3P<br/>‘their children’</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

If plural-agreement *-LAr* were hosted in Num (32), we would predict that the plural-possessing-singular reading (33a) should surface as (*kiniler*) *uolattara* (or at the very least, would be available on a ‘their son’ reading), given that the noun and a PL Num-head would form a constituent (Bobaljik 2012; Smith et al. 2019).

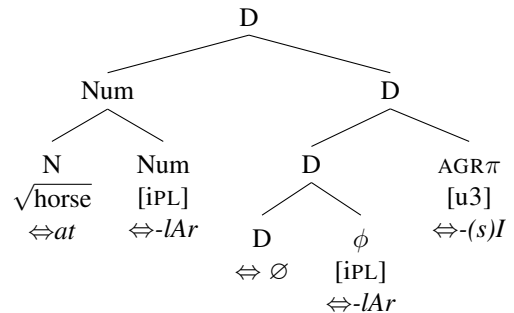
For all <PL,PL> in Sakha and those under *pro*-drop in Turkish (35), the structure which is built by the morphological component indeed features two plural features (36), (37), though the plural indexed the possessor is uninterpretable in Sakha (36) and interpretable in Turkish (37).

- (35) (kiniler) *at-tar-a* (Sakha) / *pro*<sub>PL</sub> *at-lar-ı* (Turkish)  
 (they) horse-PL-3P / horse-PL-3P  
 ‘their horses’

(36) Sakha



(37) Turkish



Despite arriving at the structures in (36), (37) through different post-syntactic operations, what we observe with *\*-lar-lar* is explainable by the same principle. In particular, it is best characterized as a Vocabulary-Insertion-level (henceforth, VI-level) dissimilation, following from the hy-

<sup>11</sup> Additional examples include the following: *uol* ‘boy; son’ PL: *uolat-tar*, *er* ‘man’ PL: *eret-ter*, *oγonnyor* ‘old man’ PL: *oγonnyot-tor*, *emeexsin* ‘old woman’ PL: *emeexsit-ter*, *oyuun* ‘shaman’ PL: *oyuut-tar*, *doγor* ‘friend’ PL: *doγot-tor*, *küis* ‘girl, daughter’ PL: *kirgüt-tar* (note further stem changes). There is also one noun *džaxtar* ‘woman’ which acquires *-l* instead of *-t*: *džaxtal-lar* (Sakha consonant assimilation for the archiphoneme /L/ dictates *džaxtar-dar*). All of these nouns were checked with the consultant, with all following the pattern in (33).

pothesis developed in Nevins (2012) that different types of dissimilation occur at different stages of exponence. Properties of VI-level haplology are the following:

- (38) a. Phonologically-sensitive properties of affixes (Nevins 2012: 88)  
b. No reference to individual features  
c. Operates under adjacency  
d. Possible repairs: alternate allomorph selection, zero-insertion, coalescence

VI-level haplology effects occur during Vocabulary-Insertion. It can be jocularly characterized as a morpheme declaring of another morpheme “I don’t want to sit next to that guy.” As the abstract, post-syntactic morpheme structure in (36), (37) is undergoing spell out, certain morpho-phonological restrictions play out. As a phonologically-sensitive property (38a), despite the phonological sequence generated by two adjacent *-lars* being phonotactically sound in these languages, it is rather a property of the exponent *-lar* itself which dislikes occurring in sequence with another instance of *-lar*. This is analogous to the pattern with English plural possession, where the PL, POSS exponent /z/ cannot occur in sequence (Nevins 2012: 105), e.g. *the cats’ feet* [kæts, \*kætsɪz], even though standard English does not dissimilate when the noun itself ends in a sibilant (e.g. *the bus’s tires* [bʌsɪz]). Next, while both instances of *-lar* in *\*-lar-lar* expone a plural feature, this is not inconsistent with property (38b). Next, the claim that *\*-lar-lar* haplology operates under direct linear adjacents (38c) is flatly undeniable—neither of these languages have a single morpheme which can intervene between the possessum’s Num-head and possessive suffixes. Finally, we observe a repair (38d), which in Sakha and Turkish <PL,PL> is insertion of an (otherwise unused) zero-plural allomorph.

In essence, the synchronic grammars of Turkish and Sakha represent two routes of arriving at the same *\*-lar-lar* haplology.

**5. Conclusion and further studies.** We have investigated the patterns of third-person pronouns in possessive constructions in Turkish and Sakha. We propose that one main difference between the possessive suffixes in these two languages is that Sakha *-LAR* is a genuine 3PL agreement morpheme, whereas Turkish *-lAr* is not. Following Déchaine & Wiltschko (2002), we argue that Turkish overt third-person pronouns have different syntactic properties than third-person *pro*, where overt pronouns are R-expressions while *pro* is not. Moreover, we argue that the *pro*-drop pattern in Turkish (1) is the result of the possessor’s plural feature lowering onto the possessum when the possessor is dropped. This is driven by the requirement of the morpheme *-lAr* to have a host. Furthermore, *-lAr* does not have to undergo lowering to find a host when there is an overt possessor.

On the other hand, Sakha is unique among Turkic languages in having obligatory 3PL agreement. Despite the obligatory nature of this agreement system, the language still maintains the *\*-LAR-LAR* haplology effect seen in other Turkic languages. We characterize this process as VI-level haplology following Nevins (2012), the same haplology responsible for *\*-lAr-lAr* in Turkish.

With this paper, we provide two routes to the same haplology in two distantly related Turkic languages. Nevertheless, there are still crucial issues which still require a close investigation. For example, the parallelism between agreement of third-person in the nominal and verbal domain may shed a light on the nature of the pronouns and agreement systems in Turkic languages. Particularly, we wonder whether the optional marking of the third-person plural in the verbal domain and the emphatic nature of overt first- and second-person pronouns unlike third person pronouns

can be accounted by a unified analysis.

Moreover, the classification of restrictions on *pro*-drop in other Turkic languages as well as dialects spoken in this geography might be insightful to see the nature of the possessor agreement across the members of this language family.

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