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Associative plurals in Slavic languages and beyond

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ABSTRACT

This paper examines the associative plural construction in languages that use the multiplicative plural marker to derive the associative plural (henceforth plural pattern languages) and establishes a novel typological generalization about such languages: all plural pattern languages are either articleless or have affixal articles. To account for this previously unnoticed property of plural pattern languages, a new analysis is presented in which the plural pattern involves incorporation of Num^{o} to the head of a functional projection AssociativeP. It is then argued that associative plurals in South Slavic—which involve plural *possessives*—also show the plural pattern (i.e., also involve incorporation of the Num head), showing that the current approach can unify cross-linguistically dissimilar associative plurals under one analysis.

KEYWORDS associative plural · typology · Number · head-movement · South Slavic

1 INTRODUCTION

This paper is concerned with the syntactic structure of a particular type of associative plural (APl). APls are nominal expressions meaning 'X and those associated with X'. They involve a human-denoting stem—usually a proper name or kinship term—and an 'associative marker' (AM) (Moravcsik 1994, Corbett 2000). Illustrative examples of APls cross-linguistically are given in (1)–(4): in Malayalam (1) the AM is the word *okke*, 'all' (Asher & Kumari 1997, Daniel & Moravcsik 2013); in Belep (2) the AM is *-ma*, from Proto-Oceanic *MA.4, 'and/with' (Mauri & Sansò 2019); in Japanese (3) the AM is *-tachi*, which is identical to the ordinary plural (Nakanishi & Ritter 2008); and (4) shows an APl in Bulgarian, which involves a plural possessive form (Daniel 2004, Vassilieva 2005).

(1) Raaman **okke**
Ram all
'Ram and associates'

(2) Teâ Polo-**ma**
Teâ Polo-AND
'Teâ Polo and his people'

(3) Mika-**tachi**-ga
Mika-PL-NOM
'Mika and her family/friends' APL
'Multiple people called Mika' PL

(4) Pešov-**i**
Peša.POSS-PL
'Peša and his family/friends' APL
'Those belonging to Peša' POSS

The goal of this paper is two-fold. First, I show that the Japanese-type APl (3)—which uses the multiplicative (i.e., $\neq 1$) plural marker as the AM—involves movement of the Num(ber) head to the head of an Associative Phrase under Agree. Throughout, Japanese-type APls will be referred to as the plural pattern and the Malaylam/Belep-type APl in (1)–(2) will be referred to as the non-plural pattern.[1] Second, I show that the APl in (4), which involves a plural *possessive* form, should also be catergorized as plural pattern;

[1]The syntactic derivation of the non-plural pattern will not be considered in detail in this paper. See Section 3 and Cinque 2018, whose basic analysis I adopt.

that is, it also involves movement of Num^0 to the head of AssociativeP. Regarding the first goal, motivation for postulating a distinct syntactic derivation for the plural pattern comes from a novel observation about plural pattern languages: they either have affixal definite articles or lack definite articles. The analysis of the plural pattern to be proposed in this paper captures this.

The paper is organized as follows. Section 2 establishes the novel typological generalization. Section 3 offers a new analysis of plural pattern languages and deduces the generalization. In Section 4, I motivate the claim that the possessive-like APls in South Slavic languages should receive the same syntactic analysis as plural pattern APls in e.g., Japanese, which do not involve possessive morphology. Section 5 concludes.

2 A NOVEL TYPOLOGICAL GENERALIZATION

I have collected a sample of 108 languages that show the plural pattern. These languages span 33 distinct language families, 4 creoles/pidgins and 2 isolates (the full list can be found in the Appendix). Interestingly, all of these languages either have affixal definite articles or lack definite articles—none have free-standing definite articles. We then have the typological generalization in (5). This is a one-way correlation; although all plural pattern languages have affixal articles or no articles, not all affixal article/articleless languages with an APl show the plural pattern.

(5) **Generalization**: All languages that show the plural pattern either have affixal definite articles or lack definite articles.

Before substantiating the generalization, let me define definite articles for our purposes. Following Bošković (2016), a definite article is a unique definite element, such that it is distinct from demonstratives and occurs once per noun phrase, and has roughly the meaning of the iota-operator (i.e., it yields an argument of type e (Chierchia 1998)).

Consider first the plural pattern in Indo-European (IE), found in Bulgarian, Nepali, Ossetic, Polish, Serbo-Croatian, Sinhala and Slovenian (recall that the possessive-like APls in South Slavic will be analyzed as plural pattern APls; see Section 4.1). Examples of APls in Nepali (6-b) and Bulgarian (7) are given below.

(6) a. kalam -**haru**
pen -PL
'pens' (Lahaussois 2003:p.10)

b. ama -**haru**
mother -PL
'my mother and her people'
(Daniel & Moravcsik 2013)

(7) Peš**ov**-**i** pristignaxa
Peša.POSS-PL(M) arrive.PST.3PL
'Peša and his associates arrived.'
(Ognyan Darinov, p.c.)

Of the IE languages, Sinhala and Bulgarian have affixal definite articles and the rest lack definite articles, thus conforming to the generalization.[2] As confirmation of (5), note that APls are almost entirely absent from Germanic languages (found only in Afrikaans, Frisian, German, Icelandic and Norwegian according to Daniel & Moravcsik 2013) and totally absent from Romance languages, which overwhelmingly have free-standing definite articles. That such a well-attested phenomenon is a rarity in a subset of IE languages with free-standing definite articles, but is found in many related articleless and affixal article IE languages, strongly suggests that the APl is constrained, in part, by a language's article status. Even more importantly for (5), Afrikaans, Frisian, German and Shughni—the only IE languages with a free-standing definite article and characterized by the World Atlas of Language Structures as having an APl—show the non-plural pattern.[3]

[2] See e.g., Riccardi (2003:605) for Nepali, Erschler (2019:880) for Ossetic and Garland (2006:7) for Sinhala.
[3] For the article status of Shughni, see Mueller (2015:33).

(8) illustrates this with Afrikaans—the AM is the third person plural pronoun and the multiplicative plural is *-s* or *-e*.

(8) a. my suster-**hulle**
my sister-they
'my sister and her family'

b. suster-**s**
sister-PL
'sisters'
(Donaldson 1993:pp.50, 69)

Confirmation of (5) also comes from Margi and Kotoko, two Chadic languages. Margi, an affixal article language (see Hoffman 1963:p.54), shows the plural pattern; both the multiplicative plural and the AM are *-yàr* (9). Kotoko has a free-standing definite article (see Allison 2012:p.59) and, crucially, shows the non-plural pattern—the AM is the third person plural pronoun and the multiplicative plural is *-é* (10).

(9) Bàshir-**yàr** / fá-**yàr**
Bashir-PL / farm-PL
'Bashir and his family' / 'farms'
(Hoffman 1963:pp.57–8)

(10) **en** yá / yá-**é**
3PL mother / mother-PL
'mother & her people' / 'mothers'
(Allison 2012:pp.107, 75)

Alamblak (Sepik) also confirms the generalization. Consider first two articleless Sepik languages, Awtuw and Manambu.[4] In Awtuw (11) the multiplicative plural and the AM are *-wom*; in Manambu (12), the multiplicative plural and the AM are *-bər*. In contrast, Alamblak has a free-standing definite article (see Bruce 1984:p.81) and shows the non-plural pattern—the AM is the third person plural pronoun and the multiplicative plural is *-m* (13).

(11) Altiy-**wom** / yæn-**wom**
Altiy-PL / child-PL
'Altiy and others' / 'children'
(Feldmen 1986:pp.118, 198)

(12) Tanina-**bər** / asay-**bər**
Tanina-PL / father-PL
'Tanina and others' / 'fathers'
(Aikhenvald 2008:pp.130, 132)

(13) Yoni **rëm** / fëh-**m**
Yoni 3PL / pig-PL
'Yoni and his associates' / 'pigs'
(Mauri & Sansó 2017:p.2)
(Bruce 1984:p.74)

Thus, whether or not the multiplicative plural can have a secondary, associative function correlates cross-linguistically with another aspect of the nominal domain, namely the absence of a free-standing definite article.[5] In the next section I offer a new analysis of plural pattern languages, involving head-movement of Number^0, that captures this.

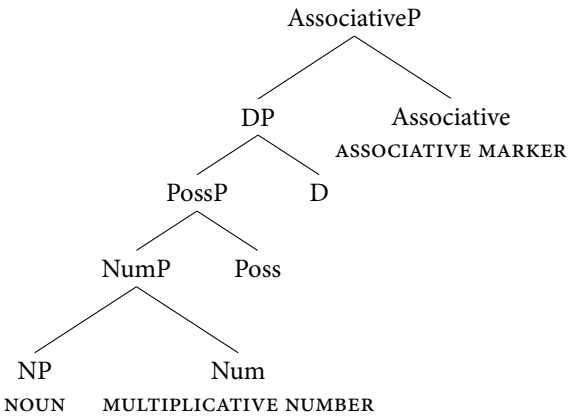
[4]Awtuw has what are called "determiners" (a kinship term, quantifier, possessive NP or pronoun) but not a unique definite article (see Feldmen 1986:116). See Aikhenvald (2008:passim) for Manambu.

[5]Daniel & Moravcsik's (2013) sample of APls lists Fulfulde (Adamawa), Tariana, Mupun, Awtuw, Margi, Lepcha, Bambara, Koyroboro Senni, Sango, Wichí, Gooniyandi, Kanuri, Chamorro, and Malagasy as having free-standing definite articles and showing the plural pattern. If correctly characterized, these languages would be the type of languages I claim do not exist. However, they are mistakenly characterized. Fulfulde, Tariana, Awtuw, Sango, Gooniyandi and Bambara do not have definite articles; see Taylor (1921:21) (Fulfulde), Aikhenvald (2010:21) (Tariana), Feldmen (1986:116) (Awtuw), Pasch (1996:passim) (Sango), McGregor (1990:passim) (Gooniyandi), Bird et al. (1977:10) (Bambara). Margi, Lepcha and Koyraboro Senni have affixal articles; see Hoffman (1963:54) (Margi), Plaisier (2006:55) (Lepcha), Heath (1999:127) (Koyraboro Senni). See the Appendix for supplementary material where some of these cases are discussed in more detail. Kanuri and Wichí use the collective morpheme as the AM, not the multiplicative plural (they are also articleless); see Hutchinson (1981:208) (Kanuri), Terraza & Baito (2014:214) (Wichí). The Chamorro APl is a prefix *ha-* and proper names require the article *Si*: *Si ha-Pedro* 'Pedro and friends' (Safford 1903:299,304). The multiplicative plural is a word, *siha* (Safford 1903:302). Although the two are homophonous, they are not the same element. Malagasy and Mupun nouns do not inflect for plurality (they use plural demonstratives with uninflected nouns), hence are irrelevant to (5).

3 THE NEW ANALYSIS: DERIVING THE PLURAL PATTERN

Previous work on APls has argued that the AM realizes the head of a distinct functional projection (FP) in the nominal spine (14) (e.g., Li 1999, Nakanishi & Ritter 2008, Görgülü 2011, Biswas 2014, Cinque 2018, Dekány 2021). I call this FP AssociativeP. As (14) shows, AssociativeP is considered one of, if not the, highest phrase in the nominal spine. One reason for this is that the only affixes known to follow the AM, and thus be farther from the root noun than the AM (Baker 1985), are Case/topic markers. (15) shows locative case following the AM *-lAr* in Turkish (a plural pattern language).

(14)



(15) Ahmet abla-m-lar-**la** tanisti
Ahmet elder.sister-1SG.POSS-PL-LOC meet
'Ahmet met with my elder sister and her friends.' (Burak Oney, p.c)

(15) illustrates another reason the AM is thought to be especially high: while the multiplicative plural *-lAr* precedes possessor agreement morphology (*abla-**lar**-im*, 'my elder sisters'), the AM *-lAr* in (15) follows it. This is expected if multiplicative *-lAr* heads NumP—which is closer to the root than Poss^0—but associative *-lAr* heads AssociativeP.

Also relevant is that the AM combines with individuals (referring expressions of type e) rather than properties (predicates of type <e,t>) (see e.g., Nakanishi & Tomioka 2004, Smith 2020). Assuming that an object of type e corresponds to the highest projection in the noun phrase, Associative^0 must combine with this projection.[6] Tomioka (2021) offers the semantic denotation of AMs in (16). (16) says that given an individual *x* of type e and a maximal plural entity Y, if the individual *x* is a subset of the plural entity and for all individuals *y*, the plural entity contains *y* (and where *y* is not *x*), then *y* stands in a relation R with *x*. This R relation is one of contextually salient association. Thus, when the AM combines with a proper name e.g., *John*, the associative plural is interpreted as the maximal plural entity Y such that it contains John and all non-John persons in Y have the relation R with John. In other words, John and his associates.[7]

(16) $[\![\text{PL}_{\text{Associative}}]\!] = \lambda x_e.\iota Y\ [x<Y\ \&\ \forall y\ [y\leq Y\ \&\ y\neq x] \rightarrow R(x)(y)]$

Under the approaches cited above (14), the structure of an APl in a non-plural pattern language (e.g., Malayalam (1)) is (17-a) and in a plural pattern language (e.g., Japanese (3)) is (17-b), where the respective AMs realize the head of AssociativeP (note that

[6] This projection can be DP, but below I assume that languages without definite articles lack DP (Bošković 2008). In this case, a DP-less noun becomes type e through type-shifting (Chierchia 1998). See Section 3.1.

[7] There are other semantic analyses of associative number. One influential idea is that associative plurality and 1/2P pronominal plurality should be unified. This is because 1PL and, to an extent, 2PL are not plural in the way 3PL is, but instead pick out a singular speaker/addressee *and others* (e.g. Cysouw 2003). This has been termed "group plural". For analyses of associative plurals that appeal to pronominal/group plurality, see e.g. Moravcsik (1994), Corbett (2000), Kratzer (2009), Vassilieva (2005).

both languages are head final). Crucially, this means the AM *-tachi* in (17-b) is distinct from—but syncretic with— multiplicative *-tachi* that expones a plural Num^{o} head (17-c).

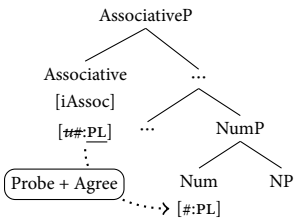
(17) a. [$_{\text{AssociativeP}}$ [$_{\text{DP}}$ [$_{\text{NumP}}$ [$_{\text{NP}}$ **Raaman**] Num **Ø**] D] Assoc **okke**]
= 'Raaman and his associates'

b. [$_{\text{AssociativeP}}$ [$_{\text{DP}}$ [$_{\text{NumP}}$ [$_{\text{NP}}$ **Mika**] Num **Ø**] D] Assoc **-tachi**]
= 'Mika and her associates'

c. [$_{\text{DP}}$ [$_{\text{NumP}}$ [$_{\text{NP}}$ **Mika**] Num **-tachi**] D] = 'Multiple people named Mika'

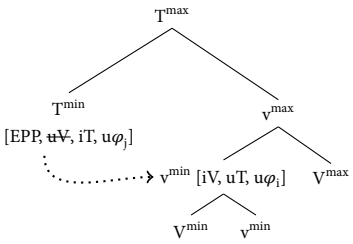
This paper argues against the idea that the multiplicative plural and the AM in plural pattern languages are distinct. Instead, I propose that the AM is the realization of Num^{o} in a higher position—in all plural pattern languages, Num^{o} incorporates into Associative^{o}. This movement is triggered by an unvalued number feature ([#]) on Associative^{o}. [u#:__] probes for a matching valued [#] feature, finding it on Num^{o} (18). Following e.g., Nevins (2007), Ackema & Neeleman (2019), I assume that non-singular numbers are featurally represented on Num^{o} but that singular is the absence of number features.

(18)

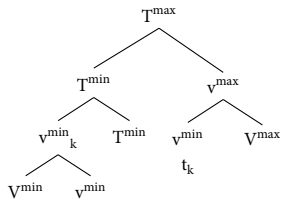


I adopt Roberts's (2010) approach to head movement: X^{o} moves to Y^{o} iff X^{o} is a deficient goal (a goal whose formal features are a proper subset of the probe's formal features). To illustrate, consider (19-a) involving *v*-V to T movement—*v* bears [iV], [*u*T] and [*uφ*] features and T bears [*u*V], [iT], [*uφ*] and an EPP feature. [*u*V] on T probes for a goal, finding [iV] on *v* (19-a). Because *v* is a deficient goal, *v* incorporates into T (19-b).[8]

(19) a.



b.



Returning to the derivation of the APl in (18), Associative^{o} bears a categorial feature [iAssoc] and [u#:__], and Num^{o} bears its categorial feature [#]. [u#:__] on Associative^{o} probes and is valued by [#:PL] on Num^{o}. Importantly, Num^{o} is a deficient goal and thus incorporates into Associative^{o}. The syntactic representation of a plural pattern APl under this approach is (20), illustrated with Japanese; the AM is not *syncretic* with the exponent of Num, the AM *is* the exponent of Num inside a complex head (cf. (17-b)).

(20) [$_{\text{AssociativeP}}$ [$_{\text{DP}}$ [$_{\text{NumP}}$ [$_{\text{NP}}$ **Mika**] t_i] D] Assoc + Num$_i$ **-tachi**]

Note that this approach is compatible with Tomioka's (2021) semantic analysis, where (16) is the denotation of Associative^{o}. Japanese *-tachi* does not have two denotations—additive and associative (this is what Tomioka assumes)—but rather Num^{o} has one denotation and Associative^{o} has another. Crucially, because Num^{o} has incorporated into Associative^{o} in syntax, and because it is the morphological realization of the complex Associative head, from this position Num^{o} is interpreted associatively. That is, Agree

[8]Languages without v-V to T movement do not have a [uV] feature on T according to Roberts (2010).

(without movement) is not enough. For the plural marker to carry associative semantics it must have incorporated into Associative°.[9]

In non-plural pattern languages, I assume the AM is base-generated in Associative° in line with Cinque (2018). Thus, the syntactic derivation for e.g. Malayalam is still (17-a), where the AM *okke* is base-generated in the head of AssociativeP. The next section shows how a movement-based approach to the plural pattern deduces the typological generalization that such languages always lack free-standing definite articles.

3.1 DEDUCING THE GENERALIZATION: THE NP/DP TYPOLOGY

I have proposed that the plural pattern involves incorporation of Num° into Associative° under Agree. Understanding how this rules out the plural pattern in languages with free-standing definite articles requires another typological generalization established by Bošković (2008, 2012, 2016) regarding languages with and without articles:

(21) **The NP/DP parameter**
Languages with definite articles project DP but articleless languages lack it.

(21) aims to capture the fact that languages with definite articles and articleless languages have different syntactic/semantic properties (some are given in (22)). That is, the absence of a definite article is not simply a PF phenomenon (i.e., a null D), since PF differences shouldn't have syntactic/semantic effects.[10]

(22) a. Only languages **with** articles allow the majority reading of MOST.
b. Only languages **without** articles may allow scrambling.
c. Only languages **with** articles may allow clitic doubling.
d. Only languages **without** articles have obligatory numeral classifier systems.

According to the NP/DP parameter, languages with definite articles project DP between Associative° and Num° (23-a) while articleless languages do not (23-b). Following Danon (2011), I also assume D bears a complete set of valued ϕ-features.

(23) a. $[_{\text{AssociativeP}}\ [_{\text{DP}}\ [_{\text{NumP}}\ [_{\text{NP}}\ \text{N}_{[\text{GEN:VAL}]}]\ \text{Num}_{[\#:\text{VAL}]}]\ \text{D}_{[\phi:\pi/\#/\text{GEN:VAL}]}]\ \text{Assoc}_{[\text{iAssoc}][\text{u}\#:\_]}]]$
b. $[_{\text{AssociativeP}}\ [_{\text{NumP}}\ [_{\text{NP}}\ \text{N}_{[\text{GEN:VAL}]}]\ \text{Num}_{[\#:\text{VAL}]}]\ \text{Assoc}_{[\text{iAssoc}][\text{u}\#:\_]}]]$

Crucially, this means that when D° is projected between Associative° and Num° it is an intervenor for movement: D° is an element of the same structural type as Num° (a head) that c-commands Num° and bears the feature that Associative° attracts ([#]). Moving Num° to Associative° across D° is thus a Relativized Minimality violation (Rizzi 1990).[11]

[9] While this analysis essentially requires Associative to select for a plural (or, more specifically, non-singular) nominal in plural pattern languages, this is only because the derivation will crash otherwise. If Associative combines with a singular noun phrase, [u#:__] fails to be valued and the derivation crashes under Full Interpretation (Chomsky 1995) (recall that I assume singular number is the absence of number features).

[10] Conversely, when the definite article is dropped in languages with a free-standing definite article (e.g., English) D is projected but null. For more work on the syntactic and semantic differences between languages with and without definite articles, see Despić (2011, 2019).

[11] There are in fact other Relativized Minimality effects with APls. Recall the general structure of APls in (14) where Poss° is also between Num° and Associative°. Interestingly, APls are possible with singular—but not plural—possessor agreement. This has been shown for Hungarian (Bartos 1999, Moravcsik 2003) and Turkish (Lewis To appear); see (24). Assuming possessor agreement is the realization of ϕ-features on the Poss head, under the current approach APls with plural possessor agreement are ruled out because they would involve moving Num° to Associative° over a Poss head bearing a plural [#] feature. On the other hand, in APls with singular possessor agreement, Poss° lacks a [#] feature (Nevins 2007), and movement is possible. Moreover, this is not a semantic issue: in languages without possessor agreement (e.g., Japanese) plural pattern associative plurals with plural possessors are perfectly possible (25).

(24) abla {-m-/*-**miz**-} lar
elder.sister {-1SG.POSS-/-1PL.POSS-} PL
'my/*our elder sister and others'

(25) **boku-tachi** no oneechan-tachi
1P-PL POSS elder.sister-PL
'**our** elder sister and her friends'

Because incorporation of Num^{o} is blocked, the plural pattern is ruled out (recall that the only way to interpret the plural marker associatively is if it incorporates). In articleless languages, which do not project DP, there is no intervenor for Num^{o} movement and the plural pattern obtains.[12] Note that the lack of DP does not affect the semantics of APls. In articleless languages, arguments of type e are generated via a covert type-shifting operation *iota* at LF (Chierchia 1998, Partee 1987, Dayal 2017). This type-shifting operation takes a predicative NP (of type <e,t>) and produces an argument of type e. In order for Associative^{o} to combine with the noun, this type-shifting operation must occur before Associative is merged to avoid a type mismatch. Thus, in an articleless language (e.g., Shiiba [Japonic]), an APl has the LF structure in (26-b): the proper name starts off as type <e,t>, *iota* type-shifts the noun to type e and Associative takes this type e object as its argument.[13]

(26) a. Taroo-domo
Taro-PL
'Taroo and his associates' (Shimoji & Hirosawa 2022:p.300)

b. $[_{\text{AssociativeP}}\ [_{\lambda P}\ [_{\text{NP}}\ \textbf{Taro}]_{<e,t>}\ [\lambda\iota]]]_{e}$ [Assoc + Num -**domo**]]

What about affixal article languages? Recall that affixal article languages pattern with articleless languages in allowing the plural pattern. But according to Bošković's NP/DP parameter these languages project DP, thus they should disallow the plural pattern. Interestingly, it has been shown that affixal article languages can have the syntactic and semantic properties of articleless languages in certain contexts, i.e., as though DP is missing. For example, Pancheva & Tomaszewicz (2012) show that the interpretation of superlatives differs depending on the article status of a language. In languages with free-standing definite articles (e.g., English), superlatives do not have what is called the *Relative Internal Focus* reading (27). Superlatives in articleless languages (e.g., Polish) have it. Crucially, Bulgarian (an affixal article language) can pattern with articleless languages in allowing the RIF reading (28). If the semantic difference between English and Polish is due to the presence/absence of DP (see e.g., Shen 2014) there must also be no DP in (28).

(27) John has the most albums by U2.
≠ John has more albums by U2 than by any other band. *RIF

(28) Ivan ima naj-mnogo albumi ot U2.
Ivan has superlative-many albums by U2
= 'Ivan has more albums by U2 than by any other band.' RIF

Crucially, Bulgarian only patterns with articleless languages when the article is dropped, as in (28). When the article is present, Bulgarian disallows the RIF reading (like English).

(29) Ivan ima naj-mnogo-**to** albumi ot U2.
Ivan has superlative-many-the albums by U2
≠ 'Ivan has more albums by U2 than by any other band.' *RIF

Based on this, and a broad range of other cross-linguistic evidence, Talić (2017) argues that affixal article languages do not project DP when the article is absent (see also Dubinsky & Tasseva-Kurktchieva 2014, Oda 2022). Note that although the lack of DP correlates with the absence of the article, the evidence is not (purely) morphological; there are syntactic/semantic effects when the article is dropped, implying that we are not dealing

[12] Num^{o} could also be blocked from moving to Associative^{o} under Chomsky's (2000) Phase Impenetrability Condition, since DP is a phase. Under this approach, Associative^{o} cannot establish an Agree relation with Num^{o} over D^{o} because Num^{o} has been sent to the interfaces (it is in the complement domain of a phase head); without Agree, the conditions for movement in Roberts 2010 are not met.

[13] See e.g., Matushansky (2005), Jambrović (2022) for arguments that proper names start off as predicates.

with a PF phenomenon, i.e., a null D. Returning to APls, we expect an affixal article language to be able to show the plural pattern so long as the article is absent (i.e., so long as there is no DP). This is what we find: (30-a) shows a plural pattern APl in an affixal article language, Lepcha. Since the APl stem is not affixed with the definite article, DP is absent and Num^{o} can incorporate into Associative^{o} (30-b).[14] Recall that the nominal will undergo type-shifting to type e at LF before combining with Associative (cf. (26-b)).

(30) a. Nyímá-**sang**
Nyima-PL
Lepcha
'Nyima and his friends' (Plaisier 2006:p.50)

b. $[_{\text{AssociativeP}}\ [_{\text{NumP}}\ [_{\text{NP}}\ \textbf{Nyima}]\ [t_i]]\ [\text{Assoc} + \text{Num}_i\ \textbf{-sang}]]]]$

Strong confirmation of the current analysis comes from Bulgarian. Recall that Bulgarian APls are morphologically identical to plural possessive adjectives. These adjectives may take the definite affix, even with proper names and some kinship terms (31). However, while (31) allows a genuine possessive reading, it does not have an APl interpretation.

(31) Pešovi-**te** oti-do-ha na ribo-lov.
Peša.POSS.PL-DEF go-PST-3PL to fish-hunt
a. 'Those belonging to Peša [his friends/family] went fishing' POSS
b. # 'Peša and his friends went fishing.' # APL
(Daniel 2004, I. Derzhanski p.c.)

In other words, the definite affix in (31) blocks the APl reading. This is expected if DP plays a crucial role in (dis)allowing the plural pattern: in articleless languages the absence of DP makes the plural pattern possible; in affixal article languages, the plural pattern is possible when DP is absent ((30-a), (7)) but not when it is present (31). Moreover, that we see this blocking in Bulgarian suggests that South Slavic APls should be treated as plural pattern languages akin to Japanese. That is, they also involve Num-to-Associative movement (if they didn't, we would not expect the presence of DP to block the associative interpretation).

The next section considers South Slavic APls in closer detail and shows that APls and genuine possessives possess differences indicative of distinct syntactic derivations. It is then argued that the behavior of APls in these languages can be accounted for if they involve Num-to-Associative movement as other plural pattern languages do.

4 A CLOSER LOOK AT SOUTH SLAVIC APLS

APls in Bulgarian, Slovenian and Serbo-Croatian (SC) are shown in (32), and involve the plural possessive marker *-ovi*.[15]

(32) a. **Pešovi** oti-do-ha na ribo-lov.
Peša.POSS.PL.M go-PST-3PL to fish-hunt
'Peša and his friends went fishing.' (Bulgarian)

b. **Lankotovi** so šli na ribo-lov.
Lanko.POSS.NOM.PL.M AUX.3PL went.M.PL on fish-hunt

[14] A reviewer points out that there is a prediction here: when an affixal article is present the associative plural meaning should be blocked. Unfortunately, this is hard to test because the article rarely appears on nouns that make associative plurals (i.e., proper names, kinship terms). However, there are four languages where this is testable: Bulgarian, Hungarian, Mandinka and Koyraboro Senni. It turns out that for Bulgarian this prediction is borne out (see immediately below), but for the three other languages it is not. I leave it for future work to determine whether or not these languages are indeed real counterexamples to my generalization, or whether there are additional factors at play.

[15] Unless otherwise stated, all Bulgarian examples and judgments are due to Ognyan Darinov, all Slovenian examples and judgments are due to Adrian Stegovec and all Serbo-Croatian examples and judgments are due to Andrija Petrović.

'Lanko and his family/friends went fishing.' (Slovenian)

c. **Markovi** su išli na ribo-lov.
Marko.POSS.NOM.PL.M AUX.3PL went.M.PL on fish-hunt.
'Marko and his family/friends went fishing.' (SC)

A basic nominal plural cannot be used associatively in these languages.

(33) Pétarc-**i**
Petar-PL
'Multiple people called Petar' / *'Petar and his associates' (Bulgarian)

Section 4.1 shows that these APls should receive an incorporation analysis like APls in e.g., Japanese, where there is no possessive morphology. I adopt the view in Daniel (2004) that these APls developed from the genuine possessive over time and are now grammaticalized as possessive-like APls. Section 4.2 turns to the syntactic properties of APls in South Slavic and shows that their behavior is accounted for under the incorporation analysis.

4.1 POSSESSIVE-LIKE APLS

APls in South Slavic are identical to the adnominal possessive (34) and what Daniel (2004) calls the headless possessive, where either the noun is elided (if there is a linguistic antecedent (35)) or simply null (where the interpretation of the noun is determined pragmatically (36)). I illustrate each type with one language for space reasons.

(34) **Pešovi** kotki
Peša.POSS.PL cat.PL
'Peša's cats' (Bulgarian)

(35) Jaz sem nahranil Petrove pse, ti pa
I AUX.1SG fed.M.SG Peter.POSS.ACC.PL dog.ACC.PL, you PA
Lankotove.
Lanko.POSS.ACC.PL
'I fed Peter's dogs and you fed Lanko's' (Slovenian)

(36) Saznaj da li **Markovi** dolaze
find.out(IMP) that if Marko.POSS.NOM.PL arrive.3PL
'Find out if Marko's family are coming.' (Serbo-Croatian)

But APls and genuine possessives do show syntactic differences. First, Bulgarian genuine possessives, but not APls, can be suffixed with the definite article.

(37) Pešovi-**te** oti-do-ha na ribo-lov.
Peša.POSS.PL-DEF.PL go-PST-3PL to fish-hunt
a. * 'Peša and his friends went fishing.' *APL
b. 'Those belonging to Peša [his friends/family] went fishing' POSS

Second, Slovenian—a language with dual and plural multiplicative number—has both dual and plural genuine possessives (38). However, only the plural possessive has an APl reading; the dual possessive does not (39).

(38) Lankotov**a** prijatelja / Lankotov**i** prijatelji
Lanko.POSS.NOM.DU friend.NOM.DU / Lanko.POSS.NOM.PL friend.NOM.PL
'Lanko's two friends' / 'Lanko's friends'

(39) Lankotov**a** sta šla na ribo-lov.
Lanko.POSS.NOM.DU AUX.3DU went.M.DU on fish-hunt
*'Lanko and his friend went fishing.' (adapted from Vassilieva 2005)

Third, only genuine possessives can be preceded by cardinal numerals (cf. (40) and (41)).

(40) **tri** Markova brata
three Marko brother.GEN.SG
'three of Marko's brothers'

(41) **tri** Markova
three Marko
*'Marko & his associates, all three' (SC)

However, cardinal numerals can follow the APl in Bulgarian and Slovenian (42), and collective numerals can precede the APl in Slovenian and SC (43) (Vassilieva 2005).[16]

(42) Pešovi **trima** (B) / Lankotovi **trije** (S)
Peša.POSS.PL three / Lanko.POSS.NOM.PL three
'{Peša / Lanko} and his associates, all three.'

(43) **troje** Lankotovih (S) / **troje** Markovih (SC)
three.COLL Lanko.POSS.GEN.PL / three.COLL Marko.POSS.GEN.PL
'{Lanko / Marko} and his family/friends, all three.'

Based on these syntactic and semantic differences, I claim that APls in South Slavic are derivationally distinct from genuine headless possessives. Headless possessives have the structure in (44). I assume that the possessor is a denominal adjective (it involves adjectivizing morphology on a nominal stem; Corbett 1987) that agrees in number with a null noun. I also assume that the possessive adjective is substantive (it is semantically a noun; Daniel 2004, Bošković 2013). (44) depicts the structure after concatenation of the nominal stem and the adjectivizing morphology.

(44) $[_{\text{NumP}}$ Num [#:PL] $[_{\text{NP}}$ $[_{\text{AP}}$ A **~~-ovi~~** $[_{\text{NP}}$ **Pešovi**]] $[_{\text{NP}}$ $\emptyset_{\text{PL}}$]]]

Following Daniel (2004), I assume that the APl is derived from the headless possessive in (44). According to Daniel the path to a possessive-like APl is (45) (illustrated with Slovenian): a language begins with an adnominal possessive (a); the possessive then acquires a headless (substantivized) usage that picks out a contextually determined noun (b); the headless possessive undergoes a "shift" (Daniel's term) to the APl (c).

(45)
(a) **Lankotovi** psi ⇒ (b) **Lankotovi** $\emptyset_{\text{PL}}$ ⇒ (c) **Lankotovi**
Lanko.POSS.PL dog.PL Lanko.POSS.PL $\emptyset_{\text{PL}}$ Lanko.POSS.PL
'Lanko's dogs' 'Lanko's [e.g. family]' 'Lanko and his family'

I propose that this "shift" between (b) and (c) in (45) is the development of AssociativeP, and that after this development Num^{o} incorporates into Associative^{o}. This movement in the syntax means that Num^{o} does not combine directly with the (null) noun at LF, and thus the noun is not interpreted as plural. Given that the possessive adjective shows concord agreement with the null noun—and the interpretation is that there is a (pragmatically salient) plurality X (e.g. family/friends) in a possessive relation to Y (e.g. Lanko in (45))—if the null noun is not interpreted as plural there is no longer any plurality X that Y could be in a possessive relation to. In other words, the genuine possessive reading is lost.

I propose that incorporation of Num^{o} into Associative^{o}—and the subsequent loss of the genuine possessive reading—results in reanalysis of the adjectivizing/possessive morphology as the exponent of the (complex) Associative head. The adjectivizing head is null. In (46), and all examples hereafter, I depict the structure after concatenation of the nominal stem and the AM.

(46) $[_{\text{AssociativeP}}$ Associative + Num_{i} **~~-ovi~~** $[_{\text{NumP}}$ t_{i} $[_{\text{NP}}$ $[_{\text{AP}}$ A $\emptyset$ $[_{\text{NP}}$ **Pešovi**]] [NP $\emptyset_{\text{SG}}$]]]

[16]Both SC speakers I asked did not like the cardinal numeral following the APl. I will leave this issue aside.

A reanalysis approach is plausible on semantic grounds, given the similarity in meaning between *Peter's family* and *Peter and his family*. Both involve relating a nominal stem to a person or people who are socially related to the stem. A reanalysis approach can also account for the obligatory inclusion of the nominal stem. After reanalysis, the only overt material in the possessive adjective is the nominal stem, which in (46) is a proper noun. Recall, too, that the AP is substantive—it behaves semantically like a noun. Taken together, this means that the interpretation of the AP will be identical to the interpretation of the nominal stem, i.e. a proper noun. Associative^{o} then combines with the substantivized AP in the same way it would combine with a simple NP of type e, generating the right semantics—"Peter and his family'.[17] Finally, reanalysis of plural possessive morphology in headless possessives as an AM involves a process of grammaticalization whereby adjectival structure loses morphological exponence. Since only nominal material is exponed, one expected consequence of this may be further reanalysis of the substantivized adjective itself as a simple NP. The AM may then reflect that change by being realized as basic nominal plural inflection. Lezgian and Hungarian are potential examples of this change. In Lezgian, headless genitive plurals have an associative use (47). However, Daniel (2004) also notes that the basic nominal plural can be used associatively (i.e., *mothers* meaning *mother and those with her*; no examples are provided), and the genitive plural is primarily possessive. This may suggest a change in progress whereby the nominal stem in (47) ('dide') is reanalyzed as a simple NP, and thus the nominal plural is used as the AM.

(47) dide-**d**-**bur**
mother-GEN-SUBS.PL
'mother and those with her' (Haspelmath 1993:p.79)

In Standard Hungarian the AM is *-ék* (48). Interestingly, *-é* is also suffixed to possessors when the possessum is null (i.e., it marks headless possessives) (49).[18] Daniel takes this as evidence that Hungarian APls are also historically derived from headless possessives.

(48) János-**ék** elbújtak
John-APL hid.PST.3PL
'John and them hid.'

(49) János-**é**-i elbújtak
John-POSS-PL hid.PST.3PL
'Those of John hid.' (Dekány 2021:p.229)

However, in the Transdanubian dialects Örség, Hetés and Southwest Göcsej, the AM is the basic nominal plural *-k* (50). Rather than posit two different analyses of APls for Standard Hungarian and the Transdanubian dialects, on a reanalysis account these dialects have just undergone an additional process of reanalysis that Standard Hungarian has not. In the dialectal varieties, the possessor has been reanalyzed as a simple NP.

(50) Kovács Pistá-**k**-ot nëm híták meg.
Kovács Pistá-PL-ACC not invite.PST.DEF.OBJ.3PL PRT
'Kovács Pistá and his family were not invited.' (Dekány 2021:p.232)

To sum up, this section has shown that possessive-like APls in South Slavic differ syntactically from genuine headless possessives in a number of ways. I proposed that these syntactic differences should reflect different syntactic structures—possessive-like APls contain an Associative Phrase and involve Num^{o} to Associative^{o} movement. This movement renders the genuine possessive reading unavailable, leading to reanalysis of

[17] Note too that the interpretation of the APl can never be 'Peter's family and their associates' because the reading 'Peter's family' is not contained inside the APl.

[18] There is debate as to whether *é* in the AM is the possessive suffix (see Dekány 2021 for arguments for and against and relevant references). On a reanalysis account, the *-é* in the AM is historically derived from the possessive, but it is not the same as the possessive. Note that, following Oda (2022), MacWhinney (1976), Bošković (2023), I assume that Hungarian is an affixal (more precisely prefixal) article language; see the works in question for relevant evidence.

the plural possessive morphology as an AM. The next section shows how this analysis accounts for the syntactic differences between APls and genuine possessives.

4.2 NUM-TO-ASSOCIATIVE MOVEMENT IN SOUTH SLAVIC APLS

The three syntactic differences between genuine possessives and APls in South Slavic, to be explained in this section, are given again below.

(i) Bulgarian genuine possessives, but not APls, can appear with the definite suffix.

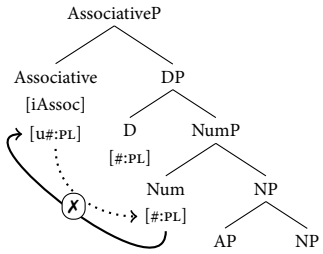
(ii) Slovenian genuine possessives can be plural or dual, but there are only APls.

(iii) Cardinal numerals can precede genuine possessives but not APls; collective numerals can precede APls in Slovenian and Serbo-Croatian.

I begin with (i). The definite suffix in Bulgarian blocks an APl interpretation because Num^{o} cannot move across D^{o} (which has a plural [#] feature) to incorporate into Associative^{o}. Without incorporation, there is no reanalysis of the possessive plural marker as associative. (51) is then explained as a Relativized Minimality violation (52).

(51) Pešovi-**te**
Peša.POSS.PL-DEF.PL
≠ 'Peša and his friends"

(52)



Turning to (ii), genuine possessives in Slovenian can be inflected for both dual and plural number, but there is no associative dual (ADu).

(53) Lankot**ova** prijatelja / Lankot**ova** sta prišla
Lanko.POSS.NOM.DU friend.NOM.DU / Lanko.POSS.NOM.DU AUX.3DU arrive.M.DU
'Lanko's two friends' / *'Lanko and his friend arrived'

Note that ADus are attested. Khanty (54) and Central Alaskan Yupik (55) have ADus and APls; Comanche has an ADu (56), but Charney (1993) does not mention an APl.[19]

(54) jəɣ-s-**äɣən** luw juɣ wər-tä mən-ɣən
father-COLL-DU oar wood do-INF go-PST0.3DU
'A father and his son went to make an oar.' (Filchenko 2007:p.79)

(55) cuna-nku-**k** ayag-tu-k
Chuna-ASSOC-ABS.DU go-INDIC-3.DU
'Chuna and his friend left.' (Corbett 2000:p.108)

(56) Francine-**nikwih**-tsa
Francine-DU-TOP
'Francine and [her husband] Phil' (Charney 1993:p.52)

[19] Both Khanty and Central Alaskan Yupik ADus involve not just the dual marker (*-ɣən* and *-k* respectively) but other morphology too— *-s-* in Khanty and *-nku-* in Central Alaskan Yupik. These morphemes are also present in the language's APls. I take these morphemes to be the overt realization of the [iAssoc] feature in the complex Associative head (see also Dekány 2021:p.234). Having morphologically complex AMs is not uncommon cross-linguistically, and is in fact expected on the current incorporation analysis.

Returning now to Slovenian, we can capture languages that have both plural and dual multiplicative number but only one associative number by adopting a theory of Relativized Probing (Preminger 2011). The probe [u#:__] on Associative^0 may be looking for any non-singular number value so that in a language with both [#:PL] and [#:DU], [u#:__] can be valued as [PL] or [DU] (e.g., Khanty and Central Alaskan Yupik). In contrast, [u#:__] may be relativized to either [#:PL] or [#:DU], such that only one of these values on Num^0 is capable of valuing [u#:__]. Thus, the probe in Comanche may be relativized to [#:DU] and the probe in Slovenian is relativized to [#:PL].[20]

Lastly, genuine possessives can be modified by a preceding cardinal but APls cannot be. (57) illustrates this for Bulgarian. I will refer to the ungrammatical cardinal numeral > noun order as *cardinal > noun.[21]

(57) { **trima** Pešovi bratja / ***trima** Pešovi }
three Peša.POSS.NOM.PL brothers / *three Peša.POSS.NOM.PL
prisitgnaxa
arrive.PST.3PL
{ 'three of Peša's brothers / *Peša and his family/friends, all three } arrived.'

I propose that a cardinal cannot precede an APl because of conflicting requirements on Num^0. Following Borer (2005), I assume that the head that expones multiplicative plural (i.e., Num^0) is also responsible for dividing the extension of the predicate NP, making the noun countable. Thus, in English *apples*, N combines with Num^0 at LF to create an infinite number of divisions in the extension of *apple*. This divided mass can be used in its bare form or combine with a counter to pick out a fixed number of the divisions (e.g., *three/many apples*). Crucially, counters cannot combine with undivided nouns, i.e., nouns that have not combined with Num^0 in the scope of the cardinal. With this in mind, consider the structure of a plural pattern APl argued for in this paper—where Num^0 has incorporated into Associative^0—when there is also a cardinal numeral, deriving the (ungrammatical) structure in (58). Because Num^0 has incorporated into Associative^0, it does not combine directly with the noun at LF and the NP in the scope of the cardinal is uncountable.

(58) *$[_{\text{AssociativeP}}$ Assoc + Num$_i$ ~~**-ovi**~~ $[_{\#P}$ **trima** $[_{\text{NumP}}$ t_i $[_{\text{NP-COUNT}}$ $[_{\text{AP}}$ A Ø $[_{\text{NP}}$ **Pešovi**] $[_{\text{NP}}$ Ø]]]]]

Thus, (58) reveals a conflict: cardinal numerals must combine with a count noun, which requires Num^0 to combine directly with the noun (it must be in its base-position). At the same time, APls require Num^0 to incorporate into Associative^0, above the numeral. Since Num^0 cannot be interpreted in both positions simultaneously, APls preceded by cardinal numerals are ungrammatical. However, recall that cardinal numerals can follow an APl.

(59) Pešovi **trima** (B) / Lankotovi **trije** (S)
Peša.POSS.PL three / Lanko.POSS.NOM.PL three
'{Peša / Lanko} and his associates, all three'

Relevant here is that Jiang (2017) notes that when an APl is followed by a numeral in Mandarin Chinese, the numeral can be followed by another noun denoting 'person'.

[20] A reviewer suggests that there might be a restriction against ADus that are syncretic with dual possessive markers, since this pattern is not found in the survey. While this is true, there are only 4 languages in the survey that form associative constructions with possessive nouns (Bulgarian, Slovenian, Serbo-Croatian and Lezgian), and of those languages only Slovenian has dual number. In order to posit a restriction we would need to find more languages that generate associatives with possessive nouns that also have dual number, and see if they allow an associative dual.

[21] The South Slavic languages share the **cardinal > noun* order with APls in a number of other languages, e.g., Chinese (Li 1999) and Hungarian (Dekány 2021).

(60) wo qing **XiaoQiang-men san-ge (ren)** chifan
I invite XiaoQiang-PL three-CLF (person) eat
'I invited XiaoQiang and two others (in the group) for a meal.' (Li 1999:p.80)

This suggests that there are two N slots in the noun > cardinal order. Following Jiang, I propose that in the noun > cardinal order in South Slavic, the cardinal is an appositive modifier, i.e., it projects its own noun phrase. This is shown in (61) for Bulgarian; the numeral is contained inside a separate nominal domain that is adjoined to the APl.

(61) $[_{\text{AssociativeP}}$ Assoc + Num$_i$ **~~-ovi~~** $[_{\text{NumP}}$ t$_i$ $[_{\text{NP}}$ $[_{\text{AP}}$ A Ø $[_{\text{NP}}$ **Pešovi**]] $[_{\text{NP}}$ Ø]]]] $\boxed{[_{\#\text{P}}$ # **trima** $[_{\text{NP}}$ Ø]]]

I offer two more pieces of evidence that we are dealing with an appositive modifier in the noun > cardinal order in South Slavic. First, post-nominal appositive cardinals in Mandarin are non-restrictive and maximal. Jiang shows that (62-a) is acceptable if there is a total of 3 people, but unacceptable if it refers to 3 people out of a salient group of e.g., 5. The same is true in South Slavic, illustrated with Slovenian (62-b) (see also Vassilieva 2005:p.39-40).

(62) a. XiaoQiang-men san-ge
XiaoQiang-PL three-CLF
'XiaoQiang & the others, {three in total / *three out of a larger group}'
b. Lankotovi trije
Lanko.POSS.NOM.PL three
'Lanko and his associates, {three in total / *three out of a larger group}'

Second, the definite suffix can surface on the post-nominal cardinal in Bulgarian.

(63) Pešovi (i) trima-**ta**
Peša.POSS.PL (all) three-DEF
'Peša and his associates, (all) three'

We saw earlier that the definite suffix is unacceptable on a Bulgarian APl, and it was argued that this is because D^o blocks Num^o from incorporating into Associative^o. If the noun > cardinal order in (63) involved a single DP, Num^o must have illicitly moved over D^o to generate the APl interpretation. This problem does not arise if (63) involves an appositive DP adjoined to a DP-less APl (64). In this configuration, Num^o does not cross D^o when it incorporates into Associative^o.

(64) $[_{\text{AssocP}}$ Assoc + Num$_i$ **~~-ovi~~** $[_{\text{NumP}}$ t$_i$ $[_{\text{NP}}$ $[_{\text{AP}}$ A Ø $[_{\text{NP}}$ **Pešovi**]] $[_{\text{NP}}$ Ø]]] $\boxed{[_{\text{DP}}$ D $[_{\#\text{P}}$ # **trima-ta** $[_{\text{NP}}$ Ø]]]

Finally, collective numerals in Slovenian and Serbo-Croatian (SC) may precede an APl.

(65) **troje** Lankotovih (S) / **troje** Markovih (SC)
three.COLL Lanko.POSS.GEN.PL / three.COLL Marko.POSS.GEN.PL
'{Lanko / Marko} and his family/friends, all three'

I propose that the collective numerals in (65) are not modifiers of the APl like cardinals (which, recall, result in conflicting requirements on Num^o), but instead head their own NP that takes the APl as its complement (66). Under this view, Num^o remains in the scope of the numeral even when it has incorporated into Associative^o—that is, the collective numeral takes as its complement a countable nominal expression.

(66) $[_{\text{NP}}$ N **troje** $[_{\textbf{AssocP}}$ Assoc + Num$_i$ **~~-ovih~~** $[_{\text{NumP}}$ t$_i$ $[_{\text{NP}}$ $[_{\text{AP}}$ A Ø $[_{\text{NP}}$ **Lankotovih**]] $[_{\text{NP}}$ Ø]]]]]

Two empirical observations support this analysis. The first, only observable in SC, concerns the case and number that the collective numeral assigns to the noun it modifies.[22]

[22]In Slovenian, the cardinals 2 and 3 are adjectival and do not affect the inflection on the noun; the cardinal

While the cardinals 2–4 assign genitive singular (67-a), collective numerals and clear nominal numerals assign genitive plural (67-b). In other words, collective numerals pattern with clear nominal numerals in the case and number that they assign the noun.

(67) a. tri studenta
three student.GEN.SG
'three students'

b. {troje / trojica} studenata
{three.COLL / three.NOUN} student.GEN.PL
'three students'

Second, demonstratives show concord agreement with the numeral when it is collective or nominal, but with the noun when it is cardinal. (68)–(70) illustrate this (data from Adrian Stegovec, p.c.). In (68) the demonstrative modifies (and thus φ-Agrees) with the head noun *dog*. In contrast, demonstratives preceding clear nominal numerals modify (and thus φ-Agree with) the numeral (69). Crucially, the demonstrative in (70) can φ-Agree with the collective numeral—**not** the noun *psov*, 'dog'—suggesting that the collective numeral is itself a noun and it is with this noun that the demonstrative agrees. The same pattern is observed in SC with 'five'.

(68) **teh** pet **psov**
those.GEN.PL five dogs.GEN.PL
'those five dogs'

(69) **ta** **peterica** psov
those.NOM.SG.(F) five.NOM.SG.(F) dogs.GEN.PL
'those five dogs'

(70) **to** **petero** psov
those.NOM.SG.(N) five.COLL dogs.GEN.PL
'those five dogs'

Thus, if collective numerals in Slovenian and SC are nouns that take the APl as their complement (66), Num^0 follows the numeral even when it has incorporated into Associative^0. This is crucial for the requirement that numerals combine with countable entities.

5 CONCLUSIONS

This paper has argued for a new analysis of APl constructions in so-called plural pattern languages—languages whose AM looks like the multiplicative plural. I proposed that plural pattern languages do not involve a dedicated (syncretic) AM but instead involve incorporation of Num^0 to the head of an Associative Phrase, where the plural marker is realized and, as part of the complex Associative head, interpreted associatively. This analysis was driven by a novel typological generalization about plural pattern languages: they either lack definite articles or have affixal definite articles. I then argued that the South Slavic languages—which involve plural possessive forms in their APls—should also be analyzed as plural pattern languages, i.e., also involve Num–Associative movement. This was motivated by a number of syntactic properties of South Slavic APls—the obligatory absence of the definite article in Bulgarian APls, the lack of an associative dual in Slovenian, and the distribution of numerals. This unification of the South Slavic languages with languages like Japanese (languages that do not involve possessive morphology in their APls) broadens the typological picture of plural pattern languages, meaning that the empirical predictions of the proposed analysis can be tested on a more diverse sample of languages—something I leave to future research.

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numerals above 3, collective numerals and nominal numerals all assign genitive plural, and thus no distinction between the three can be drawn (see Stegovec 2022).

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ABBREVIATIONS

1	first person	LOC	locative
3	third person	M	masculine
ABS	absolutive	N	neuter
ACC	accusative	NOM	nominative
APL	associative plural	NUM	Number
ASSOC	associative	OBJ	object
CLF	classifier	PL	plural
COLL	collective	POSS	possessive
DEF	definite	PRT	particle
DU	dual	PST	past
F	feminine	SC	Serbo-Croatian
GEN	genitive	SG	singular
IMP	imperative	SUBS	substantive
INF	infinitive	TOP	topic

APPENDIX

Below is the current language sample of plural pattern languages. The languages that form APls with possessive nouns are Bulgarian, Slovenian, Serbo-Croatian and Lezgian. You can find the list of languages with references—relating to the plural pattern and their article status—and examples on my website: https://sites.google.com/view/rebeccalewis-linguistics/projects/associative-plurals-language-sample

1 Turkic: Bashkir, Chuvash, Crimean Tatar, Gagauz, Karachay-Balkar, Kazakh, Kumyk, Mishar Tatar, Tofa, Turkish, Uyghur, Uzbek **2 Tungusic:** Evenki, Manchu, Nanai, Udihe **3 Mongolic** Khalka **4 East Caucasian:** Aghul, Archi, Bagvalal, Lak, Lezgian, Rutul **3 Niger-Congo:** Akan, Dagbani, (Eastern) Dan, Ewe, Fulfulde (Adamara), Luganda, Luvale, Sango, Sesotho, Tswana, Yoruba, Zulu **6 Afro-Asiatic:** Margi **7 Tacanan:** Araona, Cavieña, Ese-Ejja **8 Chukotko-Kamchatkan:** Chukchi, Alutor **9 Nadahup:** Hup **10 Sepik:** Awtuw, Manambu **11 Mande:** Bambara, Kpelle, Mandinka **12 Sino-Tibetan** Belhare, Burmese, Chintang, Mandarin Chinese, Chantyal, Hayu, Lahu, Lepcha, Limbu, Magar, Newar (Dolakha), Newar (Kathmandu), Tamang **13 Utu-Aztecan:** Comanche **14 Cariban:** Apalai, Hixkaryana **15 Japonic:** Iheya, Japanese, Kin, Shiiba, Yoron-Ryukyuan **16 Dogon:** Tommo So **17 Salishan:** Kalispel **18 Uralic:** Hungarian, Khanty, Komi-Permyak, Komi-Zyrian, Mari (Hill), Moksha, Nganasan, Udmurt **19 Tucanoan:** Desano, Tucano **20 Kadu:** Krongo **21 Central Sudanic:** Lugbara **22 Indo-European:** Bulgarian, Nepali, Ossetic, Polish, Serbo-Croatian, Sinhala, Slovenian **23 Pama-Nyungan:** Ngiyambaa **24 Arawakan:** Baniwa, Piapoco, Tariana **25 Northwest Caucasian:** Kabardian **26 Tupian:** Urubu-Kaapor **27 Songhay:** Koyraboro Senni **28 Arawan:** Kulina **29 Bunuban:** Gooniyandi **30 Na-Dene:** Koyuokon **31 Eskimo-Aleut:** Central Alaskan Yupik **32 Austronesian:** Mangap-Mbula **33 Austro-Asiatic** Kharia **creoles/pidgins:** Berbice Dutch Creole, Mauritian Creole, Reunion Creole, Tok Pisin **isolates:** Ainu, Nivkh

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