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Non-finite constructions in Khanty: their unity and diversity

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Abstract: This paper investigates non-finite forms in Kazym Khanty (Ob-Ugric, Uralic). In Khanty, almost all subordination makes use of one of the two non-finite forms: *-ti* (NFIN.NPST) or *-əm* (NFIN.PST). We propose that their uses are best treated under the headings ‘bare non-finites’, ‘head-agreement non-finites’, and ‘verb-agreement non-finites’. The three classes are defined based on the subject agreement pattern used in non-finite constructions. Different syntactic tests, such as interaction with argument alternations, island effects, and adverbial modification, are used to show the morphosyntactic nature of the classification. The three classes differ in the amount of functional structure they involve: bare non-finites can vary from vP to TP, head-agreement non-finites are of AspP–TP size, and verb-agreement non-finites are CPs dominated by a nominal shell. The findings support both Givón’s Binding Hierarchy and the Implicational Complementation Hierarchy proposed by Wurmbrand and Lohninger, showing that both are also true for languages where all the subordination is done by means of a single form. We also discuss the Khanty data in light of Cristofaro’s Subordination Deranking Hierarchy and argue that the amount of functional structure does not correlate with the degree of deranking/balancing of the embedded clause.

Keywords: subordination, finiteness, Uralic, participles, gerunds

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1 Introduction

There are languages that use non-finite forms for all types of subordinate clauses. Khanty (Ob-Ugric < Uralic) is such a language: almost all types of dependent clauses are formed with non-finite forms. All of these forms have the formants *-t-/-m-* (referring to non-past vs. past, respectively) irrespective of the syntactic function of the clauses. A natural question arises whether all these forms can be approached as instances of a single form, or whether they should be treated as different, though homonymous, elements.

This paper deals with the properties of multifunctional non-finite forms in Kazym Khanty. We show that the basic parameters differentiating the non-finite constructions are their morphosyntactic properties. This difference in morphosyntax corresponds to the difference in the internal syntax. The difference in syntactic properties can be accounted for by the amount of functional structure they involve.

Khanty belongs to the Ob-Ugric group of the Uralic language family. The nomadic lifestyle of the Khanty people led to great dialectal divergency in their language – many of its dialects are disjointed so that they are not mutually intelligible at all. Our research focuses on the Kazym variety of Khanty, located between the Northern and Western dialects of Khanty. It is spoken around the Kazym village, located in the north of Khanty-Mansi Autonomous District, Russia.

The data for this study were collected during fieldwork in the Kazym village in 2018–2020. We worked with 17 speakers living in Kazym; all of them are Khanty-Russian bilinguals. Most of the examples were elicited. Both Russian and Khanty stimuli were used. We also illustrate some phenomena with corpus data from the Western Khanty Corpus (WKhC).¹ All examples were elicited unless mentioned otherwise.

The theoretical framework of our study is formal generative typology. Following Baker (2009), our approach borrows insights from the Chomskyan tradition of linguistics (starting from Chomsky [1957]; see Chomsky [1965, 1995] as ‘manifesto’ works). We are striving to expand the generative approach by adding a typological perspective (see Chomsky [1981], Chomsky and Lasnik [1993] as the first attempts to do so). We also hold the view that syntax and morphology constitute the same module of grammar (Halle and Marantz [1993, 1994]; Marantz [1997], among others). Therefore, we believe that non-finite forms have internal syntactic structure, which can be revealed using different syntactic tests.

The paper is organized as follows. Section 2 lays out the theoretical dimensions of our work and reviews the most important existing literature on the differences in the amount of functional structure in non-finite dependent clauses. Section 3 introduces the morphosyntax of Kazym Khanty. In Section 4, we provide the basic characteristics of the constructions under discussion. Section 5 discusses the classification of Khanty non-finite clauses proposed in Nikolaeva (1999b) and suggests our own classification. Section 6 presents the internal morphosyntactic properties of Kazym Khanty non-finite forms that constitute the basis of our classification in more detail. In Section 7, we analyse the external syntax of the three classes of construction. Section 8 presents the theoretical discussion of our findings and shows how they fit into the typological generalizations. Section 9 concludes.

¹ The Western Khanty Corpus (<https://osf.io/uraqx/files/>) has been collected and transcribed by Egor Kashkin.

2 Background

Non-finite clauses can occur in various syntactic positions. They can be adnominal (relative) clauses or adverbial clauses. They can also occur in argument positions and be sentential complements of verbs or subjects. The amount of structure involved in the derivation may vary, ranging from the VP to the TP/CP level. To our knowledge, there has been no study that classifies the different types of non-finite clauses with respect to the amount of functional structure they involve, and no cross-linguistic tendencies (such as ‘adnominal non-finite clauses are always structurally larger than adverbial ones’) have been observed.

A typical property of non-finite forms is their mixed character between nouns and verbs. The attempts to provide a unified account for finite and non-finite clauses of the same type have mostly been unsuccessful. For instance, Kayne (1994) suggested that prenominal non-finites start out as postnominal full clauses, and then part of their structure undergoes preposing. Kayne’s account ignores the fact that relative clauses also have a number of nominal properties, e.g. inflection for case and number. This was observed by Krause (2001), who hypothesized that participial relative clauses have an NP functional layer. In addition, Krause showed that the nature of the N projection in participial relative clauses can vary, which results in a different encoding of the subject of a relative clause.

The character of the nominal/verbal layers that a non-finite structure involves may also vary. In their cross-linguistic study of nominalizations, Alexiadou et al. (2010) argued that any nominalization is a DP, which can be seen from its external distribution. A nominalization may or may not include internal nominal structure associated with nominal number. If a nominalization cannot pluralize, the verbal projections are immediately dominated by the DP level. If there is a nominalizer present, it can attach to different layers of syntactic structure, either Asp or V.

Thus, even if we consider just one subtype of non-finite clauses, we find significant cross-linguistic variability in the amount of functional structure they involve. For instance, participial relative clauses in Turkic are generally assumed to project up to the CP level (Kornfilt [2001, 2008, 2015]; Cagri [2005]; Kornfilt and Preminger [2015], among many others), while Semitic non-finite relative clauses have been shown to not project up to the C level (Doron and Reintges 2005).

Non-finite complements also come in different sizes. Wurmbrand (1998) showed that cross-linguistically, control infinitives are not represented uniformly by a CP structure. In particular, they can be as small as simple VP complements (labelled as restructuring). Other infinitives can project up to the TP, as in English raising constructions, or to the CP, as in some control clauses in English. Satik (2021) showed that there are reasons to believe that the typology of infinitive sizes is even more fine-grained. He adopts the split-CP hypothesis (Rizzi 1997; Haegeman 2012), claiming that the C domain includes a number of projections associated with information structure. He further shows that there exist infinitives that only project up to some sub-level within the extended C domain.

A non-finite form does not have to be in one-to-one correspondence with a certain syntactic structure. This has been shown by Dékány and Georgieva (2021) for an Udmurt cognate of one of the Khanty non-finite forms we discuss in the current study. Dékány and Georgieva claimed that at least in Udmurt, the non-finite marker *-m-* is a verbal head and not a nominalizer. They also argue that in Udmurt, *m-*forms have a different functional structure depending on their use.

In this paper, we will show that this is also the case in Khanty. While the same two non-finite forms are used in almost all of the syntactic contexts mentioned above, the size of the non-finite form is dependent on its syntactic position. This variability can be revealed using morphosyntactic tests.

In the next section, we provide the prerequisites of Khanty grammar needed for the further discussion of the morphosyntax of non-finite forms.

3 Basics of Khanty grammar

Khanty is spoken by around 9,500 people.² The majority of Khanty people live in the Khanty-Mansi and Yamalo-Nenets Autonomous Districts of Russia. Smaller groups reside in the Tomsk region. The term ‘language’ is to a certain degree arbitrary concerning Khanty. The nomadic lifestyle of the Khanty people has determined the disunity of their languages. That is, the term ‘the Khanty language’ is an umbrella term for a number of dialects spoken in the northwestern part of Siberia.

The Kazym Khanty variety cannot be easily classified: according to different classifications, it belongs to different groups of dialects. One of the accepted classifications goes back to Steinitz (1937) and is supported by Nikolaeva (1999b); it distinguishes three groups of dialects: northern, southern, and eastern Khanty dialects. Another classification, proposed by Tereshkin (1961, 1967), subdivides the Khanty dialectal continuum into two major groups: eastern and western dialects. Kazym Khanty belongs to the Northern group according to the three-term classification and to the Western group according to the binary classification. The distinctive character of the Kazym dialect has been noticed by many researchers. Even though Kazym Khanty is mutually intelligible with a number of other northern Khanty dialects (Kaksin 2010: 11), it has several peculiarities not only on the phonetic level but also on the level of morphology and syntax.

To our knowledge, there exists only one grammatical description of the Kazym dialect (Kaksin 2010). There also exist a number of textbooks for schools based on the Kazym variety, as well as several studies of certain aspects of its grammar (Koshkareva 1988, 1996, 2001, 2005, 2006, 2007; Kovgan 2007; Spiriyakova 2009). The Obdorsk variety of Khanty, which is close to Kazym Khanty, was described in Nikolaeva (1999b).

Khanty is a verb-final language. However, word order in the simple clause is not very strict because of the close contact with Russian, and SVO is also attested in texts. Some other material after a verb is also possible, such as adverbials or postpositional phrases.

Khanty distinguishes between three numbers (singular, dual, and plural). The noun declension has three morphological³ cases: nominative, which is phonetically null, dative/lative (-*a*), and locative (-*ən*). Pronouns also have a special form for accusative (-*t/-ti*) but lack locative.

There is a set of possessive suffixes expressing the person and number of the possessor. If the possessor is a personal pronoun, agreement marking on the head noun is obligatory. Examples (1)–(3) illustrate this for 1SG, 2SG, and 3SG personal pronouns.

(1) *ma* *χot-*(εm)*
1SG house-POSS.1SG
‘my house’

(2) *nǎŋ* *χot-*(en)*
2SG house-POSS.2SG
‘your house’

² According to the 2010 Russian census

(https://gks.ru/free_doc/new_site/perepis2010/croc/Documents/Vol4/pub-04-05.pdf).

³ Apart from four morphological cases, Khanty has structural genitive case that has no special morphological marking (that is, it matches nominative forms). The arguments for postulating a structural genitive case are provided in Section 4.1.

- (3) *χᵗw χᵗ-*(ᵗ)*
 3SG house-POSS.3SG
 ‘his/her house’

Most postpositions can have possessive affixes attached to them as well. (4) represents the agreement of a postposition (*χᵗs-a* ‘to-DAT’) in person and number with its complement.

- (4) *ᵗiw χᵗs-et-a*
 3PL to-POSS.3PL-DAT
 ‘to them’

If a possessor is not a personal pronoun, agreement is not necessary. In (5), the agreement marker is optional, while in (6) it cannot be omitted.

- (5) *maša-jen⁴ jernas-(əᵗ) χᵗlət-s-a*
 Masha-POSS.2SG dress-POSS.3SG get.dirty-PST-PASS[3SG]
 ‘Masha’s dress got dirty.’

- (6) *ma jernas-*(em) χᵗlət-s-a*
 1SG dress-POSS.1SG get.dirty-PST-PASS[3SG]
 ‘My dress got dirty.’

The verb obligatorily agrees with the subject in person and number (7a). Under certain conditions, direct objects can also trigger number agreement on the verb (7b) (see Nikolaeva [1999a] for details).

- (7) a. *waša-jen ar arij-s*
 Vasya-POSS.2SG song sing-PST[3SG]
 ‘Vasya sang a song.’
 b. *waša-jen ar-əᵗ arij-s-əᵗᵗe*
 Vasya-POSS.2SG song-POSS.3SG sing-PST-3SG>SG
 ‘Vasya sang the/his song.’

There is a morpheme *-a/-i-* in Khanty that has traditionally been described as a passive (Nikolaeva 1999b: 30) or topicalization (Colley and Privoznov 2020) marker. It follows the tense marker in a word. It promotes the object to subject position. The demoted subject bears locative case. Thus, (8a) represents an active voice clause, while (8b) is its passive voice counterpart: *jeməŋ χᵗtət* ‘holiday’ is the subject, while *pet’ajənən* ‘by Petya’ is demoted to a locative adjunct.

- (8) a. *pet’a-jen χᵗw jeməŋ χᵗtət ᵗawᵗ-əs*
 Petya-POSS.2SG long holy day wait-PST[3SG]
 b. *jeməŋ χᵗtət pet’a-jen-ən χᵗw ᵗawᵗ-s-a*
 holy day Petya-POSS.2SG-LOC long wait-PST-PASS[3SG]
 ‘Petya has long been waiting for the holiday.’

In this section, we have laid out the main components of the Khanty grammar needed for the discussion below. Summarizing, Khanty is an SOV language with four morphological cases (NOM, ACC, DAT and LOC). There is possessive agreement – obligatory if the possessor is pronominal and optional otherwise. The verb obligatorily agrees with the subject and agrees with the direct object under certain circumstances. The direct object can be promoted to subject

⁴ The 2SG possessive allows for non-possessive uses and has several properties of a definite article; see Mikhailov (2020) for details.

position by means of the passive (topicalization) morpheme *-a/-i-*. In this case, the demoted subject bears locative case marking.

In the next section, we proceed to the discussion of the characteristics of the two non-finite participial forms of Kazym Khanty, and sketch the classification we propose for them.

4 Non-finite forms in Khanty

4.1 The general characteristics of constructions with non-finite forms

In her study of the Obdorsk dialect of Khanty, Nikolaeva (1999b) distinguishes between infinitive *-ti* and two participles *-ti* and *-əm* that differ in time reference (non-past and past, respectively). The conclusions made by Kaksin (2010) are controversial. On the one hand, he distinguishes three types of non-finite forms (infinitives, participles, and converbs with the *-man* marker); on the other, he notices that there are only two participles in the Kazym dialect, and one of them can have an infinitival function (Kaksin 2010: 110). Based on our fieldwork data, we provide a brief overview of different types of subordinate clauses below.

The *-ti* form can occur in clauses that have an infinitival function – that is, it is employed in non-finite complement clauses and purpose clauses, as in (9) and (10), respectively:

(9) *wuʃs-ijəʔ-s-əw* [*pəʃas-a* *ʔəŋəʔ-ti*]
 want-FREQ-PST-1PL enclosure-DAT corral-NFIN.NPST
 ‘We wanted to corral (the reindeer) into the enclosure.’ [WKhC: “How we went to find the reindeer”]

(10) *waʃa-jen* *woʃ-a* *man-s* [*motor* *ʔət-ti*]
 Vasya-POSS.2SG city-DAT go-PST[3SG] engine buy-NFIN.NPST
 ‘Vasya went to the city to buy a boat engine.’

Both the *-ti-* and *-əm-* forms function as participles in relative clauses. In (11), the non-finite form can refer either to the present or to the future, while (12) refers to the past.

(11) [*ma aʃem* *ari-ti* *ar*] *jis*
 1SG father.POSS.1SG sing-NFIN.NPST song ancient
 a. ‘The song that my father is singing is old.’

b. ‘The song that my father will sing is old.’

(12) [*ma aʃem* *ari-jəm* *ar*] *jis*
 1SG father.POSS.1SG sing-NFIN.PST song ancient
 ‘The song that my father sang is old.’

The head noun can have a possessive affix triggered by the subject of the relative clause:

(13) *ma* *wəʔ-ti* *təχ-əm* *sorəm*
 I live-NFIN.NPST place-POSS.1SG dry
 ‘The place I live in is dry.’ [WKhC: “A lying fox”]

Khanty does not allow for nominal ellipsis, so none of the non-finite forms can occur as a nominalization by themselves. In typical contexts for nominalizations (e.g. sentential arguments of some verbs), Khanty uses a special construction of the so-called ‘periphrastic nominalization’. A deverbal noun is derived with the help of the auxiliary noun *wər* ‘deed’ modified with a non-finite form, as illustrated in (14)–(15). Bikina and Starchenko (2019) show that the *wər*-construction is a subtype of relativization (the relativization of the semantic factive argument).

(14) [*lɯw wɯli katəl-ti wɛr-t*] *ma wə-t-ɛm*
 3SG deer catch-NFIN.NPST deed-POSS.3SG 1SG know-NPST-1SG>SG
 ‘I know that he is catching a deer.’

(15) [*puχ juχt-əm wɛr-t*] *ma wə-t-ɛm*
 boy come-NFIN.PST deed-POSS.3SG 1SG know-NPST-1SG>SG
 ‘I know that the boy came.’

The temporal meaning can also be expressed by the *-t/-m-* forms. There are two main kinds of temporal constructions involving these forms. The first type is represented by a non-finite form bearing locative case marking, as in (16). The locative case has temporal meaning in Khanty (Kaksin 2010: 84).

(16) [*mɯŋ rəpata təj-t-ew-ən*] *χot-et mir-ew*
 1PL job have-NFIN.NPST-POSS.1PL-LOC house-POSS.3PL people-POSS.1PL
jəm-a təj-t-ələw
 good-DAT have-NPST-1PL>NSG
 ‘When we have a job, our people live well in their houses.’

The second type is more relativization-like. That is, there is a nominal/postpositional⁵ head with temporal semantics, and this head is modified with a non-finite form:

(17) [*pətlə-m art-ən*] *śi sij-ət simlə-s*
 get.dark-NFIN.PST moment-LOC FOC sound-POSS.3SG sound-PST[3SG]
 ‘When it got dark, a noise came (from somewhere).’ [WKhC: “The younger daughter”]

(18) [*iket mən-əm jupi-jən*] *aj puχ-ije təj-əs*
 man.POSS.3PL go-NFIN.PST after-LOC small boy-DIM have-PST[3SG]
 ‘After her husband had left, (she) gave birth to (their) son.’ [WKhC: “A golden horse”]

Note that the overt subject of a non-finite clause is nominative. This fact might look unexpected, as non-finite clauses have been claimed to prefer non-nominative subjects (Krause 2001). We argue, however, that unmarked subjects of non-finite clauses can be considered structurally genitive rather than nominative. It is the absence of a morphological genitive marker that might lead to confusion. Specifically, unmarked subjects trigger the same agreement markers as possessors, as shown in (13)–(14). In addition, unmarked subjects of non-finite clauses and possessors compete for the same structural position and therefore cannot occur in the same clause:⁶

(19) **ma aŋkəm pəs-əm jernas-ɛm nuχ sor-s*
 1SG mother.POSS.1SG wash-NFIN.PST dress-POSS.1SG up dry-PST[3SG]
 Intended reading: ‘My dress washed by my mother is dry.’

Finally, certain elements that cannot occur as possessors (e.g. quantifier phrases) cannot occur as unmarked subjects of non-finite clauses either:

(20) **nemχujat aj amp-ət*
 nobody little dog-POSS.3SG
 Intended reading: ‘nobody’s puppy’

⁵ A number of Kazym Khanty relational nouns such as *art* ‘moment’ represent a somewhat intermediate step between a noun and a postposition.

⁶ In order to express such a meaning, the relative clause must be passivized, and the subject must be demoted to locative case, see Section 6.1. The same resolution strategy is applicable to examples (20)–(21) below.

- (21) **nemχujat äñ tuxət-əm an-ət*
 nobody NEG clean-NFIN.PST cup-POSS.3SG
 Intended reading: ‘a cup that nobody washed’

We therefore claim that unmarked subjects of non-finite forms are covertly genitive. Therefore, the fact that they are unmarked and look like nominative nouns does not imply that there is a TP level associated with the assignment of the structural nominative case.

To sum up, there are *-m-* and *-t-* non-finite forms in Khanty that can occur in almost all types of subordination.⁷ In the next subsection, we present the three morphosyntactic types of constructions we distinguish in Khanty.

4.2 Morphosyntactic types of constructions

The three constructions that we want to distinguish differ in their morphosyntactic properties. In some of the cases that we have discussed, the subject is overt and can trigger a possessive marker on the head noun. We see agreement in some cases of relative clauses (see [13]) and *wɛr-*constructions (14). By contrast, there is no overt subject in infinitival constructions (as in [9] and [10]) and therefore no possessive agreement. We see that it is not impossible for the non-finite form itself to bear possessive markers – in (16), the possessive agreement marker is on the verb form. Thus, on the one hand, constructions in one and the same position show diversity in their morphosyntactic marking, while the constructions occupying different positions match the same morphosyntactic patterns.

We start by distinguishing three basic morphosyntactic patterns for non-finite constructions and reducing the multifunctionality of Khanty non-finite forms to three morphosyntactic classes:

- Non-finite constructions that never show any agreement: ‘bare non-finites’
- Non-finite constructions with possessive agreement on the head noun (under certain conditions agreement affixes can be absent): ‘head-noun-agreement non-finites’
- Non-finite constructions with possessive agreement on the non-finite form itself (under certain conditions agreement affixes can be absent): ‘verb-agreement non-finites’

Our claim is that the difference between non-finite constructions lies in the amount of syntactic structure behind these forms. We will also show that the multifunctionality of these forms can be described in terms of implicational hierarchies that were proposed for subordinate clauses. In the following section, we consider the three classes defined above in more detail and show that they differ in their syntactic behaviour. In doing so, we will be looking at the ways the subject can be expressed in Khanty non-finite constructions.

5 Subject expression and agreement

The basis of our classification is the way non-finite constructions express their subject and show agreement with it. In most cases, the subject of a non-finite clause is overt. Although object agreement is attested in finite clauses in Khanty, in the non-finite domain, object agreement is never possible. In this section, we discuss subject agreement for the three types of constructions listed above.

⁷ The only exceptions are conditional clauses, which are finite and are introduced by a conditional complementizer *ki* ‘if’. Some other adverbial relations, such as concession, can be expressed by means of coordination, as in (20) below. We will come back to this in Section 8.

5.1 Bare non-finites

This class consists of sentential complements of phasal (e.g. ‘start’, ‘finish’) and modal verbs. These are control clauses that never express their subject overtly, its reference being reconstructed from the matrix clause. The PRO subject never triggers agreement on the non-finite form.

- (22) *ma ašem par-s-em [rat χār āt-ti]*
 1SG father.POSS.1SG order-PST-1SG>SG fireplace place set.on.fire-NFIN.NPST
 ‘I asked my father to make a bonfire.’

Expressing the subject is banned:

- (23) **ma ašem par-s-em [tuw rat χār*
 1SG father.POSS.1SG order-PST-1SG>SG 3SG fireplace place
āt-ti]
 set.on.fire-NFIN.NPST
 Intended reading: ‘I asked my father to make a bonfire.’

This clause type can only be formed with the non-past non-finite form with the marker *-ti*:

- (24) a. *ma [jeməŋ χātəl-a śi kuš man-ti] wutśə-s-əm*
 1SG holy day-DAT EMPH although go-NFIN.NPST want-PST-1SG
pa rəpata ar tāj-s-əm
 ADD work many have-PST-1SG
- b. **ma [jeməŋ χātəl-a śi kuš man-əm] wutśə-s-əm*
 1SG holy day-DAT EMPH although go-NFIN.PST want-PST-1SG
pa rəpata ar tāj-s-əm
 ADD work many have-PST-1SG
 ‘Although I wanted to visit the festival, I had a lot of work to do.’

5.2 Head-noun-agreement non-finites

This class includes non-finite constructions with the possessive marking on an extra-clausal element – most often, on the head noun. In this case, the pattern of agreement matches the one found in possessive noun phrases (cf. [5] vs. [6]).

This is what we see in some non-finite clauses, in particular relative clauses. Pronominal subjects of non-finite relative clauses trigger obligatory possessive marking on the head noun. This is attested in both non-past and past relative clauses. (25)–(27) demonstrate the agreement pattern which is parallel to what has been observed in possessive phrases (see [1]–[3] above).

- (25) *ma oms-əm χot-*(em)*
 1SG build-NFIN.PST house-POSS.1SG
 ‘the house I built’
- (26) *nāy t’uxət-əm išni / išnen*
 2SG wash-NFIN.PST window window.POSS.2SG
 ‘the window you washed’
- (27) *tuw luŋət-ti kinška-*(jət)*
 3SG read-NFIN.NPST book-POSS.3SG
 ‘the book he/she is reading’

If the subject of the relative clause is non-pronominal, agreement remains optional:

- (28) *aŋkɛm* *t'uxət-əm* *išni* / *išnet*
 mother.POSS.1SG wash-NFIN.PST window window.POSS.3SG
 'the window washed by my mother'

If it is the subject that is relativized, no agreement markers are needed since there is no subject in the relative clause:

- (29) *χurət-ti* *amp* *ewəlt* *ma* *päl-t-əm*
 bark-NFIN.NPST dog from 1SG be.afraid-NPST-1SG
 'I am afraid of the barking dog.'

All kinds of relativization can be classified as head-noun-agreement non-finite constructions. This includes periphrastic nominalization with a semantically empty head:

- (30) [*luw wuli katət-ti* *wər-t*] *ma* *wə-t-əm*
 3SG deer catch-NFIN.NPST deed-POSS.3SG 1SG know-NPST-3SG>SG
 'I know that he is catching a deer.'

Instances of relativization that function as temporal adjuncts also belong to this class of non-finites. In this case, the head noun bears possessive agreement and locative case. In (31), the subject is a 1SG pronoun and there is possessive agreement on the head noun; in (32), the non-pronominal subject does not trigger agreement.

- (31) [*ma ul-əm* *mär-əm-ən*] *pet'a-jen* *ow-əm*
 1SG lie-NFIN.PST time-POSS.1SG-LOC Petya-POSS.2SG door-POSS.1SG
sɛŋk-əm-əs
 knock-MOM-PST[3SG]
 'While I was sleeping, Petya knocked on my door.'

- (32) *woš ol-ti* *mär-ən*
 town sleep-NFIN.NPST time-LOC
 'while the town was sleeping' [WKhC: "The eagle"]

All in all, we observed that in some Khanty non-finite constructions, the subject agrees with the head noun of the construction. This pattern is represented in relative clauses and relative-like constructions that occur as sentential complements or temporal adjuncts.

5.3 Verb-agreement non-finites

In the third type of construction, the agreement marker is on the non-finite form itself. This is observed in several types of adverbial clauses and sentential complements. (33) shows an adverbial clause. There is no nominal head – the agreement marker is attached directly to the non-finite verb form. The locative case marker follows the agreement marker.

- (33) [*muŋ rɔpata täj-m-ew-ən*] *χot-el* *mir-ew*
 1PL job have-NFIN.PST-POSS.1PL-LOC house-POSS.3SG people-POSS.1PL
jäm-a *täj-s-ətəw*
 good-DAT have-PST-1PL>NSG
 'When we had a job, our people in their house were living well.'

The expression of possessive agreement on the non-finite form is possible even if a postpositional head is present. Most postpositions in Khanty are grammaticalized relational nouns and therefore show a similar agreement pattern (cf. [4] in Section 3). Some postpositions can take clausal complements (cf. [17] in Section 4.1). One of them is *päta* 'for'. It can head purpose/reason clauses. Thus, in (34) the postposition takes a personal pronoun as its complement and the latter triggers agreement on the postposition:

- (34) *ma păt-εm-a*
 1SG for-POSS.1SG-DAT
 ‘for me’

If *păta* takes a clause as its complement, the possessive marker triggered by the subject of the clause occurs directly on the non-finite form:

- (35) [*ma jăm-a ul-t-εm păta*] *aηkεm*
 1SG good-DAT lie-NFIN.NPST-POSS.1SG for mother.POSS.1SG
amp-əl jira wošət-s-əlle
 dog-POSS.3SG away chase-PST-3SG>SG
 ‘My mother chased away the dog in order for me to sleep well.’

This is also true for some other postpositions, e.g. *saxət* ‘behind’:

- (36) [*ma ul-t-εm saxət*] *pet’a-jen ow-εm*
 1SG lie-NFIN.NPST-POSS.1SG behind Petya-POSS.2SG door-POSS.1SG
sεηk-εm-əs
 knock-MOM-PST[3SG]
 ‘When I was sleeping, Petya knocked the door.’

Thus, the expression of possessive agreement on the non-finite form is possible in locative-marked temporal clauses without an overt nominal or postpositional head, and in some types of adverbial clauses headed by a postposition. Another instance of agreeing non-finite forms is the complement position of certain verbs. These are verbs that do not presuppose argument sharing, e.g. *wəti* ‘know’ or *χəł’əti* ‘hear’. In these cases, the infinitive does not have any case marker nor is it headed by a postposition. Agreement markers follow the non-finite marker, as in (37).

- (37) *ma [liw juχət-t-εt] χəł-t’-əs-εm*
 1SG 3PL come-NFIN.NPST-POSS.3PL hear-PLAC-PST-1SG>SG
 ‘I heard that they are coming.’

It is necessary to emphasize that agreement is not obligatory in all cases, either in the verb-agreement or in the head-noun-agreement construction. Both constructions always show agreement when the subject is expressed by a personal pronoun. Otherwise, the agreement is optional. This fact can lead to confusion. Head-noun-agreement clauses can still be easily distinguished from other constructions on the basis of there being a separate nominal head. Non-past verb-agreement non-finite clauses, however, become homonymous to bare non-finites. (38) actually belongs to the third class of non-finites (verb-agreeing non-finites), while (39) (repeated from [22]) is an instance of the bare non-finite class. Nonetheless, the verb forms look identical.

- (38) *as-a jăηχ-ti / jăηχ-t-εm păta ma jiləp χop tət-s-əm*
 Ob-DAT go-NFIN.NPST go-NFIN.NPST-POSS.1SG for 1SG new boat buy-PST-1SG
 ‘I bought a new boat to go to the Ob river.’

- (39) *ma aśεm par-s-εm [rat χăr ăt-ti /*
 1SG father.POSS.1SG order-PST-1SG>SG fireplace place set.on.fire-NFIN.NPST
 *ăt-t-ət]
 set.on.fire-NFIN.NPST-POSS.3SG
 ‘I asked my father to make a bonfire.’

In the next section, we will show that there is independent morphosyntactic evidence to treat examples like (38) and (39) differently. We will mostly use agreeing clauses as examples of verb-agreement non-finite class for the sake of clarity.

6 Internal syntax

6.1 Interaction with argument alternations

The first issue to be discussed is the argument alternations available within the constructions under discussion. While in finite clauses in Khanty an ‘external passive’ would appear marked with the *-a-/-i-* suffix (see Section 3), this marker is not attested in non-finite constructions. In some non-finite contexts the demotion of the subject is possible without any indexing on the verb. The contrast between active and passive alignment in non-finite environment is seen in (40). This example is a relative clause, and the subject can be either nominative or locative. The locative subject has been demoted. The verb forms in (40a) and (40b) are identical.

- (40) a. [*śaśem* *łət-əm* *păsan*] *nuχ* *məηχ-s-εm*
 grandmother.POSS.1SG buy-NFIN.PST table up wipe-PST-1SG>SG
- b. [*śaśem-ən* *łət-əm* *păsan*] *nuχ* *məηχ-s-εm*
 grandmother.POSS.1SG-LOC buy-NFIN.PST table up wipe-PST-1SG>SG
 ‘I wiped the table bought by my grandmother.’

If the relativization pivot is something other than subject or direct object, passive alignment of the subject is unavailable. (41) illustrates adjunct relativization; the subject can only be nominative:

- (41) a. [*maša-jen* *łomt-əm* *wənt*] *śik*
 Masha-POSS.2SG get.lost-NFIN.PST forest dense
- b. [**maša-jen-ən* *łomt-əm* *wənt*] *śik*
 Masha-POSS.2SG-LOC get.lost-NFIN.PST forest dense
 ‘The forest where Masha got lost is dense.’

This restriction only applies to canonical adjunct relative clauses. Complement and temporal constructions that are akin to relative clauses allow for passivization. In (42), the complement clause has a dummy head *wεr* ‘deed’ and the subject is locative. In (43), we see a locative subject in a temporal quasi-relative construction with the head noun *măr* ‘time’.

- (42) [*łəχs-εm-ən* *kinśka* *wu-t’-əm* *wεr*] *wə-t-εm*
 friend-POSS.1SG-LOC book take-FREQ-NFIN.PST deed know-NPST-1SG>SG
 ‘I know that the book has been taken by my friend.’
- (43) [*năη petr-en-ən* *ławət-əm* *măr-en-ən*] *maša-jen* *łant*
 2SG Peter-POSS.2SG-LOC wait-NFIN.PST time-POSS.2SG-LOC Masha-POSS.2SG flour
jiηk kawərt-əs
 water cook-PST[3SG]
 ‘While you were waited by Peter, Masha cooked soup.’

All the verb-agreement non-finite constructions are compatible with passive alignment. (44) illustrates this for an adjunct clause expressing a reason. The original agent ‘Petya’ is demoted to locative case, and the patient ‘Masha’ is promoted to nominative. The surface subject triggers agreement on the verb form, and we see agreement marking following participial marking on the verb.

- (44) [*maša-jen pet'a-jen-ən ən woχ-m-at*] *pāta*
 Masha-POSS.2SG Petya-POSS.2SG-LOC NEG call.for-NFIN.PST-POSS.3SG for
łuw jeməŋ xātł-a ən juχt-əs
 3SG holy day-DAT NEG come-PST[3SG]
 ‘As Masha had not been invited by Petya, she did not come to the celebration.’

The same pattern is present in verb-agreement complement clauses:

- (45) *waša-jen mənema [nəŋ pet'a-jen-ən seŋk-m-en]*
 Vasya-POSS.2SG 1SG.DAT 2SG Petya-POSS.2SG-LOC hit-NFIN.PST-POSS.2SG
lup-əs
 tell-PST[3SG]
 ‘Vasya told me that you have been hit by Petya.’

Bare non-finite complements, by contrast, do not allow for subject demotion:

- (46) *waša maša-jen əpəłt-ti ləŋχa-t*
 Vasya Masha-POSS.2SG hug-NFIN.NPST want-NPST[3SG]
 ‘Vasya wants to hug Masha.’
- (47) **waša maša-jen-ən əpəłt-ti ləŋχa-t*
 Vasya Masha-POSS.2SG-LOC hug-NFIN.NPST want-NPST[3SG]
 Intended reading: ‘Vasya wants to be hugged by Masha.’

To summarize, in Kazym Khanty the following non-finite constructions are compatible with both active and passive alignment:

- all verb-agreement non-finites,
- head noun-agreement non-finites, except for instances of adjunct relativization.

Bare non-finites are not compatible with passive argument alignment.

6.2 Island effects

In this section, we examine the next diagnostic that distinguishes different types of non-finite forms, namely island effects. As a test for island effects we use *wh*-extraction.

Consider first the bare non-finite construction, as given in (48), where it occurs as the complement of the expression *numəs wer-ti* (decision do-NFIN.NPST) ‘make a decision’:

- (48) *kat'a-jen numəs wer-əs wən χot lət-ti*
 Kate-POSS.2SG decision do-PST[3SG] big house buy-NFIN.NPST
 ‘Kate decided to buy a big house.’

Verbal complements like the one above are not syntactic islands. This means that a *wh*-expression can be extracted out of the direct object position of a bare non-finite construction, as in (49):

- (49) *mujšər χot kat'a-jen numəs wer-s lət-ti?*
 which house Kate-POSS.2SG decision do-PST[3SG] buy-NFIN.NPST
 ‘What house did Kate decide to buy ~~what house?~~’

By contrast, most non-finite forms with nominal-like agreeing heads are islands and do not allow for extraction. This includes the *wer*-construction. For instance, this construction can occur as the complement of the verb *nəmti* ‘remember’:

- (50) *ma maša-jen-a jernas mojl-əm wər-əm ma*
 1SG Maša-POSS.2SG-DAT dress give-NFIN.PST deed-POSS.1SG 1SG
nəm-t-əm
 remember-NPST-1SG>SG
 ‘I remember that I gave a dress to Masha.’

In contrast to bare non-finites, *wər*-constructions do not allow for *wh*-extraction. This is illustrated in (51), where such a construction is embedded by the same verb ‘remember’:

- (51) **muj nəŋ lət-əm wər-en nəm-t-en?*
 what 2SG buy-NFIN.PST deed-POSS.2SG remember-NPST-2SG>SG
 Intended reading: ‘What do you remember that you bought ~~what~~?’

Another example of a strong syntactic island in Khanty is a relative clause. Relative clauses are also head-noun-agreement non-finites.⁸

- (52) *kol’a-jen mərəχ wəńs-ti ewi šiwałə-s*
 Kolya-POSS.2SG cloudberry pick-NFIN.NPST girl see-PST[3SG]
 ‘Kolya saw a girl who was picking cloudberry.’

Wh-extraction out of this relative clause is prohibited:

- (53) **muj kol’a-jen wəńs-ti ewi šiwałə-s?*
 what Kolya-POSS.2SG pick-NFIN.NPST girl see-PST[3SG]
 Intended reading: ‘What did Kolya see the girl who was picking ~~what~~?’

Not all head-noun-agreement non-finites are strong islands, though. Some of them can be considered weak islands. That means that extraction out of them is not totally prohibited but unpreferred (marginally grammatical). One instance of a head-noun-agreement non-finite that shows weak island properties is presented by adverbial clauses of time with agreement on the temporal head noun. In (54), the temporal noun *mär* ‘time’ agrees with the pronominal 1SG subject:

- (54) *ma ul-əm mār-əm-ən pet’a-jen ow-əm-a*
 1SG lie-NFIN.PST time-POSS.1SG-LOC Petya-POSS.2SG door-POSS.1SG-DAT
səŋk-əs
 knock-PST[3SG]
 ‘While I was sleeping, Petya knocked on the door.’

Extraction of a *wh*-word out of such temporal clauses is judged marginally acceptable, but not completely grammatical:

- (55) ?*χuj pet’a-jen ul-əm mār-t-ən*
 who Petya-POSS.2SG lie-NFIN.PST time-POSS.3SG-LOC
ow-a səŋk-əs?
 door-DAT knock-PST[3SG]
 ‘Who Petya knocked on the door, while ~~who~~ was sleeping?’

Finally, verb-agreement non-finites are strong syntactic islands, too. The verb *χəlti* ‘hear’ can take a verb-agreement non-finite as its complement, as in (37) above, repeated here as (56):

⁸ If the subject of a relative clause is pronominal, the head noun of the relative clause agrees with it. In (52), there is no agreement since the subject is not pronominal. The absence of overt agreement in (52) is not important in the reasoning behind this section.

- (56) *ma [liw juxət-t-et] χəł-t'-əs-εm*
 1SG 3PL come-NFIN.NPST-POSS.3PL hear-PLAC-PST-1SG>SG
 'I heard that they are coming.'

Extraction out of such a clause is strictly prohibited, too:

- (57) **χuj-at nəη juxət-t-et χəł-t'-əs-ən?*
 who-PL 2SG come-NFIN.NPST-POSS.3PL hear-PLAC-PST-2SG
 Intended reading: 'Who did you hear that ~~who~~ were coming?'

To summarize, only bare non-finites are clearly transparent for *wh*-extraction. Head noun-agreement non-finites and verb-agreement non-finites are generally restricted in that sense, although adverbial clauses with noun agreement might have some variation. In this way, island effects distinguish between bare and agreeing non-finite clauses but fail to distinguish between non-finite forms with agreement on verbs and agreement on head nouns.

6.3 Adverbial modification

The differences in the internal structure between our three constructions may also be shown via the availability of certain types of adverbs. Following Cinque (1999), we assume that adverbs belong to different levels of functional structure, which correlates with various TAM-properties of the clause. In this way, if a construction lacks a certain layer, it cannot be modified with the corresponding adverbs.

Verb-agreement non-finite clauses allow for high epistemic adverbs like *jina* 'indeed' (58). The availability of such adverbs reflects the presence of the CP projection in this construction.

- (58) *ma apśem jina aηkew*
 1SG younger.brother.POSS.1SG indeed mother.POSS.1PL
χəłənt-ijəl-t-at wə-l-εm
 obey-FREQ-NFIN.NPST-POSS.3SG know-NPST-1SG>SG
 'I know that my younger brother obeys our mother indeed.'

Head-noun-agreement constructions do not form a uniform category in this respect. Canonical relative clauses exhibit an AspP structure. This follows from the fact that any higher-level adverbs cannot occur within them. So, neither active nor passive relative clauses can be modified with epistemic adverbs (59a–b), which are usually associated with the CP level, tense-related adverbs like 'before' or 'later', or with modal adverbs (cf. [60]–[61] below). Hence, we assume that relative clauses do not project up to CP, TP, and ModP functional projections.

- (59) a. **[apśem jina χəłənt-ijəl-ti χănnεχə]*
 younger.brother.POSS.1SG indeed obey-FREQ-NFIN.NPST person
mηη aηkew
 1PL mother.POSS.1PL
- b. **[apśem-ən jina χəłənt-ijəl-ti χănnεχə]*
 younger.brother.POSS.1SG-LOC indeed obey-FREQ-NFIN.NPST person
mηη aηkew
 1PL mother.POSS.1PL
 Intended reading: 'The person whom my little brother, indeed, obeys is our mother.'

The same restriction is observed for modal adverbs (60), which Cinque associates with a special ModP level, and for TP-level adverbs (61), such as 'before' or 'later':

(60) *[*ma ašem* *mosəŋ ari-ti* *ar*] *wera katra*
 1SG father.POSS.1SG possibly sing-NFIN.NPST song very ancient
 Intended reading: ‘The song that my father will possibly sing is very old.’

(61) *upem* (**jəχət*) *wənəlt-ijət-ti* *ăškola*
 sister.POSS.1SG later learn-FREQ-NFIN.NPST school
 Intended reading: ‘the school where my sister will later study’

Any lower-level adverbs seem to be available for canonical relative clauses. Thus, they allow for agent-oriented adverbs (62) as well as for some aspectual adverbs (63). This shows that the head-noun-agreement non-finite form in a canonical relative clause has vP and AspP layers in its structure.

(62) [*apšem* *neman* *šukət-əm* *an*]
 younger.brother.1SG intentionally break-NFIN.PST cup
aŋkem *mət sām-əŋ* *an wəs*
 mother.POSS.1SG most heart-PROP cup be[PST.3SG]
 ‘The cup that my little brother had intentionally broken was my mother’s favourite one.’

(63) *waša-jen-ən* *isašək* *oləp-ən ner-ijl-ti* *χot*
 Vasya-POSS.2SG-LOC often dye-LOC paint-FREQ-NFIN.NPST house
 ‘the house that Vasya often paints’

Some of the head-noun-agreement non-finites are larger than AspP. For instance, periphrastic nominalization can be used with TP-level adverbs (64). In this respect, canonical relative clauses (61) and *wer*-constructions (64) are different.

(64) [*waša-jen* *jəχət tərəmlor-a* *jəŋχ-əm* *wer-l*]
 Vasya-POSS.2SG later Numto-DAT go-NFIN.PST deed-POSS.3SG
ma wə-t-əm
 1SG know-NPST-3SG>SG
 ‘I know that later Vasya visited Numto.’

However, the *wer*-clauses are still incompatible with high-epistemic adverbs:

(65) *[*ši neŋen* *ńawrem jina* *təmət-t-əm* *wer*]
 this woman.POSS.2SG child indeed put.on-TR-NFIN.PST deed
ma wə-s-əm
 1SG know-PST-3SG>SG
 Intended reading: ‘I knew that this woman has indeed already dressed her baby.’

These facts show that *wer*-constructions have more functional structure than standard relative clauses. Sentential complements with *wer* clearly have a TP layer, while standard relative clauses do not project higher than AspP.

Bare non-finites have different sizes according to the adverbial test. Some of them, such as complements of the verb ‘want’, allow for agent-oriented adverbs (66) and temporal adverbs (67) but not for high epistemic ones (68).

(66) *pet’a-jen* [*neman* *woš-a* *măn-ti* *lăŋχa-l*]
 Petya-POSS.2SG intentionally city-DAT go-NFIN.NPST want-NFIN.NPST[3SG]
 ‘Petya wants to intentionally go to the city.’

(67) *petr-en* [*jăšawəl* *woš-a* *măn-ti* *lăŋχa-l*]
 Peter-POSS.2SG later city-DAT go-NFIN.NPST want-NPST[3SG]
 ‘Peter wants to go to the city later.’

- (68) [#]*waśa-jen* [*jina rat χār χərət-ti tǎŋχa-t*]
 Vasya-POSS.2SG really fireplace place douse-NFIN.NPST want-NPST[3SG]
 Intended reading: ‘Vasya wants to really douse the fire’ (said if Vasya wants a big fire)
 Actual reading: ‘Vasya really wants to douse the fire’ (said if one wants to convince the hearer that Vasya actually wants to do it)

Thus, we can postulate a TP structure for the complements of modal verbs. In Kazym Khanty there are matrix predicates that take bare non-finite complements with less internal structure. One such predicate is the verb *jureməti* ‘forget’. The embedded non-finite form cannot be modified by agent-oriented adverbs, which are usually associated with the *v*P layer:

- (69) [#]*pet’a-jen neman waśa-jen χǎtsə-ti juremə-s⁹*
 Petya-POSS.2SG intentionally Vasya-POSS.2SG hit-NFIN.NPST forget-PST[3SG]
 Intended reading: ‘Petya forgot to intentionally hit Vasya.’
 Actual reading: ‘Petya intentionally forgot to hit Vasya.’

In Section 7, we will argue that these non-finite forms still have a *v* head, but this head is defective and cannot be associated with the agent role.

To summarize, the adverbial test has yielded the following results. The smallest amount of structure is exhibited by bare non-finites, which are smaller than TP. There is variation between bare complements of different verbs, though, and some of them are incompatible even with *v*P-associated adverbs. Relative clauses are AspPs, while relative-like complement constructions are TPs. Verb-agreement non-finites project up to the CP level.

In this section, we investigated the morphosyntactic properties of the three classes of non-finite constructions in Khanty that we distinguished in Section 4. First, we showed that our classification naturally comes from the three agreement patterns observed in non-finite constructions. We further showed that there are more syntactic differences that distinguish between the three classes. One of these differences is the availability of island effects, and another one is the availability of different adverbs. These two properties indicate that the three classes of constructions differ in the amount of functional structure. The results of this section are summarized in Table 1.

Table 1: Morphosyntactic properties of Kazym Khanty non-finite constructions

| | | Highest adverbs | Island effects | Passive voice | Overt subject |
|--|-----------------------------------|-----------------|----------------|---------------|---------------|
| | Verb-agreement non-finites | CP | yes | ok | ok |
| Head-noun-agreement non-finites | Dummy-head constructions | TP | yes | ok | ok |

⁹ We use the # symbol for examples that are grammatical but have a different meaning than the one we intended.

| | | | | |
|-------------------------|---|-----|------------------------------------|----|
| Relative clauses | AspP | yes | Argument relativization only | ok |
| Bare non-finites | Depends on the matrix verb, but smaller than TP | no | * | * |

In the next section, we move on to the discussion of the external syntax of the three types of non-finite constructions in Khanty.

7 External syntax of the constructions

In the previous section, we discussed in detail the microvariation within the internal syntax of Khanty non-finite constructions and showed that the observed differences contribute to our classification. The core differentiating factor of the three construction types concerns their head properties. Thus, it is natural to suppose that the way the constructions can combine with the matrix clause in a different way, and that each type can be associated with a certain class of matrix verbs. What follows is a discussion of the variation in the external syntax of the three types of non-finite constructions in Khanty.

We will consider the three classes of non-finite constructions one by one. We start with bare non-finites. After that, we move on to head-noun-agreement non-finites. Finally, we discuss the external syntax of verb-agreement non-finites.

7.1. Bare non-finites

Bare non-finites mostly function as complement clauses. The only exceptions are purpose clauses without postpositions, as in (70).

- (70) *waša-jen woš-a man-əs [motor lət-ti]*
 Vasya-POSS.2SG city-DAT go-PST[3SG] engine buy-NFIN.NPST
 ‘Vasya went to the city to buy a boat engine.’

As for sentential complementation, bare non-finites are subcategorized for by phasal (71), modal (72), volitional (73) and manipulation (74) matrix predicates.

- (71) *ma [tət χərət-ti wuli-s-əm]*
 1SG fire douse-NFIN.NPST stop-PST-1SG
 ‘I stopped dousing the fire.’
- (72) *mänema [rəpit-ti mos-t]*
 1SG.DAT work-NFIN.NPST be.needed-NPST[3SG]
 ‘I must work.’
- (73) *ma [χot-əm ner-ti] länχa-t-əm*
 1SG house-POSS.1SG paint-NFIN.NPST want-NPST-1SG
 ‘I want to paint my house.’
- (74) *ma ašem par-s-əm [rat χär ät-ti]*
 1SG father.POSS.1SG order-PST-1SG>SG fireplace place set.on.fire-NFIN.NPST
 ‘I asked my father to make a bonfire.’

Such clauses do not show any nominal-like behaviour. They cannot bear case markers or trigger object agreement on the matrix verb:

- (75) a. [*χot-εm* *ner-ti*] *wuli-s-əm*
house-POSS.1SG paint-NFIN.NPST stop-PST-1SG
- b. **[χot-εm* *ner-ti*] *wuli-s-εm*
house-POSS.1SG paint-NFIN.NPST stop-PST-1SG>SG
‘I stopped painting my house.’

Bare non-finites do not constitute a completely homogeneous group in terms of external syntax. As Potseluev (2020) argues, certain phasal verbs such as *pitti* ‘become, begin’ and *oljitti* ‘start’, desiderative verbs (*wutśati* ‘want’) and the verb *juremati* ‘forget, fail’ constitute a distinct subgroup of clause-union or restructuring verbs in terms of Wurmbrand (1998, 2014, 2015). These matrix verbs allow for long-distance passivization and long-distance object agreement. The former means that when a subordinate clause is passivized, its object promotes to the matrix clause subject position, and it is the matrix verb that bears the overt passive morpheme. Thus, in (76) the matrix verb ‘forget’ is marked as passive and agrees with its subject, which is *ratət* ‘fire(place)s’ – originally a subordinate object.

- (76) [*rat-ət* *χərət-ti*] *juremə-s-i-jət*
fireplace-PL douse-NFIN.NPST forget-PST-PASS-3PL
‘Somebody forgot to douse the fires.’ (Lit. ‘The fires were forgotten to douse’)

Long-distance object agreement means that a matrix verb agrees with a subordinate object as if it were its own. In (77), there is plural object agreement on the matrix predicate, and it is the plural object of the embedded clause that triggers it.

- (77) *ma* [*χot-l-am* *ner-ti*] *oljit-s-əlam*
1SG house-PL-POSS.1SG paint-NFIN.NPST start-PST-1SG>NSG
‘I started to paint my houses.’

Bare non-finites embedded by other matrix predicates do not exhibit restructuring effects. For instance, sentential complements of the verb *păkti* ‘manage’ do not allow for long-distance passivization (78). Long-distance agreement is likewise not available (79).

- (78) **[tām* *kińška-jət* *lujət-ti*] *păk-s-a-jət*
this book-PL read-NFIN.NPST manage-PST-PASS-PL
Intended reading: ‘These books were managed to be read.’
- (79) **[ma* *kińška-l-am* *lujət-ti*] *păk-s-əlam*
1SG book-PL-POSS.1SG read-NFIN.NPST manage-PST-1SG>NSG
Intended reading: ‘I managed to read my books.’

Recent approaches to restructuring infinitives propose that restructuring constructions which allow for long passivization are *v*P_s and not VP_s (Wurmbrand 2014). They do involve a voice head *v*_R, but this head is underspecified for *φ*-features and *v*-values. Such a head is not full-fledged in the sense that it is unable to select a subject (since its *v*-value is not *v*:AGENT) and cannot assign accusative case to the object. In this way, the *v*_R head approach can account for long passivization.

Postulating a *v*_RP in restructuring non-finites in Khanty can also account for long object agreement. For Obdorsk Khanty, it has been shown that agreeing objects are structurally higher than non-agreeing ones (Nikolaeva 1999a; Nikolaeva 1999b: 67–69; Smith 2020). Smith (2020) associates Khanty object agreement with object raising to Spec,*v*P. This position makes the object accessible to Agree. The *v*P layer is claimed to be a hard phase in Khanty, which in this particular case means that Spec,*v*P is the lowest agreement probe in the syntactic tree. We

implement Smith's claim into our analysis and postulate a *vP* layer in Kazym Khanty non-finite constructions which can be subcategorized by restructuring predicates as well.

If the *v* head involved in the structure of restructuring verbs in Khanty is not *v:AGENT*, then the prediction that restructuring predicates do not allow for agent-oriented adverbs is borne out. We repeat example (69) here to illustrate this:

- (80) *pet'a-jen neman waša-jen χātsə-ti juremə-s*
 Petya-POSS.2SG intentionally Vasya-POSS.2SG hit-NFIN.NPST forget-PST[3SG]
 Intended reading: 'Petya forgot to intentionally hit Vasya.'
 Actual reading: 'Petya intentionally forgot to hit Vasya.'

7.2. Noun-agreement non-finites

Non-finite constructions whose subjects agree with the head noun may be split into the following classes:

- complement clauses with *wer* 'deed' in the head position
- relative clauses
- relative-like temporal clauses with a temporal noun in the head position

Complement clauses with *wer* are always associated with a factive inference. Thus, they occur as complements of verbs of knowledge (81) but not as complements of verbs like 'begin' (82):

- (81) *ma l#w mułχātəl χot-t ara losit-əm*
 1SG 3SG yesterday house-POSS.3SG apart deconstruct-NFIN.PST
wer-t wə-s-əm
 deed-POSS.3SG know-PST-1SG>SG
 'I knew that the day before, he had deconstructed the house.'
- (82) a. *l#w χot-t ara losit-ti oljit-s-əlle*
 3SG house-POSS.3SG apart deconstruct-NFIN.NPST begin-PST-3SG>SG
 'He started to deconstruct his house.'
- b. *l#w χot-t ara losit-ti wer-t*
 3SG house-POSS.3SG apart deconstruct-NFIN.NPST deed-POSS.3SG
oljit-s-əlle
 begin-PST-3SG>SG
 Intended reading: 'He started to deconstruct his house.'

We also see *wer*-constructions in syntactic positions typical for nominalizations. For instance, they can occur as subjects:

- (83) [*l#w χoŋksa tal-ti wer-t*] *mānem turas āntə*
 3SG cigarette pull-NFIN.NPST deed-POSS.3SG 1SG.DAT discomfort NEG.EX
 'His smoking does not annoy me.'

Wer-constructions can also be embedded by postpositions:

- (84) [*amp-ət χurət-ti wer-ət ewəlt*] *l#w pakn-əs*
 dog-PL bark-NFIN.NPST deed-PL from 3SG get.scared-PST[3SG]
 'He got scared by the dogs' barking.'

Wer-constructions are complements of factive verbs, but they also occur in contexts where nouns typically occur. The fact that nominalizations are often associated with factive inference

has been widely discussed in the literature although the source of this inference is subject to discussion (Moulton 2009; Özyıldız 2017; Bondarenko 2020). The nature of the factive inference in Khanty *wer*-constructions is beyond the scope of this paper. We adhere to the position that *wer*-constructions are a kind of a periphrastic nominalization.

Relative clauses show the same syntactic distribution as their head nouns. The head noun can also be modified by additional adnominal modifiers, such as demonstrative pronouns:

- (85) *tām aŋkəm lət-əm nań jiləp*
 this mother.POSS.1SG buy-NFIN.PST bread new
 ‘This bread that my mother bought is fresh.’

Relative-like temporal clauses seem to be more restricted in this sense. Although we do not have data on whether a semantically empty head noun can express plural number, we do not find such examples in the corpus and suspect that plural modification would evoke a count interpretation of events introduced by the temporal clause. We do not find any examples of such clauses being modified with adjectives or demonstrative pronouns in the corpus, either. The temporal noun has to be locative, and this is a typical use of locative in Khanty – cf. (86), where the semantically full-fledged noun ‘winter’ is marked with locative, and a temporal clause in (87):

- (86) *ma tăt-ən kərt-əm-a mǎn-l-əm*
 1SG winter-LOC village-POSS.1SG-DAT go-NPST-1SG
 ‘In the winter, I will go to my village.’ [WKhC: “A dialogue”]

- (87) [*šaj jańs-əm mǎr-ew-ən jetn-a śi*
 tea drink-NFIN.PST time-POSS.1PL-LOC evening-DAT FOC
ji-ti pit-əs
 come-NFIN.NPST become-PST[3SG]
 ‘While we were drinking tea, the evening came.’ [WKhC: “On the river bank”]

Temporal relative-like constructions can also occur in argument positions, in which they resemble relative clauses:

- (88) [*iket pa juχət-ti pora-ja śi ji-s*
 man.POSS.3SG ADD come-NFIN.NPST time-DAT FOC come-PST[3SG]
 ‘The time when her husband comes home has already come.’ [WKhC: “The woman left with her children”]

All in all, we conclude that most noun-agreement non-finite constructions have nominal distribution. Constructions with *wer* ‘deed’ in the head position can also occur as sentential complements of factive verbs.

7.3. Verb-agreement non-finites

Verb-agreement non-finites occur as sentential complements or as adverbial clauses. In the former case, they are embedded by mental predicates (89) or verbs of perception (90):¹⁰

- (89) *waša [ašem əχət wer-t-ał] juremə-s-lə*
 Vasya father.POSS.1SG sledge do-NFIN.NPST-POSS.3SG forget-PST-3SG>SG
 ‘Vasya forgot that my father was making a sledge.’

¹⁰ The crucial difference between verb-agreement non-finites and *wer*-constructions is that only the former can occur as complements of perception verbs, as in (84). However, we leave this fact without explanation for now.

- (90) *ma [aśem eχət wɛr-t-at] wan-s-ɛm*
 1SG father.POSS.1SG sledge do-NFIN.NPST-POSS.3SG see-PST-1SG>SG
 ‘I saw how my father was making a sledge.’

We argue that the verb-agreement non-finite form has some nominal shell. First, agreeing non-finites trigger object agreement, as in (89)–(90), which suggests that there is something that receives structural accusative case. Second, verb-agreement non-finite forms can be promoted to the subject position via passivization:

- (91) [*waśa-jen rat χər χərət-m-at]*
 Vasya-POSS.2SG fireplace place douse-NFIN.PST-POSS.3SG
pet'a-jen-ən wan-s-a
 Petya-POSS.2SG-LOC see-PST-PASS[3SG]
 ‘Vasya’s dousing of the bonfire has been seen by Petya.’

Like nominals, verb-agreement non-finite forms can occur in argument positions:

- (92) [*ħw χoŋksa tał-t-at] mǎnem turas*
 3SG cigarette pull-NFIN.NPST-POSS.3SG 1SG.DAT discomfort
 ‘His smoking annoys me.’

As for verb-agreement adverbial clauses, we claim that they are complements of postpositions. The semantics of an adverbial clause is determined by the semantics of the postposition. Thus, *pǎta* ‘for’ can yield purpose/reason clauses (93), *jel’pijan* ‘in front of, before’ may yield temporal-preceding meaning (94), etc.

- (93) [*maśa-jen pet'a-jen-ən ǎn woχ-m-at] pǎta*
 Masha-POSS.2SG Petya-POSS.2SG-LOC NEG call.for-NFIN.PST-POSS.3SG for
ħw jeməŋ χətət-a ǎn juχt-əs
 3SG holy day-DAT NEG come-PST[3SG]
 ‘As Masha was not invited by Petya, she did not come to the celebration.’

- (94) [*nǎŋ juχət-t-en] jel’pijan ma χoləp-t-an*
 2SG arrive-NFIN.NPST-POSS.2SG before 1SG net-PL-POSS.2SG
want-ti jǎŋχ-t-əm
 see-NPST.NFIN go-NPST-1SG
 ‘Before you arrive I will check the nets.’

Note that *pǎta* ‘for’ and *jel’pijan* ‘in front of, before’ are genuine postpositions, or at least items that can embed a genuine DP:

- (95) *tǎm ləχs-ɛm pǎta mojləps-ɛm*
 this friend-POSS.1SG for gift-POSS.1SG
 ‘This is my gift for my friend.’

- (96) *imət ow jel’pijan oməs-t*
 woman.POSS.3SG door before sit-NPST[3SG]
 ‘His wife is sitting in front of the door.’ [WKhC: “The fairytale about a fisher and a fish”]

There exist adverbial clauses that belong to verb-agreement non-finite constructions and do not use any postpositions. Instead, in such clauses the non-finite verb is marked by locative case, and the temporal construction receives simultaneous interpretation:

- (97) [*muj rəpata tǎj-t-ew-ən*] *χot-et*
 we job have-NFIN.NPST-POSS.1PL-LOC house-POSS.3PL
mir-ew jǎm-a tǎj-t-ələw
 people-POSS.1PL good-DAT have-NPST-1PL>NSG
 ‘When we have a job, we (lit. our people in their houses) live well.’

We have seen that locative is a common way of encoding the temporal meaning in Khanty. In this way, verb-agreement non-finite forms remain syntactically nominal. The external syntax of verb-agreement non-finites shows several nominal traits. First, they can trigger object agreement on the matrix verb, and subject agreement when they are promoted to the corresponding position. Second, they occupy positions that are typical for nominals: the complement of V, the complement of P, and the adjunct marked with the locative case. Finally, they do not require any complementizer, postposition or case marking in order to be a complement of the matrix verb. This is also typical for Kazym Khanty nominals, since nominal direct objects are never marked by an overt accusative.

There are, however, certain nominal properties which are not shared by verb-agreement non-finites. First, they lack nominal number. This follows from the fact that verb-agreement non-finites never trigger plural agreement marking on the matrix verb:

- (98) a. [*aj iki rat-en*] *χərət-m-ał* *pa* [*ašem*
 little man fireplace-POSS.2SG douse-NFIN.PST-3SG ADD father.POSS.1SG
ar ari-m-ał] *ma wə-t-εm*
 song sing-NFIN.PST-POSS.3SG 1SG know-NPST-1SG>SG
- b. *[*aj iki rat-en*] *χərət-m-ał* *pa* [*ašem*
 little man fireplace-POSS.2SG douse-NFIN.PST-3SG ADD father.POSS.1SG
ar ari-m-ał] *ma wə-t-am*
 song sing-NFIN.PST-POSS.3SG 1SG know-NPST-1SG>NSG
 ‘I know that the boy has doused the fire and my father has sung a song.’

Adjectival modification is also impossible. Only adverbs can modify verb-agreement non-finite forms. Adverbs are generally derived by adding a dative marker *-a* to an adjective; in (99), only the adverbial variant is allowed.

- (99) a. [*ma jǎm-a ul-t-εm*] *pǎta aŋkem*
 1SG good-DAT lie-NFIN.NPST-POSS.1SG for mother.POSS.1SG
amp-əl jira wošt-s-əlle
 dog-POSS.3SG away chase-PST-3SG>SG
- b. *[*ma jǎm ul-t-εm*] *pǎta aŋkem*
 1SG good lie-NFIN.NPST-POSS.1SG for mother.POSS.1SG
amp-əl jira wošt-s-əlle
 dog-POSS.3SG away chase-PST-3SG>SG
 ‘My mother chased away the dog in order for me to sleep well.’

We argue that verb-agreement non-finites are D-based CP-level nominalizations with the following structure:

- (100) [Possessor_i DP [CP [Subject_i TP]]]

The CP clause with a non-finite T is embedded by a D head (see such an analysis in Roussou [1991] for Modern Greek and Borsley and Kornfilt [2000] for Turkish). As the T head is deficient (non-finite), it cannot agree with the embedded subject. Therefore, the usual finite subject agreement is ungrammatical in such clauses. Likewise, the T head cannot assign Nominative case to its subject. The subject thus moves to the upper D projection, occupying

its specifier, which is supposed to be the position for the possessor. Having moved there, it gets genitive case (which is phonetically null) and is able to agree with the D head in the same way as usual possessors of nominals do. Then the derivation of the subordinate clause (which is now DP) is completed. The whole construction acts like a normal DP. It can be merged as a P or V complement or become a locative adjunct of the matrix verb. If such a nominalization occupies the object position, it can trigger object agreement or be promoted to subject via passivization, just as nominals can.

The lack of number and the ungrammaticality of adjectives is also predicted by this analysis. The nominalization lacks any nominal layer lower than D, including Num and various adjectival layers, as well as N itself. The phenomena associated with these layers are thus unattested.

8 Discussion

8.1. The Binding Hierarchy and the Implicational Complementation Hierarchy

Clauses selected by a verb show different degrees of integration into the matrix clause. Givón (1980) proposed the Binding Hierarchy for complement clauses:

(101) **Binding Hierarchy (Givón 1980: 335)**

The stronger the influence exerted over the agent of the complement clause by the agent of the main-clause verb, by whatever means, the higher is the main-clause verb on the binding scale.

The binding scale of verbs he proposes is reproduced in Table 2. Givón divides complement-taking verbs into six categories: weak epistemic verbs, verbs of strong attitude, low and high emotive verbs, verbs of strong attempt, and implicative verbs of success. According to him, all the weak epistemic, strong attitude, and low emotive verbs express remote attitude, and so do certain high emotive verbs like *hope* or *fear*. All the other complement-taking verbs can be divided into two categories: (i) ones that express self-inducement, and (ii) ones that denote some other kind of manipulation. On the other hand, Givón establishes a syntactic coding scale for the form of the complement. This scale reflects the degree of syntactic autonomy of the complement. At the same time, certain complement-taking verbs can have more than one form of the complement, which is why the six classes of the matrix verbs and the six forms of complements are not in one-to-one correspondence.

(102) Implicational complementation hierarchy (Wurmbrand and Lohninger, in press)

| | | | | |
|-------------------|----------------|--------------|-------|-------------------|
| most independent | | | | least independent |
| least transparent | Proposition >> | Situation >> | Event | most transparent |
| least integrated | | | | most integrated |

Complement clauses in Kazym Khanty generally fit into both hierarchies proposed. Bare non-finites do not allow for overt subjects and are in that respect less independent, while head-noun-agreement non-finite complements can have an overt subject and are more independent. Bare non-finite complements are not syntactic islands and therefore are transparent for syntactic operations, whereas head-noun-agreement non-finite complements are more restrictive in this respect. It is also worth mentioning that certain matrix verbs, such as *wəti* ‘know’ allow for fully finite complements, as in (103).

(103) *ma wə-t-em waša-jen juχət-t*
 1SG know-NPST-1SG>SG Vasya-POSS.2SG come-NPST[3SG]
 ‘I know that Vasya is coming’

The properties of such clauses pose the question of whether they are actually embedded or just juxtaposed to the matrix clause. As (104) indicates, they cannot be nested into the matrix clause, which is usually interpreted as a sign of a clause not being embedded.

(104) **ma waša-jen juχət-t wə-t-em*
 1SG Vasya-POSS.2SG come-NPST[3SG] know-NPST-1SG>SG
 Intended reading: ‘I know that Vasya is coming.’

At the same time, they trigger object agreement on the verb; see (99) above. The problem of the syntactic status of such complement-like finite clauses lies beyond the scope of this study and requires further investigation. What is crucial for us now is that even if these clauses are in fact sentential complements, they do not violate the hierarchies discussed above because they pertain to the most independent edges of the scales both formally and functionally.

We should also mention that verbs of speech also embed finite clauses although they do not trigger object agreement:¹¹

(105) *ma t̩wəta lup-s-əm kiňška t̩ŋət-t-əm*
 1SG 3SG.DAT tell-PST-1SG book read-NPST-1SG
 ‘I told him that I’m reading a book.’

This fact also conforms to the hierarchies discussed above.

8.2. Subordination Deranking Hierarchy

Cristofaro (2003) proposes a Subordination Deranking Hierarchy, which aligns subordinate contexts according to their structural similarity to independent declarative clauses. She argues that if a language has both balanced (i.e. structurally equivalent to independent declaratives) and deranked (i.e. structurally different) subordinate clauses, then it is the leftmost categories which are deranked and the rightmost which are balanced, and those types are distinguished at a certain split point.

¹¹ Although Koshkareva (2005) mentions that verb-agreement non-finites (‘gerunds’) can occur as complements of verbs of speech, we failed to replicate her results with our speakers.

(106) The Subordination Deranking Hierarchy (Cristofaro 2003: 4)

Phasals, Modals

> Desideratives, Manipulatives, Purpose

> Perception > Before, After, When, A relativization, S relativization

> Reality condition, Reason, O relativization

> Knowledge, Propositional Attitude, Utterance, Indirect object relativization, Oblique relativization

The two general parameters which Cristofaro uses in order to assess different forms are verb finiteness (i.e. the expression of certain morphological categories such as TAM or person agreement) and the form of the subject. Let us consider Khanty non-finite forms according to these parameters. In some sense, all non-finite forms are deranked. A closer look shows that bare non-finites are much more deranked than the other two constructions because the latter can express their subjects overtly and can display some agreement, while the former never do so. This is predicted by the Subordination Deranking Hierarchy since bare non-finites mostly serve as complements of phasals, modals, desideratives, and manipulatives. That said, the verb-agreement vs. head-noun-agreement distribution is more peculiar. We have shown that the constructions involving such verb forms vary in terms of their internal structure. From Cristofaro's point of view those constructions should be ranked equally as both employ the same possessive agreement and distinguish between the same two TAM forms (-*ti/-əm*). One might thus expand Cristofaro's logic in the following way: the constructions which are more structurally similar to the independent declarative clause are expected to stick to the right edge of the hierarchy and vice versa. We have argued that verb-agreement non-finites are D-based CP-nominals, while noun-agreement non-finites are AspPs to TPs. Thus, verb-agreement non-finites exhibit more clausal projections that are typical of independent declarative sentences than noun-agreement ones. Following the logic of the Subordination Deranking Hierarchy, one could expect verb-agreement non-finites to be more balanced and stick to the right edge of the scale, and noun-agreement non-finites to be more deranked and stick to the left. We in fact observe the opposite. Table 3 matches the points at the Subordination Deranking Hierarchy with types of the embedded clauses in Khanty. The first row of Table 3 represents the points on the hierarchy and the second row indicates the types of non-finite constructions available for these points.

Table 3: The distribution of Khanty embedded clauses types across the Subordination Deranking Hierarchy

| | | | | | |
|-----------------|---------------------------------------|------------|---|--|--|
| Phasals, Modals | Desideratives, Manipulatives, Purpose | Perception | Before, After, When, Subject RCs, Adjunct RCs | Condition, Reason, Object RCs | Knowledge, Propositional Attitude, Utterance, Indirect Object RCs, Adjunct RCs |
| Bare | Bare, Verb-Agr | Verb-Agr | Verb-Agr, Noun-Agr | Verb-Agr, Noun-Agr, finite (Condition) | Verb-Agr, Noun-Agr, finite (Knowledge, Utterance) |

There is one more point on which the Khanty data deviate from the Subordination Deranking Hierarchy. We have shown that noun-agreement constructions are actually not a completely homogeneous group. Object relativization allows for passive voice, while it is banned for oblique relative clauses. In order to interpret this distinction in terms of balancing/deranking, it would be reasonable to treat the ability to passivize as a ‘balanced property’, rather than as a ‘deranked’ one, as it is typical for the independent declarative sentences. In Khanty, the relative clauses that are ‘second-right’ can passivize, while the ‘rightmost’ ones cannot – which is the opposite of what would be predicted.

Although the unexpected and exceptional ability of object relative clauses to passivize contradicts the hierarchy proposed by Cristofaro, it can be motivated independently at least to some extent. The fact that only object relative clauses allow for passive voice can be rephrased in the following way: once the object of a relative clause is promoted to the subject position, it is the only possible target of relativization. In other words, in Khanty the passive voice target and the relativization target are always the same participant. Thus, the reason for the passive being ungrammatical in non-object relative clauses lies not in some specific traits of these clauses but in certain functional restrictions of the passive itself.

The only Khanty finite adverbial clauses known to us are conditionals. They are balanced in terms of verb form and subject agreement – and thus more balanced than the non-finite constructions being discussed in this paper. This, however, contradicts the Subordination Deranking Hierarchy since it predicts the conditionals to be more deranked than e.g. indirect object relativization.

We conclude for now that the presence or absence of certain structural projections cannot be interpreted as criteria for a clause to be more balanced or deranked. It is likewise possible that Khanty is just exceptional in this respect. This question requires further research.

In this way, we see that the most notable distinction in Khanty non-finite forms, i.e. the one between bare non-finites and two other constructions, follows the typological pattern of the Subordination Deranking Hierarchy. A closer look reveals a number of minor inconsistencies. This leads us to the following question: does the amount of structure correlate with the degree of deranking/balancing? It seems that in Khanty, this is not always the case.

8 Conclusion

Khanty non-finite forms turn out to constitute a complex system. While handling almost all subordination, they exhibit certain traits specific for certain contexts. We have divided their uses into three groups. Firstly, there are bare non-finites that only occur as complements of phasal and modal predicates. Some of them are TPs, and others are restructured forms projecting to the vP level (although the v head is deficient in such forms). Head-noun-agreement non-finites can be approached as relative clauses. Some of them have semantically empty head nouns as heads and occur as complements, nominalizations, or adverbial clauses. Those clauses allow for adverbs up to AspP (mere relative clauses) and TP (*wer*-clauses and temporal clauses). Finally, verb-agreement non-finites occur as sentential arguments of certain verbs and also express a wide variety of adverbial meanings depending on the postposition they are merged with. These clauses allow for the highest epistemic adverbs, which indicate the presence of the CP layer.

Both verb-agreement and head-noun-agreement non-finites are islands, while bare non-finites are not. We propose that this can be attributed to the properties of nominal shells. DPs are islands in Kazym Khanty. Head-noun-agreement clauses always modify a head noun (sometimes a semantically vacuous one), which provides the nominal structure responsible for

subject licensing, possessive agreement, number, etc. The resulting DP, just like any other DP in Khanty, is an island. As for verb-agreement constructions, we have argued that they are in fact D-based CPs. Thus, island effects are explained in the same way – extraction is impossible since it is impossible for Khanty DPs in general. The case of bare non-finites is different – they show no nominal behaviour, including island effects, and there is thus no reason to postulate a DP-shell for them.

The data from Khanty support the proposed hierarchies for complement clauses: the Binding Hierarchy (Givón 1980) and the Implicational Complement Hierarchy (Wurmbrand and Lohninger, in press). The Subordination Deranking Hierarchy (Cristofaro 2003) generally fits Khanty data as well, although minor inconsistencies arise if we consider the amount of structure to be an appropriate criterion for balancing/deranking. The exact nature of these inconsistencies remains a topic of further research.

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Glossing abbreviations

| | |
|---------|----------------------|
| 1, 2, 3 | 1st, 2nd, 3rd person |
| ADD | additive |
| DAT | dative |
| DIM | diminutive |
| EMPH | emphatic particle |
| EX | existential |
| FOC | focal particle |
| FREQ | frequentative |
| LOC | locative |
| MOM | momentative |
| NEG | negation |
| NFIN | non-finite |
| NPST | non-past |
| NSG | non-singular |
| PASS | passive |
| PL | plural |
| PLAC | pluractional |
| POSS | possessive |
| PROP | propriative |
| PST | past |
| SG | singular |

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