Chris Lasse Däbritz
University of Hamburg

Typology of number systems in languages of Western and Central Siberia

This paper investigates the linguistic expression of number in seven languages from Western and Central Siberia. In a first step the number system of each language is described in detail, and afterwards the most relevant convergences and divergences of the languages are dealt with. Three particularly interesting phenomena are discussed in more detail: First, it is shown that the concept of general number, denoting noun forms underspecified for number, is able to account for a range of related phenomena (unmarked noun forms after numerals, nouns denoting paired objects). Second, singulatives in Selkup, Ket and partly Eastern Khanty are analyzed, whereby it is argued that their similar morphosyntactic and grammaticalization patterns allow for analyzing them as a contact phenomenon. Third, two splits on the animacy hierarchy between the first and second person in Dolgan as well as Chulym Turkic are presented. Finally, the results are evaluated against a broader areal-typological background, whereby it is shown that the category of number does not support any larger areal groupings within Western and Central Siberia, but that the analyzed languages rather adhere to patterns of number marking present all over Northern Eurasia.

1. Introduction

In his much remarked paper on the usage of number markers in the Uralic languages, Paavo Ravila makes the following remarkable statement:

> Das Numerussystem der finnisch-ugrischen und samojedischen Sprachen ist unstreitig entwickelter als das der altaischen […]. So ist der Gebrauch des Singulars als absoluter Numerus in allen uralischen Sprachen ziemlich allgemein, z. B. nach dem Zahlwort erscheint der Singular, die Numeruszeichen der Nomina und Verben sind meist dieselben usw.

> 'The number system of the Finno-Ugric and Samoyedic languages is undoubtedly more developed than that of the Altaic [languages] […]. Thus, the usage of the singular as absolute number is rather common to all Uralic languages, e.g., after numerals the singular appears, the number markers of nouns and verbs are mostly the same and so on.' (Ravila 1941: 2)

This implies on the one hand that the category of number appears to be more than a bare opposition of singular and plural (and dual) in the Uralic languages, and on the other hand that number marking in the Uralic and Altaic languages may show parallels but does not function identically. Surely much work on number marking in both Uralic and Altaic languages has been done since then, but typologically oriented approaches are rare, if available at all (see Klumpp et al. 2018 on the role of typology in Uralic studies). The paper at hand aims to fill this gap by describing the number systems of seven languages from Western and Central Siberia systematically, and evaluating them against a typologically informed background. The choice of languages is certainly coincidental to a certain extent, but can nevertheless be motivated from both a geographical and a methodological perspective. It has been observed in many works that Western and Central Siberia – more precisely the Ob and Yenisei basins – form a region where language contact and contact-induced linguistic convergences are more the norm than the exception (e.g. Hajdú 1979, Pusztay 1987, Helimski 2003). Helimski (2003: 160) even proposes an "Ostyak (Ob-Yeniseic) Sprachbund" with its center being Eastern Khanty and Selkup, and possibly including Nenets, Mansi, Ket, Southern Ewenki and Chulym Turkic. The choice of languages in this paper – see Figure 1 and the list below – largely follows these approaches, albeit focusing rather on the Yenisei basin instead of the Ob basin. Given the limits of space, e.g. Nenets, Mansi as well as Northern and Southern Khanty varieties are not included, though

they certainly would fit equally well into the sample. A further motivation of the choice of languages was to represent each (sub)branch of all named language families present in the given region.

The following list presents the languages under investigation here, including their genetic relationships and numbers of speakers according to the latest Russian census from 2010 (VPN 2010).

- Eastern Khanty (< Finno-Ugric[1] < Uralic; 1000 speakers)
- Nganasan (< Northern Samoyedic[2] < Samoyedic < Uralic; 100 speakers)
- Selkup (< Southern Samoyedic < Samoyedic < Uralic; 1000 speakers)
- Dolgan (< North-Siberian Turkic < North-Eastern Turkic < Turkic; 1000 speakers)
- Chulym Turkic (South-Siberian Turkic < North-Eastern Turkic < Turkic; 50 speakers)
- Ewenki (< Northern Tungusic < Tungusic; 5000 speakers)
- Ket (< Yeniseian; 200 speakers)

The data forming the empirical basis for this study come from two different sources. First, descriptive grammars were consulted in order to get an overview of the presence of the number category in each language system. Later, also corpus data as well as data from text collections was taken into consideration, especially when it comes to such complex syntactic issues as number agreement or the behavior of different types of nouns such as mass nouns, abstract nouns and the like. The used corpora and text collections are listed in what follows. It must be noted that the database is surely not balanced regarding the scope of the corpora and text collections included. This holds particularly true for Eastern Khanty, Chulym Turkic and Ket, in the case of which published digital corpora are still lacking – all Eastern Khanty, Chulym Turkic and Ket material comes from published texts in the series *Annotated folk and daily prose texts in the languages of the Ob-Yenisseic linguistic area* edited in Tomsk.

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1. The binary division of the Uralic languages is today considered doubtful by many. I however stick to the traditional view, i.e. that Proto-Samoyedic and Proto-Finno-Ugric are the immediate successors of Proto-Uralic.
2. It is still a matter of debate whether Northern and Southern Samoyedic represent genetic units. Here, the labels are used as mere technical terms, leaving this question open.

Figure 1: Languages of the Ob-Yenisei basin[3]

- Khanty texts (Filchenko & Potanina 2010, 2012, 2013; Filchenko et al. 2015; Filchenko 2017) – 1,434 utterances
- *Nganasan Spoken Language Corpus* (Brykina et al. 2018) – 21,723 utterances
- *INEL Selkup Corpus* (Brykina et al. 2020) – 7,887 utterances
- *INEL Dolgan Corpus* (Däbritz et al. 2019) – 11,329 utterances
- Chulym Turkic texts (Lemskaya 2010a, 2012, 2013, 2015, 2017) – 1,252 utterances
- *INEL Evenki Corpus* (Däbritz & Gusev, in preparation) – 8,052 utterances
- Ket texts (Kryukova & Glazunov 2010; Kryukova 2012, 2013, 2015; Kryukova & Nefedov 2017) – 669 utterances

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3. The map was created on the base of OpenStreetMap (https://www.openstreetmap.de/), which is published under the Open Database License (ODbL) 1.0.

Despite the database's imbalance, the given empirical data can surely support reaching the aims of the study at hand. Therefore, the corpora and text collections were searched electronically for the relevant feature, taking into account all data included. This ensures that no "false positives" are taken as evidence for an otherwise unattested phenomenon. Moreover, the analysis of corpora and text collections made it possible to detect phenomena that formerly were not described in grammars or other descriptive work.

Given the wide range of empirical data used in this study, some comments on their representation are in order here. As for transcription issues, I rely on the sources and do not attempt to unify transcription systems, although this might be against the Uralist tradition using FUT. However, since the paper deals with morphosyntax, the transcription itself can be regarded as secondary from my point of view. At some important points, I, however, comment on this. Coming to glossing, I basically also rely on the consulted sources. Nevertheless, when important for the problems discussed, some unifications have been made; these unifications are always mentioned explicitly.

The paper is structured as follows. In Section 2, some theoretical preliminaries as well as the typological framework adopted are touched upon. Section 3 deals with the description of number systems in the languages named above, dealing with each language separately. In Section 4, the results from the previous section are combined and evaluated: In Section 4.1, the main convergences and divergences are summed up. Section 4.2 deals with general number and its entailments, whereby it is shown that the concept of general number may be a key for understanding unmarked noun forms after numerals as well as unmarked noun forms denoting paired objects in the languages of the sample. In Section 4.3, singulatives in Ket, Selkup and Eastern Khanty are dealt with, and it is shown that their grammaticalization patterns are very similar. Section 4.4 investigates the interaction of number and animacy, demonstrating two splits on the animacy hierarchy, namely (1) between kin referents and non-kin human referents with respect to the availability of general number forms and (2) between first and second person referents in Dolgan and Chulym Turkic with respect to the availability of dual forms and the (ir)regularity of plural marking, respectively. Section 5 evaluates the results from an areal-typological perspective and comes to the conclusion that the category of number gives no clues for establishing an Ostyak or Ob-Yeniseic Sprachbund, regardless

of how many and which languages are potentially included. However, the singulative markers in Eastern Khanty, Selkup and Ket will be analyzed partly as contact phenomena, yielding a common Uralic-Yeniseian feature. Finally, Section 6 concludes the paper and gives a further outlook on upcoming related questions.

2. Theoretical preliminaries and typological background

As it is widely known, the nominal category[4] of *number* is concerned with the amount of extra-linguistic entities, i.e. referents, included into a certain state of affairs. Although intuitively it looks like a rather simple category, Corbett (2000: 1) claims that it is "the most underestimated of the grammatical categories". This can be easily illustrated: The number opposition *hippo* vs. *hippos* and its Kiswahili counterpart *kiboko* vs. *viboko* (cf. Hillewaert & de Schryver 2004) does not seem to pose any problems in describing number in English and Kiswahili respectively. Nevertheless, even in English – apparently the most well-known and well-studied language in the world – there are many instances of number marking which are much more intricate, cf. e.g. singular *sheep* vs. plural *sheep* or the possibility of non-agreement of subject and predicate in British English *The committee has/have decided* (Corbett 2000: 6). Thus, often one must take a closer look in order to understand the patterns of number marking in a given language properly.

Having settled the understanding of the category and the term *number*, it has to be clarified which meaning distinctions do occur within this category. These meaning distinctions can best be described as *number values* (Corbett 2000: 19–20). The number values important in this study are singular, dual and plural. According to Greenberg's (1966: 94) universal 34 they are hierarchically ranked, stating that a language can only have a dual when it has a plural. Additionally, in many languages, there are unmarked noun forms that are underspecified with respect to the category of number as seen in (1).

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4. Note that also (person-)number endings of verbs denote nominal number, since they point to entities referred to by nouns or pronouns. Verbal number, in turn, is concerned with the event structure of verbs, e.g. Rapanui (< Austronesian) *ruku* 'dive' vs. *ruku ruku* 'go diving' (Corbett 2000: 6). Here, only nominal number is dealt with.

Dolgan

(1) **D'ie͡**   *da*   *tup-put-a.*
     house   and   build-PST2-3SG
     'And he built a house.' ~ 'And he built houses.' ~ 'He was house-building.'
     (Däbritz et al. 2019; KiPP_XXXX_2009_Family_nar.KiPP.040)[5]

Here, only the lexical meaning of the noun is conveyed, without reference
to its number. In such cases, a singular and a plural reading of *d'ie͡* 'house'
may be available, but these are not mandatory. In the given example, refer-
ence to number is not important for the speaker, since she talks about her
husband's occupations in the past decades. The number of houses is not
relevant for the interpretation of the utterance, though the context surely
implies that more than one house was built. According to Corbett (2000:
9–10), this phenomenon is called *general number*, implying that *general
number* stands outside the number system itself, since it can possibly be
disambiguated into one or the other number value inherent to the system.
Another term used for the same phenomenon is *transnumeral* (Itturioz-
Leza & Skopeteas 2004: 1054–1055); I however will stick to *general number*
in this paper. In this context, also the phenomenon and term of *genericity*
is worth mentioning, which has to be clearly distinguished from general
number. Surely there are generic expressions like **the frog** *is an amphibian*,
which seem to function like general number. However, reference to a kind
is established here (see Krifka et al. 1995 for a detailed analysis), and no
reference to a certain group of frogs is possible, as it is in the case of general
number forms. Therefore, both phenomena and terms have to be kept apart.

   Finally, the formal expression of general number differs across lan-
guages. There are languages where general number forms differ from
all other number forms, e.g. Bayso (< Cushitic < Afro-Asiatic) *lúban*
'lion.GN' vs. *lubán-titi* 'lion-SG' vs. *luban-jaa* 'lion-PAUC' vs. *luban-jool*
'lion-PL' (Corbett 2000: 11). In many languages, on the other hand, gen-
eral number forms are homonymous to another number form (Corbett
2000: 13–16). Most frequently, general number forms are homonymous
to singular forms, as it is the case in the Dolgan example (1), too. This
leads to a discussion of *markedness* and its connection to number mark-
ing. Haspelmath (2006) rightfully advises caution when using this term
due to its many connotations and various uses in linguistic research. Here,

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5.   When data from corpora is cited, the reference to the respective utterance is given
      as follows: SpeakerCode_DateOfRecording_Title_Genre.NumberOfUtterance.

I will understand *markedness* as an indication of the low frequency of a given extra-linguistic concept resulting in higher prominence in linguistic representation. Thus, e.g. dual is a number value more marked than plural.

When it comes to number values, Haspelmath and Karjus (2017) argue that the least marked number value is not necessarily the singular, but it varies depending on the semantics of the given linguistic item. Therefore, nouns such as *day* tend to be used more frequently denoting a single entity, whereas nouns such as *pea* tend to be used more frequently denoting many entities (Haspelmath & Karjus 2017: 2). While in languages like English this does not make any difference for their encoding, e.g. Welsh (< Indo-European) has *pys* 'peas' as the basic form, from which the singulative form *pys-en* 'peas-SNGL' = 'pea' is formed (ibid.). Also from the perspective of markedness, Alexiadou (2019) claims that there are two types of languages with respect to number marking: In type I languages, such as English, the plural is the formally marked number value, but semantically unmarked, whereas in type II languages – e.g. Turkish – the plural is semantically marked. The main argument for this assumption is that in type I languages the use of the singular necessarily entails a singular interpretation, whereas the use of the plural – as in *Mary saw horses* – also allows the number-underspecified reading that Mary was "horse seeing"; in type II languages – as in the Dolgan example (1) – the latter reading is available with singular number (Alexiadou 2019: 126–128). Although in my view Alexiadou's (2019) binary division of languages is too strict, the underlying observations surely have to be acknowledged in number typology and will be relevant for the paper at hand, especially when discussing general number.

Coming to the formal properties of number marking, the most frequent strategies to express number are the following: use of number words, inflection of the relevant item (morphological strategy), agreement and lexical means (Corbett 2000: 133). Number words designate unbound number markers, e.g. Tagalog (< Austronesian) *mga bahay* 'PL house' = 'houses' (Corbett 2000: 134). The morphological strategy includes, roughly speaking, everything that happens to the morphological form of the relevant lexical item. This may include affixation, stem alternation, reduplication and zero expression. Agreement means that number is not expressed on the relevant lexical item itself, but somehow and somewhere else in the clause (Corbett 2000: 136). Typically, this includes subject (and object) agreement on the predicate, but also agreement between nouns and adnominal modifiers (adjectives, demonstratives or the like) is relevant. Finally, number

can be expressed by lexical means, called *suppletion* (Corbett 2000: 155), a good example being Russian *rebënok* 'child' vs. *deti* 'children', whereby, however, the latter also includes the plural marker *-i*. Here, two etymologically non-cognate stems form the base for expressing singular and plural respectively. Additionally, it is important to note that the described strategies are often hard to distinguish from one other and that often more than one strategy is used at the same time. Therefore, a careful and precise analysis also of the formal marking of number is in order.

The languages and language families under investigation here are not unstudied with respect to the number category. First of all, they are partly represented in the *World Atlas of Language Structures* (WALS), namely in Chapters 33A (Coding of nominal plurality, Dryer 2013), 34A (Occurrence of nominal plurality, Haspelmath 2013), and 35A (Plurality in independent personal pronouns, Daniel 2013). Dryer (2013) shows that nominal plurality is expressed via suffixation in Khanty, Selkup, Ewenki and Ket. Haspelmath (2013) claims that nominal plurality is obligatorily expressed on all kind of nouns (humans, animates, inanimates) in Selkup, Ewenki and Ket, if a referential plural reading is intended: In consequence, he claims that general number is absent in these languages, but leaves the possibility open that singular forms may be used in generic contexts.

As for Uralic languages, Honti's (1997) "Numerusprobleme" sums up much of the research that had been conducted in Uralic studies until then. According to Honti (1997: 2–3), three number values (singular, dual, plural) appear in the Uralic languages, where the singular is homonymous to a "Numerus absolutus / Numerus indefinitus", that is, to general number forms in the terminology adopted in the present paper. General number forms in Uralic languages occur *inter alia* after (a) numerals indicating plurality, (b) with paired items as e.g. paired body parts and (c) with items that usually occur in groups such as teeth, fingers but also some animals and plants (Honti 1997: 6). In contrast to general number, singular, dual and plural forms mark individualizable referents, whereby the dual additionally may have coordinating functions (Honti 1997: 3, 7–8). From a diachronic point of view, Honti (1997: 102) concludes that also Proto-Uralic exhibited general number, the relicts of which can be traced in many modern Uralic languages. Since then, not much research has been conducted on number marking in Uralic languages from a comparative – be it typological or diachronic – point of view, though in emerging grammatical descriptions the category of number is surely covered.

Going farther east, in recent years the term *Transeurasian languages*, coined by Lars Johanson and Martine Robbeets (2010: 1–2), has arisen in order to cover the Turkic, Tungusic and Mongolic language families (also taken together under the notion *Altaic languages*) as well as Korean and Japanese. In a recently published handbook, Gruntov and Mazo (2020: 527–528) account for the regular occurrence of singular and plural in Turkic and Tungusic languages in contrast to mere relics of a dual. Moreover, Gruntov and Mazo (2020: 532) claim that nouns in Transeurasian languages, including Turkic and Tungusic, usually exhibit "[…] neutral forms unmarked for plurality/singularity, that can indicate both singular or indefinite plurality depending on the context". Obviously, this is in line with the term *general number* used here. Generally, Gruntov and Mazo (2020) is supported by much preceding work, see e.g. the comparative overviews by Johanson (1998) and Benzing (1955). Investigating nominal morphology in Northern Eurasian languages, Janhunen (2014: 311–313) includes both the Uralic and the Transeurasian languages into a continuum of languages spoken in Northern Eurasia, labeled "Ural-Altaic", emphasizing that this term must not be understood in terms of genetic relationship. As for the category of number, Janhunen (2014: 315–316) states that from Northwest to Southeast the obligatoriness of number marking is decreasing.

Finally, the Yeniseian family – with its sole remaining representative Ket – was not included into any of these studies. Nevertheless, the category of number has not been left unexplored. Generally it can be stated that the number values singular and plural are recognized for the Yeniseian languages, and furthermore the plural formation is described as highly complex (see Porotova 1990 as well as Werner 1995: 86–91 for details). Additionally – and apparently in contrast to surrounding languages – the occurrence of singulatives has long been reported for Yeniseian languages (Werner 1995: 88; Helimski 2016: 158).

In a nutshell, it can be stated that general tendencies of number marking in the language families under investigation are quite well known. Nevertheless, investigations taking into account up-to-date typological perspectives are still rare. The latter, however, is what this paper aims at, and therefore the descriptions in Section 3 as well as the comparative views in Section 4 lay the focus on phenomena which are rather unexpected from both a typological and a language-internal perspective. The areal approaches touched upon here will be taken up again in Section 5.

3. Number systems of the analyzed languages

3.1. Eastern Khanty

Since Khanty is dialectally diversified to such an extent that the different varieties may be mutually unintelligible, one might even speak of different languages (Filchenko 2010: 10, 15–16). Only one bundle of varieties is dealt with here, namely Vasyugan, Yugan, and Alexandrovo (forming part of Eastern Khanty) described by Filchenko (2010). The reason for choosing these dialects is their close geographical vicinity to Central and Southern Selkup as well as Chulym Turkic.

In nominal inflection, Eastern Khanty exhibits three number values (singular, dual, and plural) that are marked via suffixation: the singular is unmarked while the dual and the plural have the suffixes *-ɣən* and *-(ə)t*, respectively (Filchenko 2010: 90). The suffixes remain unchanged when case suffixes are added, but when possessive suffixes are attached to the form, the dual suffix is *-(ə)ɣl*, and the plural suffix *-l* (Filchenko 2010: 92):

Eastern Khanty

(2)   ***ämpä-t***   *ʃəräɣ-wəl-t*
      dog-PL   noise-PRS-3PL
      'The dogs are making noise.' (Filchenko 2017: 54)

(3)   *män-nä* ***ämp-l-äm***   *we-s-im*
      1SG-COM **dog-PL-1SG**   take-PST-1SG.OBC
      'I took my dogs with me.' (Filchenko 2017: 54)

In addition, there are noun forms homonymous to the singular that are underspecified with respect to the category of number.

Eastern Khanty

(4)   […]   *qo*   *juɣ*   ***loɣo-l***   *al-a-wəl.*
          where   3SG   **bone-3SG**   lie-EP-PRS.3SG
      '[Nobody knows] where his bones are.' ~ ?'[Nobody knows] where his bone is.' (Filchenko et al. 2015: 72)

In the given context (boys looking for their dead father), it becomes clear that a plural reading is intended here. Khanty thus exhibits general number according to Corbett (2000), which stands outside the number system and may be disambiguated into one or the other number value.

Additionally, in the analyzed material there are few instances of the lexeme *sem* 'eye' used as a singulative marker, as displayed in example (5). The grammaticalized function of the lexeme can additionally be corroborated by the fact that it follows directly after the bare form of the noun it relates to, whereas in the case of the potentially similar item *səγəl'* 'tuft' an attributive form of the respective noun is used.

Eastern Khanty

(5) *pam-ə*   *səγəl' jomentʃ'əγ* **sem**   *əjqa*   *wəl-l-əγən.*
     grass-ATTR tuft   berry   **eye**   together   live-PRS-3DU
     'A tuft of grass and a berry live together.' (Filchenko et al. 2012: 56)

Mass nouns, group nouns, and abstract nouns only seldom take number suffixes due to their semantics (Filchenko 2010: 90). The unmarked form of nouns denoting paired objects refers to the respective pair and when referring to one single item, the quantifier *pələk* 'half' is used: *sem* 'pair of eyes' vs. *sem pələk* 'one single eye'. Plural forms of paired nouns are ambiguous, referring to either many single items of pairs or to many pairs as a whole (Filchenko 2010: 91).

In contrast to the highly regular number marking of nouns, personal pronouns exhibit a less transparent paradigm. Although the dual and plural forms may trace back to the same stem as the singular forms, they are irregularly formed from a synchronic point of view, since no dual or plural marker can be detected within them.

Table 1: Personal pronouns in Eastern Khanty (Filchenko 2010: 124)

	SG	DU	PL
1	*mä*	*min*	*məŋ*
2	*nöŋ*	*nin*	*nəŋ*
3	*joγ*	*jin*	*jəγ*

Within noun phrases, there is no number agreement of modifier and head noun as seen in (6).

Eastern Khanty

(6) a. **tʃu** *sart*   b. **tʃu** *sarta-**γəŋ***
       this pike   **this** pike-**DU**
       'this pike'   'these two pikes'

       (Filchenko 2010: 305)

After numerals and quantifiers nouns show no number marking (Filchenko 2010: 195) – whether these are general number or singular forms cannot be decided solely on the base of their form. This will be discussed in more detail in Section 4.2. In the case of the numeral *kät ~ kätqən* 'two'[6], however, the dual form of nouns occurs (ibid.).

Eastern Khanty

(7) […] ***kä***   *niŋ-**qən***   *män-nä*   *ju-s-ɣən.*
      two woman-**DU**   1SG-LOC   come-PST2-3DU
      '[While I was sitting,] two women came to me.' (Filchenko 2010: 195)

As for verbal paradigms, Eastern Khanty has two conjugations, traditionally called the subjective conjugation and the objective conjugation, respectively. The subjective conjugation establishes only subject agreement, while the objective conjugation establishes also subject agreement and partial (only number, no person) object agreement. Hence, in verbal paradigms in Eastern Khanty, number agreement of both subjects and objects may be indicated (Filchenko 2010: 271, 273). Subject reference is unambiguous for all persons and numbers, and the third person suffixes of the subjective conjugation (3DU *-ɣən*, 3PL *-(ə)t*) are identical to the nominal dual and plural suffixes (Filchenko 2010: 271). The number markers of object reference (dual *-(ə)ɣl*, plural *-l*) are identical to the number markers used together with possessive suffixes (Filchenko 2010: 273).

Number agreement in the verb phrase is obligatory for both nominal and pronominal subjects (Filchenko 2010: 328). In the case of objects, this holds true for pronominal objects but appears to vary in the case of nominal objects: Although Filchenko (2010: 274) accounts for object number agreement (8a), in the analyzed material many instances without object number agreement can be found as well (8b).

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6. The forms *kät* and *kätqən* differ in their syntax: the former is used as modifier in noun phrases, the latter in all other positions. Note that the latter form *kätqən* itself is a combination of *kät* and the dual marker *-qən* (Honti 1984: 76–77). The final consonant of *kät* may additionally be omitted when there is a consonant onset in the following word like in example (7). This pattern has clear parallels in the other Ugric languages (cf. Mansi *kit ~ kitiɣ* (Keresztes 1998: 412) and Hungarian *két* vs. *kettő*). Additionally, in Mari the numerals up to 20 show the same distribution of forms (Alhoniemi 2010: 96–97).

Eastern Khanty

(8) a. *mä* *wajaɣ-ət* *wel-s-**əl-am***
    1SG   animal-PL   kill-PST-**PL-1SG.OBC**
    'I killed the animals.' (Filchenko 2010: 274)

b. *Qolla šaj-at,* *qolla* *majlanta šaj-wal* *patr-**il**.*
    all   thing-PL all   present thing-PL.3PL put.PST-**3PL.OBC**
    'All the things, all the presents, they packed their things.'
    (Filchenko et al. 2015: 54)

Finally, a further usage of the dual should be mentioned. The dual suffix can be used in order to coordinate two nominal constituents, and in doing so it is attached to both constituents. A corresponding predicate also shows dual number marking then.

Eastern Khanty

(9) *Kimtaki* *qotl-a*   **im-ki**   **rätʃ-ken**   *ʧu*
    second   day-ILL   **old.woman-DU** **old.man-DU** this

    puɣl-a   *joɣto-**qon**.*
    village-ILL   reach-**PST.3DU**
    'On the second day the wife and the husband reached that village.'
    (Filchenko et al. 2015: 57)

3.2. Nganasan

In nominal inflection, Nganasan exhibits the three number values singular, dual and plural. The singular is zero-marked. The dual has the suffix *-kəj ~ -gəj* in the nominative case, *-ki ~ -gi* in oblique cases and *-kəi ~ -gəi* in possessive forms. The plural has the suffix *-ʔ* in the nominative case and *-j* in oblique and possessive forms; the latter often is fused with case and possessive suffixes. Furthermore, in oblique and possessive plural forms, portmanteau morphemes occur.

Nganasan

(10) a. *kümaa*   b. *kümaa-**ʔ***   c. *kümaa-**j***
    knife   knife-**PL**   knife-**PL.ACC**
    (Wagner-Nagy 2019: 185, 192–193)

According to Wagner-Nagy (2019: 186), however, Nganasan exhibits nouns unmarked for number "if the NP has no specific referent". This certainly

qualifies for generic contexts, but it may possibly also hint at general number in the sense of Corbett (2000), as demonstrated in (11). Here, not the number of reindeer included into the state of affairs is important for the speaker, but the fact itself that they will be visible. The form *babi* 'wild.reindeer.ACC' may be analyzed as underspecified for the category of number and, thus, as a general number form.

Nganasan

(11) **Babi** *ŋəndīai?* *kat'əmə-suðə-ŋ.*
wild.reindeer.ACC probably see-FUT-2SG
'You'll probably see a wild reindeer.' ~ 'You'll probably see wild reindeer.' (Brykina et al. 2018; MVL_090807_Hungabtadja_flks.306)

However, it has to be stated that in Nganasan such contexts are less frequent than in the other Uralic as well as Turkic languages under investigation here.

An important trait of number marking in Nganasan is the incompleteness of the dual paradigm: out of the eight cases of Nganasan only the three grammatical cases nominative, genitive and accusative exhibit synthetic dual marking. In the other cases a postpositional construction is used, the base noun in the genitive preceding it. This can be exemplified with the genitive and locative case forms of *kümaa* 'knife'.

Nganasan

(12) a. *kümaa*
knife.SG.GEN
'of a/the knife'

b. *kümaa-tənu*
knife-SG.LOC
'on a/the knife; with a/the knife'

c. *kümaa-gi*
knife-DU.GEN
'of two/both knives'

d. *kümaa-gi* *na-nu*
knife-DU.GEN near-LOC
'on two/both knives; with two/both knives'

e. *kümau-?*
knife-PL.GEN
'of (the) knives'
(Wagner-Nagy 2019: 191–193)

f. *kümaa-tinü*
knife-PL.LOC
'on (the) knives; with (the) knives'

Abstract nouns exhibit only singular forms; nouns denoting paired objects behave like other nouns, i.e., singular number refers to one part of the pair, and dual number refers to the entire pair (Wagner-Nagy 2019: 186).

Nganasan

(13) *Mənə*   *ŋuə-l'aa*   **s'ejmi-mə.**
      1SG.GEN   one-LIM   **eye-1SG**
      'I have only one eye.'
      (Brykina et al. 2018; MVL_080304_NjomuKamleguNy_flks.395)

(14) **S'ejmi-gəj-t'ə**   *t'il'i-s'itə.*
      eye-DU-ACC.2SG   peck-FUT.3SG
      'It'll peck your eyes out.'
      (Brykina et al. 2018; PKK_71_OneTent_flkd.033)

Additionally, the dual forms *d'esi-gəj* 'father-DU' and *ńemi-gəj* 'mother-DU'
have the meaning 'parents' (Wagner-Nagy 2019: 186–187). In combination
with dyadic kinship terms such as wife/husband or sister/brother, the dual
also may refer to the given referent together with his/her opposite kin.
However, in this case also a concomitant dyadic marker is used (Wagner-
Nagy & Arkhipov 2020: 435–436).

Nganasan

(15) […] *nɨ-səd'ə-**gəj***   *n'iri-l'i͡ai-ʔ*   *küðü-ʔü͡a-gəj,*
      woman-DYA-**DU**   together-LIM-ADV   get.up-AOR-3DU

      *n'emi-**gəi**-t'i.*
      mother-**DU**-3SG
      '[…] wife and husband got up together, his parents.'
      (Brykina et al. 2018; TKF_990819_SomatuShaman_flkd.094)

Therefore, nominal number marking is quite regular in Nganasan. Note
that number marking is largely identical in non-possessive oblique forms
on the one hand and possessive forms on the other hand (see Däbritz 2017
for details). Personal pronouns can be split into first as well as second per-
son pronouns, and third person pronouns. The first and second person
pronouns behave irregularly from a synchronic point of view; the third
person pronoun is a combination of the noun *siʔ* 'portrayal; picture;
image' and the respective possessive suffix (Wagner-Nagy 2019: 106).

Table 2: Personal pronouns in Nganasan

	SG	DU	PL
1	*mənə*	*mii*	*miŋ*
2	*tənə*	*tii*	*tiŋ*
3	*sɨtɨ*	*sɨtɨ*	*sɨtɨŋ*

Within the noun phrase, number agreement is obligatory, as demonstrated in (16).

Nganasan

(16) a. *aniʔka   maʔ*   b. *aniʔka-**gəj** ma-**kəj*** c. *aniʔka-**ʔ**   maðə-**ʔ***
       big   tent   big-**DU**   tent-**DU**   big-**PL**   tent-**PL**
       'a/the big tent'   'two/both big tents'   '(the) big tents'
       (Wagner-Nagy 2019: 309)

After quantifiers and numerals greater than one, usually singular forms occur. As a variant, the numeral *s'iti* can be followed by the dual form of the noun, and numerals greater than two can be followed by plural forms.

Nganasan

(17) a. *s'iti   səmu*   ~   *s'iti   səmu-**gəj***
        two   cap   two   cap-**DU**
        'two caps'

   b. *nagür   səmu*   ~   *nagür   səmu-**ʔ***
      three   cap   three   cap-**PL**
      'three caps'
      (Wagner-Nagy 2019: 158)

In verbal paradigms, number agreement of both subject and object is expressed. The third person suffixes of the subjective conjugation are zero (singular), *-kəi ~ -gəi* (dual) and *-ʔ* (plural) (Wagner-Nagy 2019: 229), the latter two being identical to the dual and plural marker in nominal inflection. In the objective conjugation, dual and plural objects are referred to with *-kəi ~ -gəi* and *-j* (which is often fused with person markers here), thus, the marking is similar to possessees in nominal inflection, as it is the case in Eastern Khanty, too.

   Number agreement in the verb phrase is obligatory in Nganasan for both nominal and pronominal subjects (Wagner-Nagy 2019: 364). If the verb is inflected in the objective conjugation, number agreement is obligatory for both nominal and pronominal third person objects, too (Wagner-Nagy 2019: 230). Example (18) shows number agreement of both subject and object.

Nganasan

(18) *Bənsə-**gəj**   tə   ŋəm-hṷ͡aðu-**kəi-t'ü**.*
      all-**DU**   well   eat.up-INFER-**DU-3SG.OBC**
      'She has apparently eaten both of them.'
      (Brykina et al. 2018; MVL_080226_TwoHorses_flks.132)

3.3. Selkup

Selkup exhibits considerable dialectal variation, the main divisions being between Northern, Central and Southern dialects. Since – unlike in the case of Khanty – all varieties are potential contact varieties to other languages included in the sample here, all three dialect groups are described.

Selkup has three number values in nominal inflection (singular, dual, and plural), exhibiting considerable dialectal variation. Table 3 summarizes the number markers in the main dialect groups (Kuznecova et al. 1980: 167–170; Bekker 1995: 46).

Table 3: Number marking in Selkup dialects[a]

	SG	DU	PL
Northern	-∅	*-qı*	*-t ~ -n*[b], *-iː*
Central	-∅	*-štja*	*-t, -la, (-iː)*
Southern	-∅	*-qi, -stayi, -ja*	*-t, -la*

a. For the sake of comprehensiveness, not all (mor)phonological variants and allomorphs are given here.
b. *-t ~ -n* is a seemingly free plosive–nasal alternation (Kuznecova et al. 1980: 143–144).

Additionally, Kuznecova et al. (1980: 167) point out that nominal forms unmarked for number are not necessarily singular forms but can be underspecified. According to the terminology used here, these are general number forms, as seen in (19) from Northern Selkup. Here, it becomes clear only from the following context that the speech is about three knives, but in the given sentence, number reference is apparently not important for the understanding of the utterance.

Northern Selkup

(19)   ***Paŋi-mit***   *qaj*   *əmilti-mni-mit.*
       knife-1PL   whether   forget-PST.NAR-1PL
       'We forgot our knife, though.' ~ 'We forgot our knives, though.'
       (Brykina et al. 2020; SAI_1965_Palna_flk.074)

Not surprisingly, abstract and mass nouns hardly occur in non-singular forms. In order to single out a referent from a mass noun, there is the singulative suffix *-laka ~ -laga*, e.g. *čoš-i-laka* 'fat-EP-SNGL' = 'a piece of fat' ← *čoš* 'fat' (Kuznecova et al. 1980: 168; example from Brykina et al. 2020, KR_1969_RavensAndHares1_flk.008). Additionally, the lexeme *saj ~ haj* 'eye' can be used in this function (Beáta Wagner-Nagy, p.c.), e.g. *tü haj* lit. 'fire eye' = 'spark' (example from Brykina et al. 2020, YIF_1965_Kamadzha1_flk.050). Paired objects in the singular refer to the whole pair; if one item of the pair is referred to, an adjectivized form of the quantifier *pɛläk* 'half' is used, e.g. *pɛlä-l' tol'cɨ* 'half-ADJZ ski' = 'one ski' (Kuznecova et al. 1980: 168).

Like in Nganasan, the dual – together with a special dyadic marker – is involved in expressing dyadic kinship terms, i.e. the given referent and her/his opposite kin are referred to (Wagner-Nagy & Arkhipov 2020: 436–439). Interestingly, the term for 'parents' is exclusively formed from the term for 'mother' in the analyzed material, e.g. *ämi-si-qäqɨ* 'mother-DYA-DU' (example from Brykina et al. 2020, KR_196X_RavensAndHares2_flk.013).

In personal pronouns, a clear distinction between first and second person forms on the one hand and third person forms on the other hand is observed: The former have irregular dual and plural forms, whereas the latter add the usual dual and plural markers to the third person singular pronoun (Kuznecova et al. 1980: 288). Here it can be additionally said that the third person pronouns diachronically can be traced back to a demonstrative, cf. Selkup *tap ~ tam* 'this' (Kuznecova et al. 1980: 293). Table 4 shows the personal pronouns of Northern Selkup.

Table 4: Personal pronouns in Northern Selkup

	SG	DU	PL
1	*man ~ mat*	*meː*	*meː*
2	*tan ~ tat*	*tɛː*	*tɛː*
3	*təp ~ tən*	*təpäː-qɨ*	*təpɨ-t ~ təpɨ-n*

Noun phrases exhibit no number agreement (Kuznecova et al. 1980: 267), as demonstrated in (20).

Southern Selkup

(20) *Tü-sa-ŋ*   **arin**   *qu-**la**-ne.*
      come-PST-1SG **foreign**   human-**PL**-ALL
      'I came to the strangers.'
      (Brykina et al. 2020; KMS_196X_Lifestory_nar.013)

After numerals and quantifiers, usually the unmarked form of nouns is used (Kuznecova et al. 1980: 167). After the numeral *šittɨ ~ šittə ~ šədə* 'two', however, also dual forms may occur (Kuznecova et al. 1980: 169). The material analyzed here (Brykina et al. 2020) shows that this is most frequent in Northern Selkup dialects when denoting human referents. The exact patterns of dual marking after *šittɨ ~ šittə ~ šədə* 'two', however, call for further research.

Northern Selkup

(21) *Toːna* **šittɨ** *qum-oː-**qɨ***   *ilɨ-mpɔː-**qɨ**.*
      that   **two**   human-EP-**DU**   live-PST.NAR-**3DU**
      'Those two people lived.'
      (Brykina et al. 2020; NEP_1965_OrphanBoyAndPanOldMan1_flk.136)

In verbal paradigms, person and number of the subject is expressed regularly. Though Selkup exhibits an objective conjugation, neither person nor number of the object is cross-referenced (Kuznecova et al. 1980: 234–235). Instead, only the existence of a direct object is indicated.[7] In verb phrases, subject and predicate nearly always agree in number in the analyzed material (Brykina et al. 2020), be the subject nominal or pronominal.

3.4. Dolgan

In the Dolgan number system, two number values are expressed: singular and plural. In nominal inflection, the singular is unmarked, and the plural has the suffix *-LAr*, which can clearly be separated from case and possessive suffixes in oblique forms (Artemjev 2013: 26–27, 51). Two lexemes exhibit

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7. The usage of the objective conjugation is far from clear and will not be investigated further here. Supposedly, it is motivated by information structural phenomena.

an irregular stem extension in their plural form, namely *kirgittar* 'girls' (vs. *kïːs* 'girl'), *ûolattar* 'boys' (vs. *ûol* 'boy') (Artemjev 2013: 29); otherwise plural marking is completely regular.

Apart from that, there are instances described as singular forms that can have plural reference (Artemjev 2013: 26), cf. (1) repeated here for convenience:

Dolgan

(22) **D'iê**   da   tup-put-a.
      house   and   build-PST2-3SG

      'And he built a house.' ~ 'And he built houses.' ~ 'He was house-building.'
      (Däbritz et al. 2019; KiPP_XXXX_2009_Family_nar.KiPP.040)

As was already discussed in Section 2, number reference is not important here for the speaker. Although the following context suggests a plural reading, the form can be regarded as underspecified, which indicates general number. From a broader perspective, this phenomenon is quite common in Turkic languages (Johanson 1998: 38, 51).

Mass nouns as well as nouns referring to paired objects occur in the singular (Artemjev 2013: 26, 28). When one single item of a pair is referred to, the lexeme *aŋaːr* 'half' is used as a quantifier:

Dolgan

(23) *Bu   kïːs kajïh-ar,*   *onto* **aŋaːr karak-taːk** *e-bit.*
      this girl look.around-PRS.3SG then **half   eye-PROPR** be-PST2.3SG

      'This girl looks around, and apparently she has one eye.'
      (Däbritz et al. 2019; BaA_1930_OneEyedGirl_flk.013)

In nominal possessive inflection, it is noticeable that plural marking of possessor and possessee is identical in the third person, yielding homonymous forms (Artemjev 2013: 31–32). Only the context can disambiguate this homonymy.

Dolgan

(24) a. *taba-ta*   b. *taba-lar-a*
        reindeer-3SG   reindeer-PL-3SG

        'his/her one reindeer'   'his/her many reindeer' ~ 'their one
                                        reindeer' ~ 'their many reindeer'
        (Artemjev 2013: 31–32, own glossing and translation)

In the paradigm of personal pronouns, the plural forms of first and second person pronouns are irregularly formed, but the plural form of the third person pronoun is built with the usual plural marker *-LAr* (Artemjev 2013: 138).

Table 5: Personal pronouns in Dolgan

	SG	PL
1	*min*	*bihigi*
2	*en*	*ehigi*
3	*gini*	*giniler*

Within noun phrases, there is no agreement (Artemjev et al. 2013: 60–62); after numerals and quantifiers, unmarked forms of the noun occur, e.g. *biês kün* lit. 'five day' = 'five days' (Artemjev 2013: 125).

In verbal paradigms, person and number of the subject is expressed systematically. The third person plural marker is homonymous to the usual plural marker *-LAr* in one set of endings, and homonymous to the possessive suffix of the third person plural *-LArA* in the second set of endings (Artemjev 2013: 202).[8] Number agreement of both nominal and pronominal subjects with the predicate in verb phrases is obligatory according to the material analyzed here (Däbritz et al. 2019).

Finally, two traces of dual marking can be observed in Dolgan. First, there is the item *bihikki* 'I together with another person', whose categorical status is rather unclear. It occurs together with nouns and personal pronouns and is always postposed. Historically, it is a contraction of *bihigi* 'we' and *ikki* 'two' (Däbritz 2019: 9). Second, in the imperative paradigm, there is a separate dual form in the first person (Däbritz 2019: 10). Example (25) demonstrates both phenomena.

Dolgan

(25) *Biːr d'iê-ge   d'iê-len-**iek**   en   **bihikki**.*
      one   house-DAT.LOC   house-VBZ-**IMP.1DU**   2SG   **we.two**
      'Let us [two] [= you and me] live together in one house.'
      (Däbritz et al. 2019; ErSV_1964_WarBirdsAnimals_flk.046)

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8. As is typical of Turkic languages, there are two sets of person–number endings in Dolgan. One set of endings, the so-called "pronominal endings" are used together with nominal predicates as well as in one part of the tense–aspect–mood forms. The other ending set, the so-called "possessive endings" are used with possessed nouns as well as in the other part of tense–aspect–mood forms.

3.5. Chulym Turkic

Chulym Turkic has two number values, namely singular and plural. In nominal inflection, the former is unmarked while the latter has the marker *-LAr* (Birjukovič 1979: 68). In addition, Birjukovič (1978: 69) states that singular forms can have plural reading. According to the terminology adopted here, these are instances of general number, as seen in (26).

Chulym Turkic

(26)   *Aran   išt-ɨn-da   **čɨlya**.*
        yard   interior-3SG-LOC **horse**
        'Inside the yard there [is] a horse.' ~ 'Inside the yard there [are] horses.' (Lemskaya 2015: 228)

Once more, only the context can disambiguate the clause, if necessary. Here, a plural reading is intended.

The nominal plural paradigm is principally regular but exhibits peculiarities in marking third person plural possessors and possessees: plural possessors are not regularly expressed in the third person, *pala:-zɨ* 'child-3' can mean either 'his/her child' or 'their child' (Birjukovič 1979: 12–13). This is a clear deviation from the standard Turkic pattern, since the possessive suffix of the third person plural usually contains the plural marker *-LAr* (Johanson 1998: 39), as e.g. in Dolgan (see above). Since plural possessees are expressed with the usual plural marker, the form *pala:-lar-ɨ* 'child-PL-3' means either 'his/her children' or 'their children'. Interestingly, the Upper Chulym dialect disambiguates these forms by using different allomorphs of the plural morpheme, e.g. *qaraq-**tor**-u* 'eye-PL.POSS-3', which, according to Anderson and Harrison (2006: 53–54), means 'their eye' but not *'his/her/their eyes' – the morphonologically expected form *qaraq-**tar**-ɨ* 'eye-PL-3', in turn, has the latter reading.

Personal pronouns have an irregular plural form in the first person but regularly built forms in the second and third person (Li et al. 2008: 37).

Table 6: Personal pronouns in Chulym Turkic

	SG	PL
1	*män*	*pis*
2	*sän*	*silär*
3	*ol*	*olar*

In this context it can be mentioned that the plural marker *-LAr* occurs also in the possessive suffix of the second person plural *-(I)ŋnAr*, but not in the possessive suffix of the third person plural *-(z)I* (Birjukovič 1979: 61; Li et al. 2008: 34).

Within noun phrases, there is no number agreement, i.e. adjectives or demonstratives modifying a noun show no plural marking (Li et al. 2008: 40, 47).

In verbal paradigms, person and number is expressed systematically. The plural marker *-LAr* is present in the forms of both the second and third person plural (Li et al. 2008: 68). In the first person non-singular imperative, there are the two forms *-(A)q* and *-(A)qtAr* (Li et al. 2008: 81). According to Lemskaya (2010b: 122–123) it is not yet settled whether dual and plural (like in Dolgan, see Section 3.4) or minimal and augmented inclusiveness are expressed here. In either case, *-(A)qtAr* can readily be seen as a combination of *-(A)q* and the plural marker *-LAr*.

In the verb phrase, number agreement of a nominal subject and the predicate is possible, but it is not obligatory in the analyzed material. In example (27), there is plural marking on the subject, but the predicate points to the zero-marked third person singular.

Chulym Turkic

(27)   ***Kiži-l'är***   *anɨ*   *ištiːn-in*   *suɣr-up*
       human-PL   3SG.ACC   trousers-ACC.POSS.3   remove-CVB

       *sal-**ɣan***
       put.AUX-**PST.3SG**
       'People removed him his trousers.'
       (Lemskaya 2015: 231, glossing adapted)

Number agreement of pronominal subjects and the predicate, however, is obligatory.

3.6. Ewenki

Ewenki exhibits much dialectal variation. Here, only those varieties are discussed that have potential contacts with other languages in the scope of the paper, namely Northern Ewenki (contacts with Nganasan and Dolgan) as well as Southern Ewenki (contacts with Selkup and Ket), and which are represented in the analyzed material (Däbritz & Gusev, in preparation). As for number marking, the available grammatical descriptions do not point to dialectal differences. However, since Eastern Ewenki is not included, no empirical observations can be made here regarding potential divergences.

Ewenki has two number values, namely singular and plural. The former is unmarked, the latter has the suffix *-l ~ -r* (Bulatova & Grenoble 1999: 6; Nedjalkov 1997: 141). However, in the case of mostly kinship terms, also the suffixes *-sal ~ -hal*[9] as well as *-til* are used (Bulatova & Grenoble 1999: 7). According to Vasilevič (1958: 672), there are relicts of a dual in some Southern dialects (suffix *-ti*). The material analyzed here (Däbritz & Gusev, in preparation), however, does not support this. Case marking of plural forms is completely regular (Bulatova & Grenoble 1999: 8; Nedjalkov 1997: 142).

Mass and abstract nouns do not show plural forms (Vasilevič 1958: 672). Nouns denoting paired objects behave like other nouns, that is, one item of the pair is referred to with the singular form, both items are referred to with the plural form.

Southern Ewenki

(28) *Muṛịwul*   **ŋaːlạ-t-pị**   *kultu-rä-n,*   **ŋaːlạ-n**
      Muriwul   **hand-INS-REFL.POSS** hit-AOR-3SG   **hand-3SG**

      laŋgara-ra-n.
      stick-AOR-3SG

      'Muriwul hit with [one] hand, his hand got stuck.'
      (Däbritz & Gusev, in preparation; KS_1930_Muriwul_flk.203)

According to Konstantinova (1964: 44), singular forms marked with the indefinite accusative case can have a plural reading. This applies if the given referents form a homogenous group, eventually standing in a row with other similar groups. The material analyzed here (Däbritz & Gusev, in preparation) shows such instances rarely, nevertheless some examples can be found.

Northern Ewenki

(29) *D'iktə-jə*   *d'əp-i-ŋnə-m.*
      berry-ACC.INDF   eat-EP-HAB.AOR-1SG

      'I used to eat berries.'
      (Däbritz & Gusev, in preparation; KN_192X_Pereden_flk.019)

Applying Haspelmath and Karjus' (2017) markedness approach, berries and similar items (nuts, herbs, but also animals that are hunted) are more likely to appear in semantically plural contexts than in semantically singular contexts (see the discussion of *pea* in Section 2). That makes their linguistic expressions prone to be unmarked, when a plural reading is

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9. *s ~ h* is due to dialectal variation, the former occurring in Eastern and Southern dialects, the latter in Northern dialects.

intended. Given the fact that berries and e.g. fish are more likely to cor-
respond to proto-patient roles (see Dowty 1991), it is not surprising that
direct objects appear in the given contexts rather than e.g. subjects. How-
ever, it cannot ultimately be said whether this is a matter of frequency,
or whether unmarked nominative forms with a plural reading are impos-
sible in Ewenki. In any case, it can be concluded that there are instances of
general number in Ewenki, but they are far more restricted than in other
languages investigated here.

The plural personal pronouns of the first and second person are formed
irregularly. In the first person, there is an inclusive and an exclusive form.
The third person plural pronoun is formed on the basis of the third per-
son singular pronoun, to which the plural marker *-r* (a regular allomorph
of *-l*) as well as the possessive suffix of the third person plural *-tin* is added.
Interestingly, in the unpublished Ewenki material collected by K. M. Rych-
kov[10] the possessive suffix is sometimes missing from this form. Table 7
shows the personal pronouns in Ewenki (Nedjalkov 1997: 196).

Table 7: Personal pronouns in Ewenki

	SG	PL	
1	*biː*	EXCL	*buː*
		INCL	*mit*
2	*siː ~ hiː*	*suː ~ huː*	
3	*nuŋan*	*nuŋartin*	

According to Bulatova and Grenoble (1999: 57) and Nedjalkov (1997: 277),
there is obligatory number agreement within noun phrases. The material
analyzed here, however, does not exhibit clear patterns in this respect. In
the case of adjectives, the pattern exhibiting agreement (30a) is more fre-
quent than the pattern without agreement (30b) in the analyzed material.
In the case of demonstratives, however, the pattern exhibiting agreement
(31a) is less frequent than the pattern without agreement (31b).

10. The material is stored at the Institute of Oriental Manuscripts of the Russian
Academy of Sciences (IVR RAN) in Moscow. Parts of it will be published in
the INEL Evenki Corpus (Däbritz & Gusev, in preparation).

Northern Ewenki

(30) a. [NP *Aja-**l**-du*   *ilə-**l**-du̧*]   *bu̧:-čə:-s*   *minə* […].
    good-**PL**-DAT.LOC   person-**PL**-DAT.LOC   give-PST-2SG   1SG.ACC
    'You gave me to good people […].'
    (Däbritz & Gusev, in preparation; KI_1931_Woman_flk.025)

  b. [NP *Omakta-du*   *dundə-**l**-du*]   *lawikta*   *kətə*   *bi-so-n.*
    new-DAT.LOC   place-**PL**-DAT.LOC   lichen   many   be-PST-3SG
    'At the new places, there were many lichens.' (Däbritz & Gusev, in
    preparation; BTV_20190822_ReindeerRuns_flk.018)

(31) a. *Hu̧ru̧-rə*   *d'u:-la:-wər*   [NP *tar-i̧:-**l***   *bəjə-**l***].
    leave-AOR.3PL   house-LAT-REFL.POSS.PL   that-EP-**PL**   man-**PL**
    'Those men went home.'
    (Däbritz & Gusev, in preparation; MN_1931_Ogre_flk.033)

Southern Ewenki

  b. [NP *Tar*   *bəjə-**l***]   *gu̧-l-d'ɾə:*   […].
    that   human-**PL**   say-INCH-AOR.3PL
    'Those humans said: […].'
    (Däbritz & Gusev, in preparation; KSh_1930_LowerWorld_flk.019)

Both Vasilevič (1948: 13) and the material analyzed here account for a dia-
lectal distribution of (non-)agreement in Ewenki noun phrases: Northern
Ewenki dialects – especially those dialects on the Taimyr Peninsula which
are in close contact with Dolgan – tend to exhibit no agreement, whereas
Southern Ewenki dialects tend to exhibit agreement. Probably, the latter
pattern can be regarded as inherited, since other Tungusic languages ex-
hibit it as well (Benzing 1955: 149). Consequently, the former non-agreeing
pattern in Northern Ewenki dialects appears to be influenced by the sur-
rounding non-agreeing patterns in Dolgan and Sakha. Given the close
contacts between Ewenki with Dolgan and Sakha, this scenario seems to
be entirely plausible. Nevertheless, the agreement patterns of Ewenki defi-
nitely call for further research in order to explain the observed variation
in more detail.

    In verbal paradigms, both person and number are expressed systemati-
cally. Number marking in third person verbal forms is worth commenting
on, since there are two sets of person–number endings in Ewenki. One
ending set, the so-called "pronominal endings" occur in one part of the
tense–aspect–mood forms. The other ending set, the so-called "possessive

endings" occur on possessed nouns as well as in the other part of tense–aspect–mood forms. In the former set, the third person singular is marked with *-n* while the third person plural has a zero morpheme, cf. *əmə-rə-n* 'come-AOR-3SG' vs. *əmə-rə* 'come-AOR.3PL' (Bulatova & Grenoble 1999: 33; Konstantinova 1964: 170–171), something that is counterintuitive and typologically uncommon given the higher markedness of the plural compared to the singular. In the latter set of endings, the third person forms are homonymous with the corresponding possessive suffixes (*-n* and *-tin* respectively). In verb phrases, number agreement of target and controller is obligatory in the analyzed material (Däbritz & Gusev, in preparation). This holds true for both nominal and pronominal subjects.

3.7. Ket

The Ket language is usually divided into three dialects (Northern, Central and Southern Ket), and these dialects seem to differ mostly in phonetics and lexicon (Werner 1997a: 1–2; Vajda 2004: 4; Georg 2007: 20–22). All mentioned grammatical descriptions are based on the Southern Ket dialect, which this paper also follows.

Ket nouns exhibit two number values, namely an unmarked singular and a marked plural (Werner 1997a: 96; Vajda 2004: 19; Georg 2007: 91). Plural marking is complex, including suffixation with *-(V)n ~ -(V)ŋ*[11], tonal changes[12] (e.g. *qóqbun* 'cuckoo' : *qòqbun* 'cuckoos'), stem alternations ("Ablaut") and in a few cases suppletion (Werner 1997a: 96–99; Vajda 2004: 19–20; Georg 2007: 93–100). A few nouns, e.g. *baˀn* 'duck(s)' or *sūj* 'mosquito(s)', have no morphologically marked plural form, but nevertheless they do distinguish singular from plural, on the one hand via subject and object agreement in the verb phrase (see below), on the other hand via "plural" case suffixes (Vajda 2004: 20; Georg 2007: 97). Therefore, this phenomenon does not qualify for general number in the sense of Corbett (2000).

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11. The distribution of the two suffixes is not entirely settled. However, there seems to be the interesting tendency that animate nouns take *-n*, whereas most inanimate nouns take *-ŋ* (Vajda 2004: 19; Georg 2007: 93).
12. Ket is a tone language. The notation of tones here follows mostly Georg (2007: 47, 56). The following tones may occur: V̄ (even or slightly rising tone), Vˀ (shortly rising tone, accompanied by pharyngeal constriction), VV (rising–falling tone), V̀ (sharply falling tone), and V́ (rising tone).

Several nouns denoting paired objects distinguish three number forms, cf. *ókde* 'ear' vs. *ókde-n* 'ear-PL' = 'a pair of ears' vs. *ókde-n-iŋ* 'ear-PL-PL' = 'many ears'. According to Georg (2007: 92), these are traces of a "natural dual, or paral". In my view, this is misleading, since these terms would stand to reason having the paired object as base form, and not one part of it. The double occurrence of the plural suffix rather points to composed number (see Corbett 2000: 36), whereby, however, it remains open whether *ókde-n-iŋ* 'ear-PL-PL' can also have the meaning 'many pairs of ears'. This is even more complicated by the possibility of referring to one single part of the pair by using the word *qóleb* 'half', as seen in (32).

Southern Ket

(32) *Bú-da*   *qi:m* **qóleb-des** *òbilda.*
      he-GEN.M   wife   **half-eye**   COP.PST.SG
      'His wife had only one eye.' (Georg 2007: 92)

This pattern, in turn, implies that the entire pair is referred to by the unmarked noun form. Thus, a closer investigation into the semantics of the forms would be necessary, especially regarding the meaning distinction "many pairs of X" vs. "many single items of X".

Besides singular and plural, Ket exhibits the possibility of forming singulatives from mass nouns. The suffixes used here are *-dis* and *-lamt*, which are grammaticalized from *dēs* 'eye' and *lámt(a)* 'piece' respectively, e.g. *hónaŋdis* 'grain of sand' ← *hónaŋ* 'sand' and *sújiŋlamt* 'rag' ← *sújiŋ* 'fabric' (Georg 2007: 132–133; Helimski 2016: 158–159).

The plural paradigm of nouns is, apart from assimilation processes (*d > n* after the plural marker *-(V)n ~ -(V)ŋ*, e.g. *hík-da* 'man-GEN' : *hík-en-na* 'man-PL-GEN'), regular (Werner 1997a: 104; Vajda 2004: 21; Georg 2007: 104–105). The plural forms of personal pronouns are formed regularly in Ket, too. In all three persons the plural marker *-(V)n ~ -(V)ŋ* is – besides regular stem alternations – clearly detectable (Georg 2007: 164). Table 8 shows the personal pronouns in Ket.

Table 8: Personal pronouns in Ket

	SG	PL
1	*ād*	*ə́tn*
2	*ū(k)*	*ə́kŋ*
3	*bū*	*būŋ*

According to Vajda (2004: 80) and Georg (2007: 138) a small class of adjectives, e.g. *qà* 'big', may agree with their head noun. As for demonstratives, Vajda (2004: 80) states that they agree regularly with their head noun, whereas according to Georg (2007: 167) demonstratives agree only with animate head nouns (33).

Southern Ket

(33) a. *kíne   deʔŋ*   b. *kíde báŋ-in*
     this.PL human.PL   this place-PL
     'these people'   'these places'
     (Georg 2007: 167)

After numerals greater than one, the plural form of nouns occurs, e.g. *īn de*ʔŋ 'two human.PL' = 'two persons' (vs. *qoʔk keʔd* 'one human') (Vajda 2004: 80). After quantifiers, the plural form of count nouns but the singular form of mass nouns occurs, e.g. *òn de*ʔŋ 'many human.PL' = 'many people', but *qómat naʔn* 'few bread.SG' = 'few/little bread' (Georg 2007: 183).

The verbal morphology of Ket is very extensive, exhibiting both subject and object agreement marking (Vajda 2004: 44; Georg 2007: 184). Here, only the main tendencies can be shown. In most conjugation classes, subject person agreement markers are realized separately from subject number agreement markers, i.e. there are two separate morphemes in two different slots, as can be seen in example (34b). The singular is unmarked on the verb form while the plural is expressed via the marker *-n*, which is apparently a variant of the usual plural marker *-(V)n ~ -(V)ŋ* (see above) (Vajda 2004: 48–50; Georg 2007: 190–201, 263).

Southern Ket

(34) a. ***dí*-*n*-*ò***   b. ***dí*-*n*-*ò*-*n***
     1.SUBJ-**PST**-die   **1.SUBJ**-**PST**-die-**PL.SUBJ**
     'I died.'   'We died.'
     (Vajda 2004: 48–50)

Object agreement markers, in turn, express both person and number of the object referred to within one suffix (Vajda 2004: 48–50; Georg 2007: 190–201).

Southern Ket

(35) a. ***k*-*in*-*di*-*bək***   b. ***k*-*in*-*daŋ*-*bək***
     2.SUBJ-**PST**-**1SG.OBJ**-find   **2.SUBJ**-**PST**-**1PL.OBJ**-find
     'You [SG] found me.'   'You [SG] found us.'
     (Vajda 2004: 48–50)

Leaving further conjugation classes aside, it can be concluded that both subject and object agreement is expressed on the Ket verb, whereby the former is expressed with two suffixes in each verb form, and the latter with one single suffix.

Within the verb phrase, target and controller exhibit obligatory number agreement in the case of objects. In the case of subjects, pronominal subjects agree obligatorily in number, but nominal subjects show variation: only nouns denoting animate referents (36a) agree with the predicate in number, whereas inanimate referents do not (36b) (Georg 2007: 101).[13]

Northern Ket

(36) a. […] ***ra-bis'nimin***   *qaj*   ***d****-aŋat-ol-i-bet-**n**.*
        3SG-brother.PL   PTCL   **3P.SUBJ**-wait-PST-EP-make-**PL.SUBJ**
        '[…] his brothers began waiting for him.'
        (Kryukova & Glazunov 2010: 189)

    b. *Sʲɛsʲ-talʲ*   *eke*   ***lu-ŋ***   *bara*   ***doːɣ****-ol-evat.*
        larch-ABL.M only **chipping-PL** PTCL **3P.SUBJ.fly**-PST-ITER
        '[Only some] chippings fell down from the larch.'
        (Kryukova & Nefedov 2017: 192; sentence 39)

4. Comparison and typological implications

4.1. Convergences and divergences

As can be seen from the discussion in Section 3, the languages under investigation exhibit many common traits as well as typologically common phenomena, which will be dealt with here shortly.

All languages under discussion systematically exhibit singular and plural number, the Uralic languages (Eastern Khanty, Selkup, Nganasan) additionally dual number. In Dolgan, there is dual number in two minor domains (first person imperative; dual-marking item *bihikki*), while in Chulym Turkic, Ewenki and Ket, there is synchronically no dual number at all. In all three Uralic languages, the dual is to some extent involved in expressing coordination or accompaniment, especially together with kinship terms. From a broader Uralic perspective, this is nothing special, but it is often reported (e.g. Honti 1997: 46–47; Kulonen 2007: 51 for Eastern

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13. Glossing and translations are slightly adapted and unified in (36).

Mansi, Siegl 2013: 241 for Forest Enets). Additionally, general number forms – which are homonymous with singular forms – appear regularly in Eastern Khanty, Selkup, Dolgan and Chulym Turkic, though in Nganasan and Ewenki they occur much less frequently, and in Ket they do not occur at all. General number and its entailments for related phenomena is discussed in detail in Section 4.2, as are the singulative forms in Eastern Khanty, Selkup and Ket in Section 4.3. Table 9 summarizes the number values found in the analyzed languages.

Table 9: Number values in the analyzed languages

Language	General number	Singular	Dual	Plural	Singulative
Eastern Khanty	+	+	+	+	(+)
Nganasan	(+)	+	+	+	–
Selkup	+	+	+	+	+
Dolgan	+	+	(+)	+	–
Chulym Turkic	+	+	–	+	–
Ewenki	(+)	+	–	+	–
Ket	–	+	–	+	+

As for the formal expression of number in the languages under investigation, again many common traits can be observed. In all languages, number on nouns is predominantly marked via affixation in a very regular manner. Nevertheless, this is not the whole story. While in Selkup, Dolgan, Chulym Turkic and Ewenki the stems remain largely unchanged, in Eastern Khanty, Nganasan and Ket several regular stem alternations occur. In Eastern Khanty, the stem alternations are concomitant and, furthermore, not restricted to number marking (e.g. *wajəɣ* 'animal; beast' : *wajk-at* 'animal-PL', *joɣəl* 'bow' : *joɣl-at* 'bow-PL'), thus, they hardly mark number themselves.

In Nganasan, the situation is more complex. Firstly, Nganasan exhibits a morphophonological process called consonant gradation, which leads to regular stem alternations in various morphological positions (Wagner-Nagy 2019: 74–78). As for number marking, consonant gradation applies in the nominative plural as well as in some oblique plural cases (Wagner-Nagy 2019: 193), e.g. *maʔ* 'tent' : *maðə-ʔ* 'tent-PL' : *maðə-j* 'tent-PL.ACC' : *ma-tinü* 'tent-PL.LOC'. Secondly, in the genitive plural as well as in possessive plural forms, the stem of the noun and the plural marker *-j* amalgamate, leading to

vowel changes (Wagner-Nagy 2019: 193, 207), e.g. *kümaa* 'knife' : *kümaa-ʔ* 'knife-PL' : *kümau-ʔ* 'knife-PL.GEN' : *kümau-ńə* 'knife-PL.1SG' : *kümau-čə* 'knife-PL.2SG'. In the non-possessive forms exhibiting consonant grada- tion, plural marking is still established via the plural markers *-ʔ* and traces of *-j*, respectively, or via portmanteau plural case suffixes. But in possessive plural forms, no plural marker is visible any more – synchronically, only the stem alternation as well as the form of the possessive suffix itself tell whether a form is plural or not (see Däbritz 2017 for details). Thus, Nganasan has two strategies to express number: affixation and to a lesser extent (in possessive plural forms) stem alternation, too.

In Ket, plural marking interacts with stem alternations in a very complex way. First, there are stem alternations that are concomitant with affixation, e.g. the loss of stem-final stops, cf. *lūk* 'splinter' : *luu-ŋ* 'splinter-PL' (Georg 2007: 99). Second, there are vowel changes, traditionally called "Ablaut". Also these vowel changes are concomitant with the plural suffix like in *diʔ* 'log' : *daʔ-n* 'log-PL' or *qī̄t* 'wolf' : *qə́t-n* 'wolf-PL' (Georg 2007: 97). Thirdly, there are tone changes in the stem. Tone changes often are also concomitant with plural marking via affixation, e.g. *àŋ* 'rope' : *áŋ-en* 'rope-PL' and *qām* 'arrow' : *qám-en* 'arrow-PL' (Georg 2007: 95). But in contrast to consonant deletion and vowel changes, tone changes can be the only indication that a form is plural, e.g. *ēj* 'tongue' : *èj* 'tongue.PL' and *qóqbun* 'cuckoo' : *qòqbun* 'cuckoo.PL' (Georg 2007: 98). This means that Ket uses two strategies for plural marking, namely affixation (with possible concomitant stem alterna- tions) and stem alternations, more precisely tone changes.

Zero expression of number in the narrow sense (like English *sheep* : *sheep*) does occur very rarely in the languages under investigation. Only a few lexemes in Ket like *sūj* 'mosquito.SG' ~ 'mosquito.PL' can count as an example (see Section 3.7). Moreover, in one set of verbal person-num- ber endings, Ewenki shows zero marking for the third person plural, e.g. *əmə-rə* 'come-AOR.3PL', while the third person singular is marked with *-n*, e.g. *əmə-rə-n* 'come-AOR-3SG'.

As for suppletion, the borderline between stem alternation, irregularity and suppletion is often fuzzy. In a narrow sense, suppletive number mark- ing on nouns is absent or very rare in all languages. Examples that can be noted are only Khanty *qu* 'man; person' : *jaɣ* 'people' (Filchenko 2010: 91) and Ket *keʔd* 'person' : *deʔŋ* 'people', *ōks* 'tree' : *aʔq* 'trees' and *qoʔd* 'way; road' : *qíneŋ* 'ways; roads' (Georg 2007: 100). Within the domain of personal pronouns, on the contrary, the issue is more complex. From a synchronic

point of view, many dual and plural forms can by no means be derived from the corresponding singular form by simply adding a number marker. Diachronically, however, most forms can be traced back to one and the same stem. A case in point is Eastern Khanty, whose first person pronouns *mä*, *min* and *mǝŋ* can be traced back to a single pronominal stem **m(V)-* (Rédei 1988: 294–295), the dual and plural forms, nevertheless, showing no traceable number morphology. Consequently, the Eastern Khanty personal pronouns are no instance of suppletion in the narrow sense, but surely exhibit irregular patterns of forming dual and plural forms. This is even more obvious in the case of Dolgan, cf. *min* vs. *bihigi* in the first person and *en* vs. *ehigi* in the second person. It is interesting to note that irregular plural (and dual) forms of personal pronouns are most common in the first person, common in the second person, but rare in the third person. This will be discussed in more detail in Section 4.4 in context of the category of animacy.

Number agreement within noun phrases is absent in Eastern Khanty, Selkup, Dolgan and Chulym Turkic, which is a frequent pattern in Northern Eurasian languages (Nevskaya & Amal 2020: 589; Rießler 2016: 170–171), regardless of the type of modifier included. In Nganasan, in turn, both adjectives and demonstratives obligatorily agree with their head noun (Wagner-Nagy 2019: 309), which is a clear divergence from the typical pattern in the Uralic languages (except for the Finnic and partly the Saami branches). In Ewenki, agreement seems to be the prevalent pattern for adjectives – though varying across dialects – while demonstratives do not tend to agree (according to the material in Däbritz & Gusev, in preparation). Finally, in Ket agreement of adjectives with their head noun may occur, but it is restricted, according to Vajda (2004: 80) by the semantics of the adjective.

Numerals greater than one (or greater than two, if there is dual number) are followed by unmarked forms of nouns without exception in Eastern Khanty, Selkup, Dolgan and Chulym Turkic. In Nganasan and Ewenki, both unmarked and plural forms can be observed, and in Ket plural forms are obligatory. These patterns will be discussed in more detail in Section 4.2 in the context of general number forms. In the case of the numeral 'two', the dual may occur on the modified noun – obligatorily in Eastern Khanty (Filchenko 2010: 195), and optionally in Nganasan (Wagner-Nagy 2019: 313) and Selkup (Kuznecova et al. 1980: 189) – otherwise the unmarked form is used, too. According to the material analyzed here (Brykina et al. 2018; Brykina et al. 2020), in both Nganasan and Selkup, dual forms occur mostly with animate and human referents.

Table 10 summarizes the agreement patterns in noun phrases in the investigated languages.

Table 10: Number agreement in noun phrases

Language	Adj N	Dem N	Num (> 1) N	
Eastern Khanty	–	–	+	(dual)
			–	(plural)
Nganasan	+	+	(+)	(dual)
			(+)	(plural)
Selkup	–	–	(+)	(dual)
			–	(plural)
Dolgan	–	–	–	
Chulym Turkic	–	–	–	
Ewenki	+	(+)	(+)	
Ket	(+)	(+)	+	

Number agreement in the verb phrase can concern subject agreement and object agreement. Subject number agreement is obligatory for pronominal subjects in the first and second person. For third person subjects, be they nominal or pronominal, this holds true for Eastern Khanty, Nganasan, Selkup, Dolgan and Ewenki. In Chulym Turkic, subject number agreement is optional for all third person referents (pronoun, human, animate, inanimate referents), as seen in (37) with the third person plural pronoun as subject and the predicate with third person singular morphology.

Chulym Turkic

(37) *Äšämändä   ajt-wa-**an**   **olar**.*
      nothing   say-NEG-**PST.3SG**   **3PL**
      'They said nothing.' (Lemskaya 2015: 239)

From a Turkological point of view, it can be noted that Chulym Turkic, allowing for the lack of agreement within the verb phrase, behaves more typically than Dolgan, calling for agreement with the verb phrase (see Johanson 1998: 53). In Ket, first and second person subjects as well as animate third person subjects exhibit agreement with the predicate.

The Uralic languages Eastern Khanty, Nganasan and Selkup exhibit an objective conjugation, often referred to as "object agreement". In the case of Selkup, the appearance of this conjugation only indicates the existence

of a direct object in the clause, but neither number nor person of the object are marked on the verb (Kuznecova et al. 1980: 234–235). In Eastern Khanty and Nganasan, the number of the direct object is indicated when the objective conjugation is used (Filchenko 2010: 273; Wagner-Nagy 2019: 230), though in Eastern Khanty number agreement is not obligatory. The usage of the objective conjugation is, however, not mandatory if there is a direct object in the clause. It rather depends on largely information-structural criteria (Däbritz 2021: Ch. 9.3). From a Uralic point of view, the appearance of an objective conjugation governed by information-structural criteria is common to all Ob-Ugric and Samoyedic languages (Dalrymple & Nikolaeva 2011: 194–200) and the languages analyzed here form no exception in this respect. From a formal perspective the third person object number markers are homonymous with the nominal number suffixes used together with possessive suffixes in Eastern Khanty and Nganasan. This is surely expected from a broader Uralic perspective, since it can – at least in relics – be observed in all other Uralic languages exhibiting object number agreement (i.e. Erzya and Moksha, Mansi, Northern and Southern Khanty, Nenets, Enets), and can diachronically be explained (e.g. Honti 1997: 102). From a more general point of view, this is in line with Siewierska's (1998: 35–36) observation that it is slightly more likely for object agreement paradigms to exhibit parallels with adnominal possessor marking than for subject agreement paradigms. A possible explanation is that both objects and possessed nouns tend to correspond to thematic patient roles, whereas subjects tend to correspond to thematic agent roles (see Dowty 1991: 575–576).

Finally, also Ket exhibits object agreement. In Ket, however, object agreement is not conditioned by information structure, rather it is obligatory if there is an object in the clause. This pattern is common within the whole Yeniseian language family (Werner 1995: 98, 100–102), Ket, thus, being a typical representative.

4.2. General number and its entailments

As was shown in Section 3, but rarely explicitly mentioned in grammatical descriptions, almost all the languages under investigation – with the exception of Ket – exhibit general number forms of nouns to a certain extent. Already in Section 2 it has been said that this is by no means uncommon, nor unknown in Northern Eurasian languages (see Benzing 1955, Honti 1997, Johanson 1998, Gruntov & Mazo 2020). However, the existence of

general number in a language appears to have two entailments which are worth commenting on, given the analyzed language data.

First, there is a striking parallel of general number on the one hand and the form of nouns following cardinal numerals on the other hand. One group of the languages investigated (Eastern Khanty, Selkup; Dolgan, Chulym Turkic) has general number and numerals greater than one or two (depending on the availability of dual forms) followed by number-unmarked forms. Ket at the other extreme has no general number and numerals greater than one are followed by plural forms. Ewenki and Nganasan take an intermediate position, showing variation: after numerals greater than two, Nganasan has mostly number-unmarked forms, but not always, while Ewenki, in turn, has mostly plural forms after numerals greater than one, whereby also number-unmarked forms are attested. This gives rise to the assumption that the observed parallel may be not concomitant but causal. In this case, the former group of languages would have the relevant numeral followed not by singular forms but by general number forms. In the given context, the numeral easily disambiguates the form of the noun underspecified for number. Thus, plural (or dual) marking of the noun itself is no longer needed. Honti (1997: 6–7, 41, 102) argues exactly the same way, and – given the wide distribution of general number forms in the Uralic languages according to him (ibid.) – reconstructs general number even for Proto-Uralic. From a more general point of view, the parallel of general number forms and unmarked nouns after numerals is in line with Alexiadou's (2019) observations mentioned in Section 2, since in either domain the underspecification of the bare noun form is a prerequisite. So, the languages under investigation as well as other Northern Eurasian languages imply that the observed parallel is indeed a causal one. Further investigation involving further languages and language families is, thus, highly desirable, but it goes beyond the scope of this paper.

Second, the seemingly irregular behavior of nouns denoting paired objects is very enlightening in this context. Given *inter alia* Haspelmath and Karjus' (2017) markedness- and frequency-based approach, the least marked denotation of these nouns is the whole pair (i.e. two pieces together), since eyes, ears or shoes seldom occur alone. As in the investigated languages with general number, the base form of a noun is not per default associated with a singular reading, this underspecified base form of paired items refers to the whole pair here. In contrast, in Nganasan and Ewenki – as well as in German or English – the bare noun form is associated with

a singular reading, whence for denoting pairs the dual or plural has to be used. Consequently, the former group of languages refers to one part of the pair with a quantifier meaning 'half', whereas in Nganasan and Ewenki simply the singular form of the noun is used. The Ket data, admittedly, behaves inconclusively in this respect. Ket exhibits no general number forms, but in the case of paired objects, the unmarked noun form may refer to either one part of the pair or to the whole pair. The former pattern can be proven by the complex plurals in *ókde* 'ear' vs. *ókde-n* 'ear-PL' = 'a pair of ears' vs. *ókde-n-iŋ* 'ear-PL-PL' = 'many ears' (see above), and the latter pattern can be proven by the usage of the quantifier *qóleb* 'half'. From a Yeniseian point of view, however, Ket is no exception in this respect, since for Yug and Kott the same is reported (Werner 1995: 87; 1997b: 69–70).

4.3. Singulatives

Abstract nouns and mass nouns hardly exhibit number marking in the investigated languages, which is neither surprising nor typologically uncommon (Corbett 2000: 78–82). In order to single out individual pieces or parts of a mass noun, Selkup and Ket have a morphological strategy, namely singulative words and suffixes. The following examples show their usage in context.

Central Selkup

(38) *Mat   qiška-**xaj**-tko   me-ja-p.*
       1SG   star-**SNGL**-TRL   do-AOR-1SG.OBC
       'I turned them into [single] stars.'
       (Brykina et al. 2020, KFN_1967_BigBear2_flk.018)

Northern Selkup

(39) […] *qaj-**lak**,   awsɨ-**laka**   orqɨl'-pa-t.*
            what-**SNGL**   food-**SNGL**   catch-PST.NAR-3SG.OBC
       '[The raven] grasped a piece of something, a piece of food.'
       (Brykina et al. 2020; KR_196X_RavensAndHares2_flk.029)

Northern Ket

(40) *Bu   bat   qa-jn-em   **qiʔt   lɛmte**,   […].*
       3SG.M PTCL   take-PST-STEM **fat   SNGL**
       'He took a piece of fat [and threw it down in the cauldron].'
       (Kryukova 2015: 158)

The Selkup examples (38) and (39) show the singulative markers *-xaj* and *-lak(a)*, which are grammaticalized from the words *saj ~ haj* 'eye' and *laka* 'piece' respectively (Beáta Wagner-Nagy, p.c.). The Ket example (40) shows the singulative marker *lɛmte* 'piece' (a variant of *lámt(a)* id.), which can also occur as suffix *-lamt*; similarly, the lexeme *dēs* 'eye' and the suffix *-dis* can be used (Georg 2007: 132). In either language, a grammaticalization process is, thus, ongoing: free lexemes denoting small entities (piece, eye) are juxtaposed to lexemes denoting masses such as food and fat in (39) and (40), or referents that usually occur in groups such as stars in (38); this step can be seen in the Ket example (40). Then, both lexemes gradually amalgamate into one phonological word, whereby the singulative lexeme may change its phonological shape, e.g. via vowel apocope like in the Selkup example (39). Finally, the singulative marker is completely included into the morphological pattern of the noun modified by it, the Selkup example (38) being a good illustration, since the singulative marker is even followed by a case suffix here.

In Eastern Khanty, the lexeme *sem* 'eye' appears to be used in similar contexts as well, whereby, however, only one relevant type – displayed in (41) – could be found in the analyzed material.

Eastern Khanty

(41)   *əjpä*   *jomentʃʼəɣ*   ***sem***   *nuɣ*   *kül'-ɣən*   […].
       once   berry   **eye**   up   get.up-PST.3SG
       'Once the berry got up [and started to make a fire].'
       (Filchenko et al. 2012: 56)

Also Steinitz (1966–1993: 1339) mentions similar types for the relevant Khanty dialects, e.g. Vakh Khanty *jəŋ-sem* 'water drop; lit. water-eye' and *märən-sem* 'egg of roe; lit. roe-eye' as well as Vasyugan Khanty *tŏntəɣ-sem* '(small) stripe of birch bark; lit. birch bark-eye'. Especially the latter item points towards a grammaticalization of *sem* 'eye' as a singulative marker, since an elongated item is referred to, something that can hardly be reconciled with the semantics of 'eye'. Nevertheless, it has to be stated that the Eastern Khanty case calls for further research, since especially the morphosyntactic patterns of the given items are not fully understood yet.

Singulatives are not unattested in a global perspective, the most prominent examples probably being Welsh (< Indo-European), Maltese (< Semitic) and several Nilo-Saharan languages (Haspelmath & Karjus 2017:

1214–1217; Grimm 2018: 530–538). From a quantitative point of view, singulatives are rather rare; within Plank's (2003) sample of 205 languages, only 11 exhibit singulative marking.

Within the Uralic language family, grammaticalized singulative markers as described here are not attested at all, except for the Selkup case discussed in Section 3.3. However, Jussi Ylikoski (p.c.) has drawn my attention to the circumstance that in many lexicographic sources very similar examples are mentioned without further ado, as displayed in the probably not exhaustive Table 11 (data from Nielsen 1932, Itkonen 2011 [1958], Munkácsi & Kálmán 1986 and Lehtisalo 1956).

Table 11: Lexeme 'eye' marking singulatives in Uralic

Language	Item	Literal meaning	Meaning
Northern Saami	*muohtačalbmi*	snow-eye	snowflake
	káf(f)ečalbmi	coffee-eye	coffee bean
Skolt Saami	*mueʹrjjčââlmaž*	berry-eye	one single berry
Northern Mansi	*rakw-sam*	rain-eye	raindrop
Tundra Nenets	*sārʹun seβ*	rain-eye	raindrop

The given data stand to reason that the usage of successor forms of Proto-Uralic **ćilmä* 'eye' is much more widespread than it was formerly attested (Ylikoski 2021). However, morphosyntactic and empirically based studies on this topic are still lacking for the indicated languages, so that it remains an open question to what degree the relevant item is grammaticalized in each particular language. Additionally, the Hungarian classifiers *szem* 'eye', *fej* 'head' or *darab* 'piece' – e.g. *egy szem szőlő* 'one single grape' or *két fej karfiol* 'two heads of cauliflower' – appear to be a related phenomenon at first glance. However, Csirmaz and Dékány (2014) show convincingly that their occurrence is both morphosyntactically and semantically considerably restricted, whereby the latter is more important here. The combinations **egy fej szőlő* or **két szem karfiol* are not possible, something that can be explained by the fact that *szem* 'eye' is only applied to round, single and small objects, and *fej* to round, single but bigger objects. This contradicts analyzing these items as singulative markers, as does the fact that they can elliptically even be used without their head noun, which would not be possible if they were semantically bleached.

Within the Yeniseian language family, in turn, singulative markers appear to be rather common, since also Yug and Kott exhibit them, e.g. Yug *čəŋ-lap* 'hair-SNGL' = 'one single hair' vs. *čəŋ* 'hair' (Werner 1995: 87–88). Possible areal implications of this striking Uralic–Ket parallel will be discussed in Section 5.

4.4. Number and animacy

The semantic category of animacy is concerned, roughly speaking, with the distinction of certain groups of referents, such as humans, non-humans, kin, animates and inanimates, whereby the categorization of referents is surely language-dependent (Comrie 1989: 185). With respect to the linguistic behavior of the items included, several hierarchies can be established in this domain, namely person hierarchy (1st/2nd person > 3rd person), nominal hierarchy (pronoun > noun) and animacy hierarchy proper (human > animate > inanimate) (Comrie 1989: 197–198). The culmination of these single hierarchies leads to the well-known animacy hierarchy (see Silverstein 1976, Comrie 1989 for details):

> 1st/2nd person > 3rd person > kin > human > animate > inanimate

The hierarchy implies that items on its left are high on the hierarchy while items on its right are low on the hierarchy. Thus, the animacy hierarchy predicts the linguistic behavior of different classes of nominal referents, number marking being no exception. From a functional point of view, the existence of different number values in a language does not necessarily mean that they are equally accessible for all kinds of referents. The animacy hierarchy predicts that items high on the animacy hierarchy are potentially marked for more number values than items low on it, but never the other way around (Corbett 2000: 56–57). A simple example is Northern Saami (< Uralic), where personal pronouns have dual forms (*mon ~ mun* 'I' vs. *moai* 'we two' vs. *mii* 'we many') but common nouns do not (*guolli* 'fish' vs. *guoli-t* 'fish-PL') (Korhonen 1981: 206–210). In the languages under investigation here, two aspects are important and possibly meaningful for typological research in general.

First, general number forms are not available for personal pronouns, be they free or bound, and neither for nouns denoting kinship. The latter can be explained by the fact that reference to kinship terms is mostly definite

or at least specific. In the languages investigated here, the nearly obligatory possessive marking of kinship terms underlines this explanation, as seen in (42).

Northern Selkup

(42) *Ɔmtijqo* **näja-iː-m-tɨ** *ponä* *sɔːntir-qa* *aša*
czar **daughter-PL-ACC-3SG** outwards play-INF NEG

üːti-mmi-mpa-t.
let.go-DUR-PST.NAR-3SG.OBC

'The czar didn't let his daughters play outside.'
(Brykina et al. 2020; KNS_1966_Markincha_flk.003)

In contrast to that, non-kin human referents can be expressed via general number forms, as displayed in (43).

Central Selkup

(43) *Okkɨr* *na-l'-gu-t* *üde-mba-t* *šidaːro*
one woman-ADJZ-human-3SG send-PST.NAR-3PL twenty

wersta-nd *täbɨ-l'* ***qup*** *qwär-gu.*
verst-ILL man-ADJZ **human** call-INF

'They sent one woman twenty versts away, to call the men.'
(Brykina et al. 2020; KFN_1965_GirlAndBear1_nar.020)

This pattern can be observed in the case of the other languages exhibiting general number forms, too. Thus, there is a split on the animacy hierarchy between kin referents and non-kin human referents with respect to general number forms. At first glance, this seems to contradict the prediction made above that items high on the hierarchy potentially mark more number values than items low on the hierarchy. However, since general number is not a number value of its own but refers to the underspecification of certain number forms, the hierarchy rather predicts that items high on the hierarchy rather call for obligatory number marking, whereas items low on the hierarchy are rather available for underspecified forms (Corbett 2000: 70). Given this reading, the observed pattern completely adheres to the animacy hierarchy.

Second, the role of pronouns (both free and bound) is special with regard to number marking: When referring to full nouns, the amount of referents of a plural form can be viewed as a sum of single referents. But when referring to pronouns, this is more complicated. The first person

pronoun *I* points to the speaker of an utterance, but its plural counterpart *we* seldom refers to many speakers, but rather to one speaker and some referent(s) associated with her/him. The second person pronoun *you* [i.e. *thou*] points to the hearer of an utterance, and its plural counterpart *you* [i.e. *ye*] may point either to many hearers or to a single hearer and some referent(s) associated with him/her. The third person pronouns *he/she/it* point to an entity being neither speaker nor hearer, and its plural counterpart *they* points to many such entities; see Jespersen (1924: 191–194) and Bhat (2004: Chapter 4.2) for a thorough discussion. Combining this with the person and animacy hierarchies, it appears to be highly expected that first person pronouns behave least regularly with respect to number marking, followed by second person pronouns, whereas third person pronouns may behave rather regularly. This expectation is confirmed by the material analyzed here.

A split between number marking of first/second person pronouns and third person pronouns could be observed in all languages but Eastern Khanty. Additionally, Dolgan as well as Chulym Turkic exhibit a split between the first and the second person each. In Dolgan, there are two instances of dual marking in the first person, but not in the second person and neither with items lower on the animacy hierarchy. Within the Turkic language family, this pattern is exceptional; seemingly parallel patterns in Sakha (Yakut) and South Siberian languages are rather instances of inclusive vs. exclusive first person (see Nevskaya 2005). In Chulym Turkic, both free and bound person markers are irregularly formed in the first person (e.g. *män* 'I' vs. *pis* 'we'), but regularly formed with the plural marker *-LAr* in the second and third person (*sän* 'you.SG' vs. *silär* 'you.PL' and *ol* 's/he' vs. *olar* 'they'). This is a shared phenomenon with other South Siberian Turkic languages such as Shor and Khakas, but a clear deviation from the standard Turkic pattern (Schönig 1998: 408–409). Especially these splits are important for the categories of animacy and person inasmuch as the hierarchy of the first and second person is highly debated in linguistic research (Corbett 2000: 64–66; Gildea & Zúñiga 2016). Dolgan and Chulym Turkic, thus, give independently from each other evidence for the first person being indeed hierarchically higher than the second person.

5. Areal implications

At the beginning of this paper, the choice of languages included in the investigated sample was partly motivated by observations that in Western and Central Siberia contact-induced linguistic convergences are rather frequent (e.g. Hajdú 1979, Pusztay 1987, Helimski 2003) and that there might be even an "Ostyak (Ob-Yeniseic) Sprachbund" (Helimski 2003: 160). Coming back to these observations, it has to be stated that the category of number can give no evidence in favor of assuming meaningful areal patterns. On the one hand, the languages included in the sample of this study do not exhibit conclusive patterns that would make it possible to treat them as an areal unit – e.g. only the Uralic languages included have dual number, only Chulym Turkic systematically exhibits no agreement of subject and predicate in the third person etc. On the other hand, including neighboring languages such as Mansi, Nenets or Yug would not change the picture dramatically, either: also Mansi and Nenets have dual number, and neither of those languages exhibits lack of subject agreement etc. However, it can be shown that the observed features at least account for a homogeneity in the sense of e.g. Janhunen's (2014) "Ural-Altaic" continuum within Northern Eurasia, since the linguistic expression of the category of number shows many parallels in Uralic and Altaic (Transeurasian) languages (general number with all its entailments, lack of number agreement in noun phrases, rather irregular number marking in 1st/2nd person vs. rather regular marking in 3rd person) and only few divergences (dual in Uralic languages, object agreement in Uralic languages). In contrast, when including e.g. Russian as dominant contact language, many divergences can be detected, the most important being the lack of general number and obligatory number agreement within noun phrases,[14] something also indicating that Northern Eurasian languages can be analyzed as forming a rather homogeneous unit. In this context, also Ravila's (1941) assumption of the "more developed" number system in Uralic languages compared to

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14. The latter surely raises the question of whether number agreement in noun phrases in Northern Samoyedic languages as well as Ewenki may be due to or at least accelerated by Russian influence. In my view, no final statement can be made here, since in many similar cases – e.g. SVO patterns in Nganasan and Dolgan (see Däbritz 2020) – Russian influence can be excluded as the driving factor, if one analyzes language data as well as sociolinguistic patterns carefully.

Altaic languages has to be relativized: surely the former exhibit dual marking, which the latter lack, but in other domains, as could be shown, there are far more convergences than divergences.

Table 12 provides a summary of those features which were discussed in more detail in Section 4 – extended with data from Mansi, Nenets, Enets and Yug as well as Russian.[15]

Table 12: Comparison of number features

	General number	Dual	Singulatives	Subject number agreement	Object number agreement	Agreement in NPs
E. Khanty	+	+	(+)	+	(+)	–
Nganasan	(+)	+	–	+	+	+
Selkup	+	+	+	+	–	–
Dolgan	+	(+)	–	+	–	–
Chulym Turkic	+	–	–	(+)	–	–
Ewenki	(+)	–	–	+	–	(+)
Ket	–	–	+	+	+	(+)
Mansi	+	+	(+)	+	+	–
Nenets	(+)	+	(+)	+	+	+
Enets	(+)	+	–	+	+	(+)
Yug	–	–	+	+	+	(+)
Russian	–	–	(+)	+	–	+

Finally, one meaningful linking can be derived from this list, namely the occurrence of singulatives in relevant Uralic languages and Yeniseian languages – most clearly in Selkup and Ket – but their lack in further potential contact languages such as Chulym Turkic or Southern Ewenki. Already the occurrence of singulatives itself in two unrelated neighboring languages (and more generally: language families) appears to be suspicious inasmuch as singulatives are typologically rather uncommon (Plank 2003:

15. The given list solely relies on grammatical descriptions in the case of the added languages (Keresztes 1998, Nikolaeva 2014, Siegl 2013, Werner 1997b) and does not take into account corpus data.

259). Moreover, exactly the same lexemes (denoting 'eye' and 'piece') are involved, and the path of grammaticalization appears to be parallel, since in both Selkup and Ket the singulative markers can be free morphemes as well as suffixes. Finally, also the sociolinguistic situation makes a contact scenario entirely plausible, since Yeniseian people (both Kets and Yugs) settled together with Eastern Khanty and Selkup (Northern, Central and Southern) people for a long time (Werner 1997b: 3–4; Vajda 2009: 480). However, one single uniting element surely does not suffice for establishing a language area, regardless of the latter's size. Further distinctive features, which connect Selkup (as well as possibly Eastern Khanty) and Yeniseian, but separate them from surrounding languages, would additionally be needed. Besides that, it appears to be the case that in many further Uralic languages (e.g. Saami, Mansi, Nenets) the lexeme 'eye' occurs in very similar domains, possibly being grammaticalized as a singulative marker, too (Ylikoski 2021). Therefore, further research on this topic from both language-internal and comparative perspectives is highly needed. In any case, however, it can be stated that the Uralic and Yeniseian languages under observation clearly diverge from the surrounding Turkic and Tungusic languages, something which already represents a meaningful insight.

6. Conclusion and further outlook

In this paper seven languages from Western and Central Siberia (Eastern Khanty, Nganasan, Selkup; Dolgan, Chulym Turkic; Ewenki; Ket) were analyzed with respect to the linguistic expression of number. It was shown that all of them mark number grammatically, the number values expressed everywhere being singular and plural; dual number occurs regularly in the Uralic languages Eastern Khanty, Nganasan, and Selkup, and additionally in two minor domains in Dolgan. Besides that, there are underspecified forms, which are formally homonymous to singular forms, in Eastern Khanty, Selkup, Dolgan, Chulym Turkic, and partly in Nganasan and Ewenki. These forms qualify for *general number* in the sense of Corbett (2000), since they do not necessarily convey any reference to the number category. This is most noteworthy, since in most descriptions these forms are labeled as "singular with plural meaning" or the like. Furthermore, the existence of general number forms in these languages entails that nouns are underspecified after numerals greater than one or two (depending on the availability of dual forms) and that paired objects are referred to as a

whole by a bare noun form. In addition, Selkup, Eastern Khanty and Ket as well as further Yeniseian languages exhibit singulatives, singling out a referent from a mass or group of similar referents. Given the linguistic geography in the Yenisei basin, this can be analyzed as contact phenomenon, yielding a common Uralic-Yeniseian feature. Finally, the expression of number is tightly interwoven with the category of animacy from both a formal and a functional perspective. The Dolgan dual in the first person imperative and the formation of plural personal pronouns in Chulym Turkic (suppletive in 1st person, regular in 2nd and 3rd person) are especially noteworthy, since both phenomena show an otherwise seldom-attested split of the animacy hierarchy between the first and second person.

From an areal linguistic point of view, two conclusions can be drawn. First, the linguistic expression of the category of number cannot give evidence for assuming any kind of language area in the Ob-Yenisei region, regardless of which languages are included or not. Secondly, however, the observed phenomena and features adhere to the prevailing patterns in Siberia and Northern Eurasia in general, possibly being called a "Ural-Altaic" or "Ural-Transeurasian" continuum.

Finally, the investigation of genetically partly unrelated but typologically rather similar languages of Western and Central Siberia can contribute to the theoretical understanding of the number category, especially when it comes to the peculiarities discussed in Sections 4.2, 4.3 and 4.4. Similar investigations of both a broader set of languages and e.g. the closely related category of person, thus, appear promising for Uralic, Transeurasian and Siberian studies as well as for linguistic typology in general.

Acknowledgement

Non-standard abbreviations used in glosses

ADJZ	adjectivizer	LIM	limitative
AOR	aorist	NAR	narrative
ATTR	attributive	OBC	objective conjugation
DYA	dyadic kinship	PAUC	paucal
EP	epenthesis	POSS	possessor
GN	general number	PROPR	propriative
HAB	habitual	PTCL	particle
ILL	illative	SNGL	singulative
INCH	inchoative	STEM	stem formant
INFER	inferential	SUBJ	subject
ITER	iterative	TRL	translative
LAT	lative	VBZ	verbalizer

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