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Traditional view: number is in NumP (Ritter 1987, 1991, Bernstein 1991, Valois 1991, etc.) and involves semantic pluralization (the *-operator)
Recent developments: parametric (Bouchard 2002, Déprez 2005, 2006), a.k.a. distributed number (Wiltschko 2008): for a number of different motivations:
$>\quad$ on NP vs. on DP (Bouchard 2002, Déprez 2005, 2006): in French number is only marked on the determiner, in Creole languages likewise, and only if definite
$>\quad \sqrt{ }$ (Wiltschko 2008): the optional Halkomelem plural marking is cross-categorial and internal to derivational affixes and compounds
> nP (Lowenstamm 2007, Acquaviva 2008, Alexiadou 2011, etc.): "lexical plurals": pluralia tantum nouns, plural of abundance
$>$ DivP \& \#P (Borer 2005, Mathieu 2014): singulatives and measure nouns
> DP (Butler 2012): the optional Yucatec Maya plural marker on conjunctions of singular NPs
$>\quad$ above DP (Sauerland 2003, 2008): mixed agreement
Furthermore, NP-internal number-marking can be:
> manifested on agreeing elements only: Gurr-goni (Green 1995), Manam (Cowper and Hall 2014)
> conditioned by prominence hierarchies: Western Armenian (Sigler 1992, 1996, Donabédian 1993) in function of specificity; Palauan (Josephs 1997), Southern Ute (Oberly 2004), Vera'a (Schnell 2012) in function of animacy; Vai (Welmers 1976) and Mandarin (Lan 2010) in function of humanity, Wambon (de Vries and Vries-Wiersma 1992) for kinship nouns only, Haitian Creole (Déprez 2005, 2006) and Yoruba in function of definiteness (Rowlands 1969:41-42), etc.
$>$ differing for cardinal-containing NPs (Ionin and Matushansky [in press])
The problem that I see: most of the discussion centers on the overt number marker and only one type of plurality: additive plurals
Pluralization as defined by Link 1983: closure of an atomic set (the noun denotation) under sum (yielding the set of all subsets of P excluding the empty set)

$$
\begin{equation*}
\llbracket * \rrbracket=\lambda \mathrm{P} . \wp(\mathrm{P}) \backslash \emptyset \tag{1}
\end{equation*}
$$

This is what should be in $\mathrm{Num}^{0}$
This talk:

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    > plurality with cardinals is not that in (1) for both syntactic and semantic reasons
    \(>\) plural number marking can be triggered by non-additive plurality
    \(>\) plural number marking does not always correspond to semantic plurality
    \(>\) plural is a formal feature
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[^0]Question: is it located on a head?

## 1. NOMINAL NUMBER MARKING IN CARDINAL-CONTAINING NPS

Core finding (Ionin and Matushansky [in press]): number marking below the cardinal does not come from semantic plurality of the constituent the cardinal combines with
Core results: plural morphology below the cardinal results from agreement and the agreement is not with Num ${ }^{0}$
Evidence: lack of plural marking under cardinals

### 1.1. Act I: Hungarian and Turkish

In a number of languages, including Hungarian and Turkish, cardinals obligatorily combine with morphologically singular NPs:
(2) a. Yhdeksän omena-a puto-si maa-han. Finnish, Nelson and Toivonen 2000 nine.NOM apple-SG.PART fall-PAST.3SG earth-ILL Nine apples fell to earth.
b. y tair cath ddu hynny Welsh, Mittendorf and Sadler 2005 the.PL three.F cat.F.SG black.SG that.PL those three black cats
Ionin and Matushansky 2006: cardinals combine with semantically singular NPs

### 1.2. Act II: General number and Western Armenian

Farkas and de Swart 2010, Bale, Gagnon and Khanjian 2011, Bale and Khanjian 2014, etc.: plural can be exclusive or inclusive:
(3) a. $\llbracket p l u r a l \rrbracket=\lambda P \lambda x[x \in \operatorname{Sum} \cup$ Atom $\wedge * P(x)] \quad$ inclusive plural

$$
\text { b. } \quad \text { plural } \rrbracket=\lambda P \lambda x[x \in \operatorname{Sum} \wedge * P(x)] \quad \text { exclusive plural }
$$

The morphologically unmarked NP appearing with a cardinal corresponds to inclusive plural, a.k.a. transnumerality, a.k.a. general number (Corbett 2000, see also Schroeder 1999, Wiese 2003, Acquaviva 2005)
Western Armenian: plural marking optional with numerals
(4) kəsan usanob(-ner) twenty student-PL
twenty students
Bale et al. 2011, Bale and Khanjian 2014: two lexical entries for cardinals, one for inclusive plurals (the surface singular) and the other for exclusive plurals (the surface plural)
In their view Turkish and Hungarian use the unmarked inclusive plural (general number) with cardinals

### 1.3. Act III: Western Armenian and the role of conditioning factors

Big problem: plural marking in Western Armenian is conditioned by specificity (Sigler 1992, 1996, Donabédian 1993):
(5) a. kəsan usanoв kənutenəmə сахове-c-av WA, Sigler 1996:167-168 twenty student exam.ABL.A fail-AOR-3SG There failed an exam twenty students.
b. kəsan usanoк-ner kənutenəmə сахоке-с-an/*сахове-с-ар
twenty student-PL exam.ABL.A fail-AOR-3PL/3SG
Twenty students failed an exam.
This is unexpected if number under the cardinal is interpreted
Bale and Khanjian 2014 discuss the fact that in definite plural numeral NPs singular marking is not possible, yet do not change the semantics of cardinals, tinkering instead with the semantics of the definite article (introducing maximality under the cardinal)

## Specificity as a condition on number agreement is attested independently

Other discourse-related factors and phi-features can also play a role (cf. Smith-Stark 1974, Corbett 2000, Haspelmath 2005):
(i) definiteness (Yoruba (Rowlands 1969:41-42))
(ii) animacy (Palauan (Josephs 1997); Miya: numeral NPs only (Schuh 1989, 1998))
(iii) humanity (Vai: except in numeral NPs (Welmers 1976:45))
(iv) measure (Dutch (Klooster 1972): most measure nouns are not marked plural in numeral NPs, see Matushansky and Ruys 2014, Ruys 2017)
(v) gender (Estonian Swedish (Rendahl 2001:156, Koptjevskaja-Tamm and Wälchli 2001:701): only feminine nouns are overtly marked plural in numeral NPs)
All of these factors can trigger Differential Argument Marking (Bossong 1983-1984, 1991, Aissen 1999, 2003, de Hoop and de Swart 2009, etc., see Seržant and Witzlack-Makarevich [forthcoming] for an overview)

### 1.4. Act IV: The dissociation of unmarked plurals and plurality under cardinals

Finnish and Welsh, which require singular under cardinals, do not have general number:
a. Luin kirjan/kirjaa.

Finnish read.1SG book.ACC/PART I read a book/the book. ( $\neq$ I read (the) books)
b. Luin kirjat/kirjoja.
read.1SG book.PL.ACC/PART
I read the books/books. $(\neq$ I read a/the book $)$
c. Olemme suomalaisia.
be.1PL.PRES Finnish.n.PL.PART
We're Finnish.
(7) a. Gwelodd Rhiannon ddraig. Welsh see.3SG.PAST Rhiannon dragon.SG
Rhiannon saw a dragon/*dragons.
b. Roeddwn i ac Emyr yn ysgrifenwyr rhagorol. Welsh, Sadler 2003 was.1SG 1SG and Emyr PRED writer.PL excellent Emyr and I were excellent writers.

Renans, Tsoulas, Folli, Ketrez, Tieu, de Vries and Romoli 2017 and Yatsushiro, Alexiadou, Geckin, Harmati-Pap and Sauerland 2018: Hungarian and Turkish plurals are not exclusive

### 1.5. Act $V$ : Noun-conditioned plurality under cardinals

Scottish Gaelic (Greene 1992, more data in Acquaviva 2006 and Ó Maolalaigh 2013):
$>$ the cardinals one and two combine with a singular lexical NP
> other lower simplex cardinals ('three' through 'ten') combine with a plural lexical NP, except if merging with the cardinals fichead 'twenty', ceud 'hundred' and mile 'thousand', as well as with the nouns dusan 'dozen', duine 'person', latha 'day' and bliadhna 'year' (much dialectal variation in the choice), which remain singular
> the higher simplex cardinals (twenty, hundred, etc.) combine with a singular lexical NP

This pattern would be inexplicable if plurality were introduced below the cardinal

+ Ruys 2017: "if Link’s (1983) standard operation of semantic pluralization were to apply to liters of wine, this would yield the set of all individual sums of one-liter portions of wine (not necessarily measuring multiple liters, since the original portions may overlap materially)."

In fact, liters of wine is a plural of abundance
Further arguments in Matushansky and Ruys 2014, Ruys 2017, Ionin and Matushansky [in press]

### 1.6. Epilogue: Number-marking under a cardinal

Cardinals do not combine with semantic plurals
Plural marking can therefore result from factors other than Link's pluralization
Next step: other semantic contributors to plural marking

## 2. NON-ADDITIVE PLURALS

The gist of the argument: it is not the term that introduces the semantic component creating a plurality that is responsible for plural marking

### 2.1. Associative plural and plural marking

Daniel and Moravcsik 2013: An associative plural designates a heterogeneous set consisting of the focal referent and the associates:
a. Tanaka-tachi

Japanese, Moravcsik 2003
Tanaka-APL
Tanaka and his family or friends or associates
b. Péter-ék

Hungarian, Moravcsik 2003
Peter-APL
Peter and his family or friends or associates
What is completely self-evident from the semantic standpoint is that associative plurals do not involve semantic pluralization
What is needed is the group notion of Kratzer 2009:
(9) $\mathbb{\|}$ [group] $\rrbracket^{\mathrm{g}, \mathrm{c}}=\lambda \mathrm{x}$. the group of x for c

This is the mode of plural formation used for pronouns ( $w e=I+$ someone else)
It can be unmarked on the NP:
(10) Moj brat tam toža žyli. Talitsk Russian, Bogdanov 1968
my.MSG brother.m there also lived.PL via Corbett 2006:155
My brother and his family also lived there.

Vinokurova 2005:143: in Sakha plural and possessed DPs can appear with an associative marker:
Data from Vinokurova 2005, unless indicated otherwise, glosses somewhat modified
(11) Lena-m aax

Lena-1SG APL
Lena (whom I know) and her folks/another person
Crucially, this marker does not need to add referents:
(12) a.
ubaj-ym uonna edjiij-im aax
brother-1SG and sister-1SG APL
i. my elder brother and my elder sister and their folks
ii. my elder brother and my elder sister and one or more persons
iii. my elder brother and my elder sister
b. ol kyrgyt-tar aax
that girl-PL APL
i-ii. those girls and \{their folks/one or more persons\}
iii. those girls

My proposal: -aax- is a DP-peripheral marker of non-homogenous plurality, with different potential sources for plurality itself:
> additive plural morpheme (closure under sum)
> conjunction
$>$ (null) associative plural morpheme ("and the associated group")
This is a marked plural but it does not contribute semantic plurality (i.e., there is no way of arguing that the overt noun phrase -aax- combines with in (12iii) is pluralized by -aax-)

### 2.2. Yucatec Maya DP-external plural marker

Butler 2012: in Yucatec Maya plural marking is optional:
Lehmann 2002: obligatoriness of plural marking increases with empathy and specificity.
(13) Táan u k'aay(-o'ob) le x-ch'úupal(-o'ob)-o'. Yucatec Maya, Butler 2012
prog A3 sing(-PL) DEF F-girl(-PL)-D2
The girls are singing.
(14) a. le x-ch'úupal ki'ichpam-o'

DEF F-girl pretty-D2
the pretty girl/the pretty girls
b. le x-ch'úupal(-o'ob) ki'ichpam(-o'ob)-o'

DEF F-girl-PL pretty-PL-D2
the pretty girls
This plural marker also can appear on conjunctions of singular NPs:
(15) le x-ch'úupal yéetel le ko'olel-o'ob-o'

DEF F-girl and DEF woman-PL-D2
the girl and the woman/the girl and the women/the girls and the woman/the girls and the women

Butler 2012: the plural of Yucatec Maya is DP-adjoined rather than located in NumP

- What does this statement mean from the point of view of semantics?
$>$ What about other plural markers, on the verb or on the post-nominal adjective?
What we are dealing with is the question of where plural marking is realized

How is this different from asking where Case is realized DP-internally? Exactly the same set of hosts and the same possibility of spreading are attested

### 2.3. Other types of non-additive plurals

Plural of politeness (including plural $2^{\text {nd }}$ person pronouns and the majestic and the medical we):
(16) "Mamen'ka plačut," - šepnula ona. Russian mother cry-3PL whispered-3F 3FSG
"Mother is crying," - she (the maid) whispered. (Turgenev, Nakanune, 'On the Eve', 1860 via Corbett 2006:3)
Comitative plural (Dyła 1988, Aissen 1989, McNally 1993, Camacho 1996, 2000, Progovac 1997, Dalrymple, Hayrapetian and King 1998, Vassilieva 2001, Vassilieva and Larson 2001, 2005, Feldman 2001, Ionin and Matushansky 2003, Trawinski 2005, etc.):
Virile is [+human, +masculine, +plural]
(17) a. Matka z ojcem wrócili.

Polish, Trawinski 2005 mother.F with father.M.INS came back.V.PL The mother and the father came back.
b. Oddział z ojcem wrócili. department.M with father.M.INS came back.V.PL The department and the father came back.
Unlike with conjunction plurals, impossible to make the preposition bear [plural].
Collective plural (Maltese, exx. from Corbett 1996):
(18) a. dak id-dubbien il-kbir li hareg gill-bieb dahat that.MSG DEF-flies.COLL DEF-large.MSG that went.out.MSG through.the door those large flies which went out through the door
b. dawk id-dubbien il-kbar li harġu mill-bieb dahat that.PL DEF-flies.COLL DEF-large.PL that went.out.PL through.the door those large flies which went out through the door
Potentially includes the root plural of Halkomelem:
(19) Halkomelem, Wiltschko 2008
a. t'ílém ye swíyeqe
b. t'ilém te swíyeqe
sing DET.PL man.SG
The men are singing.
c. t'ílém ye s-í:wí:qe sing DET man.PL The men are singing.
d. t'ílém te s-í:wí:qe
sing DET.PL man.PL
The men are singing.

Group nouns (Munn 1999, den Dikken 2001, Sauerland and Elbourne 2002, among others):
(20) a. The Government is ruining this country.
b. The Government are ruining this country.

Plural of abundance (especially with measure and mass nouns):
a. Jan dronk liters wine.

Dutch, Ruys [to appear] Jan drank liter.PL wine Jan drank excessively many liters of wine.
b. The kids ate pounds of cake during the birthday party!
(22) a. hithikan nera sto patoma.

Greek, Alexiadou 2011
dripped water.PL on floor
A lot of water dripped on the floor.
b. The river discharges its water/waters into the lake.

Acquaviva 2008:109
Acquaviva 2008: the plural of abundance is a lexical plural (see also Alexiadou 2011):
In none of these cases does it seem reasonable to assume a plurality-introducing functional head inside an NP, the way it has been hypothesized for additive plurals

### 2.4. Non-additive plural marking: summary

Plural agreement and NP-internal plural markers may appear with plurals that are not formed by the additive pluralization operator

In a lot of cases of NP-internal plural marking it makes sense to talk about agreement rather than pluralization
The semantic correlate of plural agreement appears to be the property of being non-atomic as defined for pronouns (cf. Heim 2005, Kratzer 2009) or of being augmented (Harbour 2008):
(23) a. $\llbracket p l u r a l \rrbracket=\lambda \mathrm{x}: \mathbf{x} \in(* \mathbf{D}-\mathbf{D}) . \mathrm{x}$
type $\langle\mathrm{e}, \mathrm{e}\rangle$
b. $\quad \llbracket+$ augmented $\rrbracket=\lambda \mathrm{P} . \lambda \mathrm{x}: \mathbf{P}(\mathbf{x}) . \exists \mathbf{y}\left[\mathbf{P}(\mathbf{y})^{\wedge} \mathbf{y}\right.$ ᄃ $\left.\mathbf{x}\right] . \mathrm{P}(\mathrm{x}) \quad$ type $\langle\langle\mathrm{e}, \mathrm{t}\rangle,\langle\mathrm{e}, \mathrm{t}\rangle\rangle$

Apparent conclusion: the presence of $\varphi P$ (Sauerland 2003, 2008, Kratzer 2009):


Problem: there still needs to be something inside the DP that makes it possible for the plural presupposition to be satisfied
For Sauerland 2003, 2008 plural is the unmarked value, it is singular that is specified as [atomic]
And the question remains what determines the distribution (obligatoriness?) of $\varphi \mathbf{P}$

## 3. THE FORMAL NUMBER

From the syntactic standpoint there has to be a plural feature, because default agreement (in the absence of number features) is always identical to the corresponding singular

### 3.1. Pluralia tantum

Plural marking does not always correspond to semantic plurality: pluralia and dualia tantum:
(25) a. miškaf.ayim 'glasses.DU', mispar.ayim 'scissors.DU'

Hebrew
b. 'erus.in 'engagement.PL', xulyetan.im 'vertebrae.PL'

The status of the plural (dual) marker in pluralia tantum nouns is subject to debate. While the consensus seems to be that it is not interpretable, it is, as with gender, clearly not random Pluralia and dualia tantum trigger agreement normally:
a. Qerrulliik ang'uk.

Yup'ik, Mithun 2010
qerrullii-k ange-u-k
trouser-DU be.big-INTR.IND-3DU
The pants are big (one pair).
b. Niicugnissuutet kumareski!
niite-yug-neq-i-cuun-et
kumarte-ki
hear-DESID-result-make-device-PL ignite-OPT.2SG/3PL
Turn on the radio!

In other words, number, like gender, need not be semantic

## Which means that the $\varphi \mathbf{P}$ hypothesis cannot by itself explain number agreement (duh!)

What is needed is a formal number feature (at least) on top of the noun phrase that has to be licensed: either by semantics or by the inherent lexical specification of a noun as a plurale or duale tantum
This is essentially the same idea that I was pursuing in Matushansky 2013 for gender agreement
That optional plural marking is systematically associated with a higher level of individuation should be a clue - for future work

### 3.2. The locus of formal number

Number like gender can be manifested in a number of places NP-internally and externally
(27) a. belema bara=ria taulatoitoi Sinaugoro (Kolia 1975:124 via Dryer 2005) python big=PL six six big pythons
b. mburrklerrtji awuni-mukupu \{bidjina-ga-tji/ Gurr-goni, Green 1995:70 child 3.UA.NF-two $3_{\mathrm{MIN}}^{\mathrm{A}}$. 3 UA. $\mathrm{NF}_{\mathrm{O}}$-take-PRE/CON
*? a-ga-tji\} a-na-ma-nay
$3 \mathrm{MIN}_{\mathrm{A}} .3 \mathrm{I}_{\mathrm{O}}$-take-PRE/CON 3 $\mathrm{I}_{\mathrm{s}}$-twds-go.along-PRE He brought along two children.
(28) a. Gen twa liv ak yon magazin. Pran liv yo/*la. Haitian Creole, Déprez 2006 exist three book and one magazine take book the.PL/SG There are three books and one magazine. Take the books.
b. Gen liv ak magazin sou tab sa. Pran liv *(yo). exist book and magazine on table this take book the.PL There are books and magazines on the table. Take the books.
And its origin can also be distributed:
(29) a. Outside counsel ${ }_{\text {PL }} /$ this committee ${ }_{\text {SG }}$ have very little incentive to be efficient.
b. y tair cath ddu hynny Welsh, Mittendorf and Sadler 2005 the.PL three.F cat.F.SG black.SG that.PL those three black cats
c. Sardaana-laax kel-li-ler/*kel-le.

Sakha, Vinokurova 2005:137
Sardaana-APL come-PAST-PL/*come-PAST
Sardaana and \{her folks/another person(s)\} came.
d. Ta dobra deca dolaze. Serbo-Croatian, Wechsler and Zlatić 2000 that.F.SG good.F.SG children.F.SG come.3PL
Those good children came.
e. dawk id-dubbien il-kbar

Maltese, Corbett 1996
that.PL DEF-flies.COLL DEF-large.PL
those large flies
f. \%Don't stand between us and these herd of murderers.
g. Vi ste bili dobra/dobry. Slovenian, Corbett 1983:49 you.PL were.2PL been.PL kind.FSG/PL You (female) were kind.

What I haven't seen (see also the Agreement Hierarchy of Corbett 1983 et seq.):
$>$ a morpho-syntactically plural noun and a singular adjective/determiner
$>\quad$ a singular adjective and a plural determiner (parallel cases exist for gender)
$>$ a singular auxiliary/participle and a plural adjective (cf. Corbett 1983)
$>\quad$ associative plural marked below its semantic location
And we haven't touched optionality yet

## 4. TAKE-HOME MESSAGE (NO CONCLUSIONS)

Number is not located in one place, syntactically, semantically or morphologically:
$>$ pragmatic (discourse) plurals: comitative, collective, honorific, abundance
$>$ semantic plurals: additive, associative, conjunctive
$>$ syntactic plurals: phrasal affixes, plural words, features
$>$ morphological plurals: (un)marked pluralia and dualia tantum
Overt plural marking can be conditioned by prominence hierarchies and the conditions can be not the same even within one language

Many questions to ask:
$>$ how to account for Corbett's Agreement Hierarchy, especially for predicates?
$>\quad$ how to encode dual as a combination of presuppositional features?
$>\quad$ how to encode the interpretable number feature on cardinals (which generally have the morphosyntax of singular nouns)?
$>\quad$ is number located on a particular head or is it a property of phrases?

## 5. APPENDICES

### 5.1. Dual marking

Everything I said about plural morphology also applies to dual morphology
It can go on top of the associative plural morpheme without adding a participant:

| a. | cuna-nku-t | ayag-tu-t. |
| :---: | :---: | :---: |
|  | Chuna-APL-PL | go-IND-3PL |
|  | Chuna and his | family/friends left. |
| b. | cuna-nku-k | ayag-tu-k. |
|  | Chuna-APL-DU | go-IND-3DU |
|  | Chuna and his | family/friends left |

In Kharia (South Munda, eastern-central India) it is optional and can signal associative plural formation without an overt associative plural morpheme:
$\begin{array}{llll} & \text { (31) a. } & \text { u burha-kiyar-te-ko } & \text { bay } \\ & \text { jaPb-sip. } & \text { Kharia, Peterson } 2014\end{array}$ My parents have gone mad (lit. Madness has grabbed the old man and his wife)
b. etwa-kiyar boriya-ga burha burhi modi jhan-te sewa karay-op-kiyar. Etwa-DU both-FOC old.man old.woman Modi class-OBL service do-ACT.PST-DU Etwa and his wife, both of them, the old man and the old woman, helped Modi and his family.
c. u sembho ro dakay rani-kiyar this Sembho and Dakay queen-DU this Sembho and queen Dakay

And in Yapese it is marked only on the verb, as a dual:
(32) Kea guyrow Tamag.

Yapese, Jensen 1977:271
PERF.3SG see.DU Tamag
i. Tamag saw the two of them.
ii. He saw Tamag and someone else.

### 5.2. Pluralia \& dualia tantum common nouns

Wierzbicka 1996: pluralia tantum nouns can be divided into three groups semantically:
(33) a. mass nouns (oats, bonkers, measles, etc.)

English
b. naturally bipartite nouns (glasses, pajamas, skis, etc.)
c. aggregates (bathroom scales, checkers, blinds, etc.)

Problem: when dualia tantum are distinguished, the choice can be unexpected:
(34) a. šam-ayim 'sky.DU', m-ayim 'water.DU'

Hebrew
b. garbon-im 'tights-pantyhose.PL', šqed-im 'tonsils.PL'

There is no one-to-one mapping
The dual morphology does not always imply bipartite structure (for mass nouns, for sure) and bipartite structure does not entail dual or even plural morphology (cf. 'ofan-ayim 'bicycle.DU' vs. 'ofno'a 'motorcycle.SG' in Hebrew)
(35) cross-linguistic pluralia tantum matches and mismatches
a. French funérailles and Russian poxorony 'funeral', Russian sani 'sleigh', Polish usta 'mouth', Hebrew panim 'face'
b. Hebrew miškefet and Russian binokl' 'binoculars', French rubéole and Russian krasnuxa 'measles'

The status of the plural (dual) marker in pluralia tantum nouns is subject to debate. While the consensus seems to be that it is not interpretable, it is, as with gender, clearly not random.

### 5.3. More on Sakha associative plural

Associative plurals in Sakha can also be formed in two more ways
For singular bare nouns: with a comitative (a postposition or a case-marker, phonologically integrated into the preceding word):
a. Sardaana-laax Keskil kel-li-ler/*kel-le. Sakha, Vinokurova 2005:137 Sardaana-APL Keskil come-PAST-PL/*come-PAST Sardaana and Keskil came.
b. Sardaana-laax kel-li-ler/*kel-le.

Sardaana-APL come-PAST-PL/*come-PAST
Sardaana and \{her folks/another person(s)\} came.
Vinokurova 2005:139: the morpheme -laax- decomposes into the universal verbalizer -laaplus the nominalizer/adjectivizer $-x-$; the morpheme -aax- is derived from it. I sort of doubt this.

Ebata 2014 (and the Russian tradition in general) analyzes it as the proprietive suffix:
a. $\left.\quad \begin{array}{l}\text { massyyna-laax } \\ \text { car-COM } \\ \text { a person with a car }\end{array}\right)$

c. En massyyna-laax-xyn.
you car-COM-2SG
You have a car.
By the regular plural suffix:
(38) Ajaal Tobuukap-tar

Ajaal Tobuukap-PL
i. several persons named Ajaal Tobuukap
ii. Ajaal Tobuukap and his folks/another person(s)

I have no idea how all these forms are different

## 6. References

Acquaviva, Paolo. 2005. The morphosemantics of transnumeral nouns. In Morphology and Linguistic Typology, On-line Proceedings of the Fourth Mediterranean Morphology Meeting (MMM4) Catania 21-23 September 2003,, ed. by Geert Booij, Emiliano Guevara, Angela Ralli, Salvatore Sgroi and Sergio Scalise. Bologna: University of Bologna.
Acquaviva, Paolo. 2006. Goidelic inherent plurals and the morphosemantics of number. Lingua 116, pp. 1860-1887.
Acquaviva, Paolo. 2008. Lexical plurals: a morphosemantic approach. Oxford: Oxford University Press.
Aissen, Judith. 1999. Markedness and subject choice in Optimality Theory. Natural Language \& Linguistic Theory 17, pp. 673-711.
Aissen, Judith. 2003. Differential object marking: Iconicity vs. Economy. Natural Language \& Linguistic Theory 21, pp. 435-448.
Aissen, Judith L. 1989. Agreement controllers and Tzotzil comitatives. Language 65, pp. 518-536.
Alexiadou, Artemis. 2011. Plural mass nouns and the morpho-syntax of number. In Proceedings of the 28th West Coast Conference on Formal Linguistics, ed. by Mary Byram Washburn, Katherine McKinney-Bock, Erika Varis, Ann Sawyer and Barbara Tomaszewicz, pp. 33-41. Somerville, Massachusetts: Cascadilla Proceedings Project.
Bale, Alan, Michaël Gagnon, and Hrayr Khanjian. 2011. Cross-linguistic representations of numerals and number marking. In Semantics and Linguistic Theory (SALT) 20, ed. by Nan Li and David Lutz, pp. 582-598: eLanguage.
Bale, Alan, and Hrayr Khanjian. 2014. Syntactical complexity and competition: the singular-plural distinction in Western Armenian. Linguistic Inquiry 45, pp. 1-26.
Bernstein, Judy. 1991. DPs in Walloon: evidence for parametric variation in nominal head movement. Probus 3, pp. 101-126.
Bogdanov, V.N. 1968. Osobyj slučaj dialektnogo soglasovanija skazuemogo s podležaščim po smyslu i kategorija predstavitel'nosti. Naučnye doklady vysšej školy: filologičeskie nauki 4, pp. 68-75.
Borer, Hagit. 2005. In Name Only. Structuring Sense 1. Oxford: Oxford University Press.
Bossong, Georg. 1983-1984. Animacy and markedness in universal grammar. Glossologia 2-3, pp. 720.

Bossong, Georg. 1991. Differential object marking in Romance and beyond. In New Analyses in Romance Linguistics: Selected Papers from the XVIII Linguistic Symposium on Romance

Languages 1988, ed. by Dieter Wanner and Douglas A. Kibbee, pp. 143-170. Amsterdam: Benjamins.
Bouchard, Denis. 2002. Adjectives, Number and Interfaces: Why Languages Vary. Oxford: Elsevier Science.
Butler, Lindsay Kay. 2012. Crosslinguistic and experimental evidence for non-number plurals. Linguistic Variation 12, pp. 27-56.
Camacho, José. 1996. Comitative coordination in Spanish. In Aspects of Romance Linguistics: Selected Papers from the Linguistic Symposium on Romance Languages XXIV March 10-13, 1994, ed. by Claudia Parodi, Carlos Quicoli, Mario Saltarelli and Maria Luisa Zubizarreta, pp. 107-122. Washington, D.C.: Georgetown University Press.
Camacho, José. 2000. Structural restrictions on comitative coordination. Linguistic Inquiry 31, pp. 366-375.
Corbett, Greville G. 1983. Hierarchies, targets and controllers: agreement patterns in Slavic. University Park, Pennsylvania: Pennsylvania State University Press.
Corbett, Greville G. 1996. Minor number and the plurality split. Rivista di Linguistica 8, pp. 101-122.
Corbett, Greville G. 2000. Number. Cambridge: Cambridge University Press.
Corbett, Greville G. 2006. Agreement. Cambridge: Cambridge University Press.
Corbett, Greville G., and Marianne Mithun. 1996. Associative forms in a typology of number systems: evidence from Yup'ik. Journal of Linguistics 32, pp. 1-17.
Cowper, Elizabeth, and Daniel Currie Hall. 2014. The features and exponents of nominal number. Lingue e linguaggio 8, pp. 63-82.
Dalrymple, Mary, Irene Hayrapetian, and Tracy Holloway King. 1998. The semantics of the Russian Comitative Construction. Natural Language \& Linguistic Theory 16, pp. 597-631.
Daniel, Michael, and Edith Moravcsik. 2013. The associative plural. In The World Atlas of Language Structures Online, ed. by Matthew S. Dryer and Martin Haspelmath. Leipzig: Max Planck Institute for Evolutionary Anthropology.
Déprez, Viviane. 2005. The structure of (in)definiteness: issues in the form and interpretation of noun phrases. Morphological number, semantic number and bare nouns. Lingua 115, pp. 857-883.
Déprez, Viviane. 2006. On the conceptual role of number. In New Perspectives on Romance Linguistics: Vol. I: Morphology, Syntax, Semantics, and Pragmatics. Selected papers from the 35th Linguistic Symposium on Romance Languages (LSRL), Austin, Texas, February 2005, ed. by Chiyo Nishida and Jean-Pierre Y. Montreuil, pp. 67-81. Amsterdam: John Benjamins.
den Dikken, Marcel. 2001. "Pluringulars", pronouns and quirky agreement. The Linguistic Review 18, pp. 19-41.
Donabédian, Anaïd. 1993. Le pluriel en arménien moderne. Faits de Langues 2, pp. 179-188.
Dryer, Matthew. 2005. Coding of Nominal Plurality. In The World Atlas of Language Structures, ed. by Martin Haspelmath, Matthew S. Dryer, David Gil and Bernard Comrie33, pp. 138-141. Oxford: Oxford University Press.
Dyła, Stefan. 1988. Quasi-comitative coordination in Polish. Linguistics 26, pp. 383-414.
Ebata, Fuyuki. 2014. Proprietive affixes in the languages of Northeastern Eurasia: an overview. Tomsk Journal of Linguistics and Anthropology 1(3), pp. 23-34.
Farkas, Donka, and Henriette E. de Swart. 2010. The semantics and pragmatics of plurals. Semantics and Pragmatics 3, pp. 1-54.
Feldman, Anna. 2001. Comitative and plural pronoun constructions. In Proceedings of the 17th Annual Meeting of the Israel Association of Theoretical Linguistics, ed. by Yehuda N. Falk. Available at http://linguistics.huji.ac.il/IATL/17/Feldman.pdf.
Green, Rebecca. 1995. A Grammar of Gurr-goni (North Central Arnhem Land), Doctoral dissertation, Australian National University.
Greene, David. 1992. Celtic. In Indo-European numerals, ed. by Jadranka Gvozdanović, pp. 497-554. Berlin: Mouton de Gruyter.
Harbour, Daniel. 2008. Morphosemantic Number: From Kiowa Noun Classes to UG Number Features. Dordrecht: Springer.

Haspelmath, Martin. 2005. Occurence of nominal plurality. In The World Atlas of Language Structures, ed. by Martin Haspelmath, Matthew S. Dryer, David Gil and Bernard Comrie, pp. 142-155. Oxford: Oxford University Press.
Heim, Irene. 2005. Features of pronouns: the semantics of number, gender, and person. Class notes. DEC ENS, January 18-27, 2005.
de Hoop, Helen, and Peter de Swart eds. 2009. Differential Subject Marking. Natural Language and Linguistic Theory. Dordrecht: Springer.
Ionin, Tania, and Ora Matushansky. 2003. DPs with a twist: A unified analysis of Russian comitatives. In Formal Approaches to Slavic Linguistics \#11: The Amherst Meeting 2002, ed. by Wayles Browne, Ji-Yung Kim, Barbara H. Partee and Robert A. Rothstein. Ann Arbor, Michigan: Michigan Slavic Publications.
Ionin, Tania, and Ora Matushansky. 2006. The composition of complex cardinals. Journal of Semantics 23, pp. 315-360.
Ionin, Tania, and Ora Matushansky. [in press]. Cardinals: The Syntax and Semantics of Cardinalcontaining Expressions. Cambridge, Massachusetts: MIT Press.
Jensen, John Thayer. 1977. Yapese reference grammar. PALI language texts: Micronesia XIX. Honolulu: University Press of Hawaii.
Josephs, Lewis S. 1997. Handbook of Palauan Grammar. Republic of Palau: Bureau of Curriculum \& Instruction, Ministry of Education.
Klooster, Wim. 1972. The Structure Underlying Measure Phrase Sentences. Dordrecht: Reidel.
Kolia, John A. 1975. A Balawaia grammar sketch and vocabulary. In Studies in Languages of Central and Southeast Papua, ed. by Tom E. Dutton. Pacific Linguistics C. Canberra: Australian National University.
Koptjevskaja-Tamm, Maria, and Bernhard Wälchli. 2001. The Circum-Baltic languages: An arealtypological approach. In CircumBaltic Languages, Volume 2: Grammar and Typology, ed. by Östen Dahl and Maria Koptjevskaja-Tamm, pp. 615-750. Amsterdam-Philadelphia: John Benjamins.
Kratzer, Angelika. 2009. Making a pronoun: fake indexicals as windows into the properties of pronouns. Linguistic Inquiry 40, pp. 187-237.
Lan, Haifan. 2010. Possible interpretations for suffix men in Mandarin Chinese, MA thesis: Utrecht University.
Lehmann, Christian. 2002. Possession in Yucatec Maya. Arbeitspapiere des Seminars für Sprachwissenschaft der Universität Erfurt 10.
Link, Godehard. 1983. The logical analysis of plurals and mass terms: A lattice theoretical approach. In Meaning, use, and the interpretation of language, ed. by Rainer Bauerle, Christoph Schwarze and Arnim von Stechow, pp. 302-323. Berlin: de Gruyter.
Lowenstamm, Jean. 2007. On little $n$, $\sqrt{ }$, and types of nouns. In The Sounds of Silence: Empty Elements in Syntax and Phonology, ed. by Jutta Hartmann, Veronika Hegedüs and Henk Van Riemsdjik. Amsterdam: Elsevier.
Mathieu, Éric. 2014. Many a plural. In Weak referentiality, ed. by Ana Aguilar-Guevara, Bert Le Bruyn and Joost Zwarts, pp. 157-181. Amsterdam: John Benjamins.
Matushansky, Ora. 2013. Gender confusion. In Diagnosing Syntax, ed. by Lisa L.-S. Cheng and Norbert Corver, pp. 271-294. Oxford: Oxford University Press.
Matushansky, Ora, and E.G. Ruys. 2014. On the syntax of measure. Paper presented at TIN-dag 2014, Utrecht, February 1, 2014.
McNally, Louise. 1993. Comitative coordination: a case study in group formation. Natural Language \& Linguistic Theory 11, pp. 347-379.
Mithun, Marianne. 2010. The search for regularity in irregularity: defectiveness and its implications for our knowledge of words. In Defective Paradigms: Missing Forms and What They Tell Us, ed. by Matthew Baerman, Greville G. Corbett and Dunstan Brown. Proceedings of the British Academy 163, pp. 125-149. Oxford: British Academy and Oxford University Press.
Mittendorf, Ingo, and Louisa Sadler. 2005. Numerals, nouns and number in Welsh NPs. In Proceedings of the LFG05 Conference, ed. by Miriam Butt and Tracy Holloway King, pp. 294-312. Stanford, California: CSLI Publications.

Moravcsik, Edith. 2003. A semantic analysis of associative plurals. Studies in Language 27, pp. 469503.

Munn, Alan. 1999. First conjunct agreement: Against a clausal analysis. Linguistic Inquiry 30, pp. 643-668.
Nelson, Diane, and Ida Toivonen. 2000. Counting and the grammar: case and numerals in Inari Sami, ed. by Diane Nelson and Paul Foulkes. Leeds Working Papers in Linguistics 8, pp. 179-192.
Ó Maolalaigh, R. 2013. Corpas na Gàidhlig and singular nouns with the numerals 'three' to 'ten' in Scottish Gaelic. In Language in Scotland: Corpus-based Studies, ed. by Wendy Anderson. Scottish cultural review of language and literature, pp. 113-142. Amsterdam \& New York: Rodopi.
Oberly, Stacey Inez. 2004. A preliminary analysis of Southern Ute with a special focus on noun phrases. Coyote Papers 13, ed. by Tania Granadillo, Meghan O'Donnell and Stacey Inez Oberly, pp. 103-144.
Peterson, John. 2014. Figuratively speaking - number in Kharia. In Number: Constructions and Semantics: Case studies from Africa, Amazonia, India and Oceania, ed. by Anne Storch and Gerrit Dimmendaal, pp. 77-101. Amsterdam: John Benjamins Publishing Company.
Progovac, Ljiljana. 1997. Slavic and the structure for coordination. In Proceedings of Formal Approaches to Slavic Linguistics (FASL) 5: The Indiana Meeting, ed. by Martin Lindseth and Steven Franks, pp. 207-223. Ann Arbor, Michigan Slavic Publications.
Renans, Agata, George Tsoulas, Raffaella Folli, Nihan Ketrez, Lyn Tieu, Hanna de Vries, and Jacopo Romoli. 2017. Turkish plural nouns are number-neutral: experimental data. In Proceedings of the 21st Amsterdam Colloquium, ed. by Alexandre Cremers, Thom van Gessel and Floris Roelofsen. Available at http://semanticsarchive.net/Archive/jZiM2FhZ/AC2017Proceedings.pdf.
Rendahl, Anne-Charlotte. 2001. Swedish dialects around the Baltic Sea. In Circum-Baltic Languages, Volume I: Typology and Contact, ed. by Östen Dahl and Maria Koptjevskaja-Tamm, pp. 137177. Amsterdam: John Benjamins.

Ritter, Elisabeth. 1987. NSO noun phrase in Modern Hebrew. In Proceedings of NELS 17, ed. by Joyce McDonough and Bernadette Plunkett, pp. 521-537. Amherst, Massachusetts: University of Massachusetts, GLSA.
Ritter, Elisabeth. 1991. Two functional categories in noun phrases: Evidence from Modern Hebrew. In Perspectives on Phrase Structure. Syntax and Semantics, pp. 37-62. New York: Academic Press.
Rowlands, E. C. 1969. Teach Yourself Yoruba. London: English Universities Press.
Ruys, E.G. 2017. Two Dutch many's and the structure of pseudo-partitives. Glossa 2, pp. 7-33.
Ruys, E.G. [to appear]. Two Dutch many's and the structure of pseudo-partitives. Glossa.
Sadler, Louisa. 2003. Coordination and asymmetric agreement in Welsh. In Nominals: Inside and Out, ed. by Miriam Butt and Tracy Holloway King, pp. 85-118. Stanford, California: CSLI publications.
Sauerland, Uli. 2003. A new semantics for number. In Proceedings of Semantics and Linguistic Theory (SALT) 13, ed. by Robert B. Young and Yuping Zhou. Ithaca, New York: CLC publications, Department of Linguistics, Cornell University.
Sauerland, Uli. 2008. On the semantic markedness of phi-features. In Phi-Theory: Phi-Features across Modules and Interfaces, ed. by Daniel Harbour, David Adger and Susana Béjar, pp. 57-82. Oxford: Oxford University Press.
Sauerland, Uli, and Paul Elbourne. 2002. Total reconstruction, PF movement, and derivational order. Linguistic Inquiry 33, pp. 283-319.
Schnell, Stefan. 2012. Data from language documentations in research on referential hierarchies. In Potentials of Language Documentation: Methods, Analyses, and Utilization, ed. by Frank Seifart, Geoffrey Haig, Nikolaus P. Himmelmann, Dagmar Jung, Anna Margetts and Paul Trilsbeek, pp. 64-72. Honolulu: University of Hawaii Press.
Schroeder, Christoph. 1999. The Turkish Nominal Phrase in Spoken Discourse. Wiesbaden: Harrassowitz Verlag.

Schuh, Russell G. 1989. Number and gender in Miya. In Current Progress in Chadic Linguistics: Proceedings of the International Symposium on Chadic Linguistics: Boulder, Colorado, 1-2 May, 1987, ed. by Zygmunt Frajzyngier. Current Issues in Linguistic Theory 62, pp. 171-181. Amsterdam: John Benjamins.
Schuh, Russell G. 1998. A Grammar of Miya. University of California Publications in Linguistics 130. Berkeley: University of California Press.

Seržant, Ilja A., and Alena Witzlack-Makarevich eds. [forthcoming]. Diachrony of Differential Argument Marking. Berlin: Language Science Press.
Sigler, Michele. 1992. Number agreement and specificity in Armenian. In Papers from the 28th Regional Meeting of the Chicago Linguistic Society 1992, vol. I, The Main Session, ed. by Costas P. Canakis, Grace P. Chan and Jeanette Marshall Denton, pp. 499-514. Chicago: Chicago Linguistic Society.
Sigler, Michele. 1996. Specificity and agreement in standard Western Armenian, Doctoral dissertation, MIT.
Smith-Stark, T. Cedric. 1974. The plurality split. In Papers from the Tenth Regional Meeting, Chicago Linguistic Society, April 19-21, 1974, ed. by Michael W. La Galy, Robert Allen Fox and Anthony Bruck, pp. 657-671. Chicago: Chicago Linguistic Society.
Trawinski, Beata. 2005. Plural comitative constructions in Polish. In Proceedings of the 12th International Conference on Head-Driven Phrase Structure Grammar, ed. by Stefan Müller, pp. 375-395. Stanford, California: CSLI Publications.
Valois, Daniel. 1991. The Internal Syntax of DP, Doctoral dissertation, UCLA.
Vassilieva, Masha. 2001. On the typology of Russian comitatives. In Formal Approaches to Slavic Linguistics 9: The Bloomington Meeting, ed. by Steven Franks, Tracy Holloway King and Michael Yadroff, pp. 327-344. Ann Arbor, Michigan: Michigan Slavic Publications.
Vassilieva, Masha, and Richard K. Larson. 2001. The semantics of the plural pronoun construction. In Proceedings of Semantics and Linguistic Theory (SALT) 11, ed. by Rachel Hastings, Brendan Jackson and Zsofia Zvolenszky, pp. 449-465. Ithaca, New York: Cornell University, CLC Publications.
Vassilieva, Masha, and Richard K. Larson. 2005. The semantics of the plural pronoun construction. Natural Language Semantics 13, pp. 101-124.
Vinokurova, Nadezhda. 2005. Lexical Categories and Argument Structure : a study with reference to Sakha, Doctoral dissertation, Utrecht University. Utrecht: LOT Publications.
de Vries, Lourens, and Robinia de Vries-Wiersma. 1992. The Morphology of Wambon of the Irian Jaya Upper-Digul Area. With an Introduction to Its Phonology. Leiden: KITLV Press.
Wechsler, Stephen, and Larisa Zlatić. 2000. A theory of agreement and its application to SerboCroatian. Language 76, pp. 799-832.
Welmers, William E. 1976. A Grammar of Vai. Berkeley, California: University of California Press.
Wierzbicka, Anna. 1996. Semantics. Primes and Universals. Oxford: Oxford University Press.
Wiese, Heike. 2003. Numbers, language and the human mind. Cambridge: Cambridge University Press.
Wiltschko, Martina. 2008. The syntax of non-inflectional plural marking. Natural Language \& Linguistic Theory 26, pp. 639-694.
Yatsushiro, Kazuko, Artemis Alexiadou, Vasfiye Geckin, Veronika Harmati-Pap, and Uli Sauerland. 2018. The plural is unmarked. Paper presented at OASIS Workshop on Nominal Phrase Meaning, Humboldt University, January 11-12, 2018.


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