Morphological Evidence for the Dené-Yeniseian Connection, by

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Contents

1. Introduction

The purpose of this paper is to explore the Dené-Yeniseian Hypothesis, focusing on morphological evidence. I will then review possible issues and reservations about this hypothesis, and briefly assess the impact of this hypothesis on our understanding of language families and human migration.

The Dené-Yeniseian Hypothesis proposes a genetic link between the Na-Dene languages of North America and the Yeniseian languages of Siberia. This hypothesis is especially significant within the field of Historical Linguistics, as it challenges better-established linguistic and anthropological theories. I will first examine some background information before going over detailed cross-linguistic morphological comparisons, and implications of the findings.

In order to make his claim, Edward Vajda, the principal proponent of this hypothesis, addresses several common criteria for establishing linguistic genetic relationships, including as related morphological features and cognates (Vajda 2010a). So, the scope of this paper will be mainly limited to a focus on morphology, particularly verb and pronominal morphologies. It's important to understand that many of the *a priori* historical claims on which I base my analyses in this paper make use of comparative-historical linguistic methods to analyze morphological parallels, which are limited by the availability of historical and contemporary data available about these languages. Na-Dené languages, while widely spoken and documented in their contemporary forms, do not have the amount of historical documentation that has been necessary

to convince many in the Linguistics community of broad-spanning proto-language families in the past (Krauss 1997). Yeniseian languages, meanwhile, have earlier records of their historical developments than any Na-Dené language, but documentation of the only contemporary representative of the family spoken today, Ket, is harshly limited by a relatively small language community (<50 native speakers). Today, Ket is considered critically endangered. Although historical documentation of Yeniseian languages stretches back farther into the past, this data too is also extremely sparse and unreliable.

2. Overview of Na-Dené and Yeniseian Language Families

The Na-Dené languages are characterized by the development of prefixes that encode valence changes. This morphological feature involves manipulating the transitivity of verbs through prefixation, affecting how verbs interact with their subjects and objects.

‘Siłbąąs.’ (Navajo, Na-Dené, Vajda 2010)
si-ł-bąąs
CMPV-APPL-go.out
‘He/she/it goes /they go out (habitually).’

The Yeniseian languages are marked by their genetic and typological distinctiveness among the language families of North Asia. This distinctiveness includes unique phonological and morphological characteristics not found in neighboring language families such as Uralic or “Altaic” (Vajda 2013). The verb morphology of Yeniseian languages is highly complex, involving extensive prefixation to encode various grammatical functions. This includes a structured template that organizes multiple morphological components in the verb’s architecture.

The Yeniseian languages' typological and genetic distinctiveness is also seen in their rare tonal features which differs significantly from neighboring North Asian language families. The Yeniseian languages also incorporate a grammatical gender system, unlike many other Siberian languages.

> 'Dütugo.' (Ket, Yeniseian, Vajda 2010)
> d-ü-tug-o-Ø
> 3SG.ANIM.SBJ-PL-see-PST-3PL.INAN.OBJ
> "He saw them."

Accordingly, the classification of Yeniseian languages has posed challenges due to their unique linguistic structures and their relative isolation, making them difficult to fit neatly within traditional language family trees (Vajda 2010, pp. 7-8). Figure 1 (Wikimedia 2021) shows the regions where these languages are today, or were historically spoken, with Na-Dené languages shown in green, Yeniseian in orange, and historical distributions in stripes.

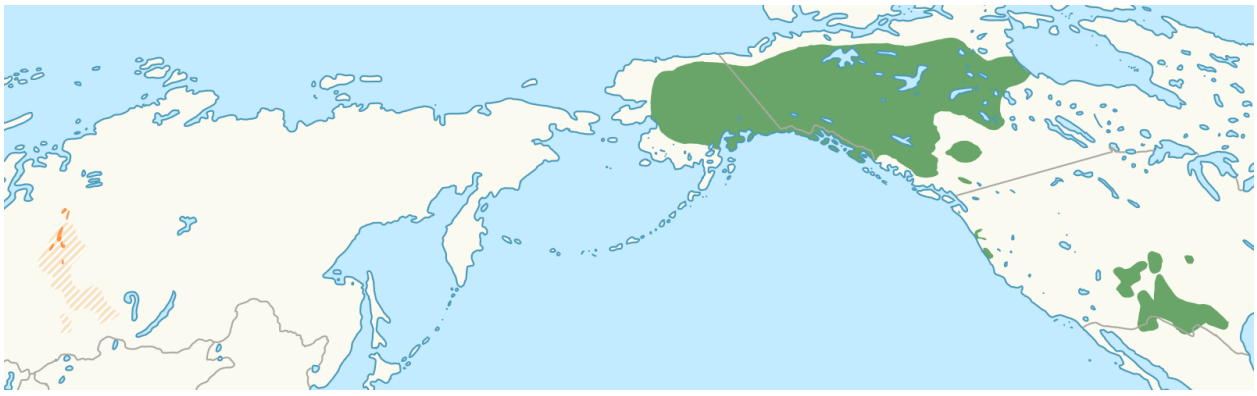

Figure 1: Dené-Yeniseian Distribution

As we can see, the Na-Dené languages themselves are widely distributed across North America, themselves already constituting the culmination of extensive work in historical linguistics to create a solid theory of how these far-reaching languages alone are connected.

3. Core Morphological Evidence

In exploring the core morphological evidence, comparative analyses of the verb morphology within the modern Yeniseian and Na-Dené language families reveal intricate systems of tense, mood, and aspect affixes (Tables 2, 4), which has been considered to support the hypothesis of a genetic link between these families. Both families exhibit complex prefix systems that not only encode grammatical functions but also show detailed interdigitation of morpheme classes, possibly suggesting a deeper relationship beyond typological coincidence.

derivational or thematic prefixes	objects and deictic pronominal prefixes	lexical "qualifier" prefixes, including **n* - round, **d-* long **qʊ* - area	tense / mood / aspect marker **s(ə-), *ɢə-, *nə-*	speech-act-participant subject agreement	prefective-stative subject prefix *ñi-*	classifier *∅, d, ɬ, l*	**verb stem** (root + TAM suffix)
	oldest prefix positions						

Table 1: Proto-Athabaskan (Na-Dené) Verb Position Classes (Vajda 2010)

-10	**-9**	**-8**	**-7**	**-6**	**-5**	**-4**	**-3**	**-2**	**-1**	**0**
"outer objects" (incorporated postpositional construction, indirect obj., reciprocal, etc.)	outer deriv-ational prefixes	iter-ative prefix	distrib-utive plural /da-/ (more than 2)	direct object	3rd subj.	"qualifiers" (deriv-ational prefixes)	"conjugation" prefix relating to tense / mood / aspect (*si-, ni-, ɣi-*)	1st, 2nd subj.	"classifier" (= valence change prefix) *∅, d, ɬ, l*	**verb stem** = set of root + TAM suffix allomorphs
disjunct prefixes				conjunct prefixes			conjugation + subject		classifier + stem	

Table 2: Navajo (Na-Dené) Verb Position Classes (Vajda 2010)

The historical development of these systems also suggests an evolution on both sides of the Bering Strait from more analytic structures, where auxiliary verbs were once prominent in the expression of tense and mood for both language families. This transition, which I'll discuss in more detail later, can be seen in Vajda's comparative analysis that illustrates how these complex systems evolved from simpler, more straightforward verb forms to the multi-layered structures observed today.

a) General Verb Morphology

Cognate evidence within verb forms, such as the consistent use of specific tense/mood/aspect affixes in constructing verb stems, also points to a common linguistic ancestry. These morphological parallels between the Yeniseian and Na-Dené languages extend past just functional similarities to positional correspondences within the verb complexes. These similarities include many specific positions within the verb complexes that retain morphologically cognate elements across both language families, such as qualifier/shape prefixes, TAM markers, subject agreements, (im)perfective subject markers, and classifying elements (see Tables 1, 3).

In addition to positional similarities, the interaction between verb bases and prefixes in both language families shows similar structural formulations. The basic structural formula itself where morpheme classes interact within the same elements of the verb complexes is paralleled in both language families, as we can see in all four position tables. We also observe the usage of similar morpheme shapes in equivalent morphological positions within the verb complexes of both families, such as the relative positions of subject agreement and TAM markers. This

similarity, as well as auxiliary and pegged elements that maintain the structural integrity of complex verb forms in both families, may support the hypothesis of a shared morphological prototype.

	prefix positions						**verb base**			**suffix**
obj. agr. (pro-clitic or separate word)	incorporated body part nouns, spatial and shape prefixes, including **n* - round **ʒ̂* - long **pʰ* - flat	3p inan. **w-* anim. *?*dʲ -* (anim. preceded by gender / num agr.)	tense, mood, aspect combination AUX + suffix		1p, 2p subj. agr.	imperative prefix **ʒ̂-* or perfective-stative prefix **jə-*	verb-deriving prefix **ʒ̂-*, also possibly **l-*	**verb root**	perf.-stative suffix (*-ej, -ŋ*)	anim. -pl. subject agr.
			**s > s, i, a* vs. **qa > qo, o*	**l* vs. **n*						

Table 3: Proto-Yeniseian Verb Position Classes (Vajda 2010)

-8	**-7**	**-6**	**-5**	**-4**	**-3**	**-2**	**-1**	**0**	**+1**
new subj. person agr. clitic	incor-porated noun or adj. root, or new verb base	obj agr.	thematic consonants	con-jugation marker (*q, s, i, a, o*)	inan-imate marker *-b*	past-tense or imperative consonant (*-l* or *-n*)	1p, 2p subject agr.	**verb base**	animate subject plural

Table 4: Ket (Yeniseian) Verb Position Classes (Vajda 2007)

Languages in both of these families are highly agglutinative, showing very complex verbal morphology, while having relatively simpler nominal morphology. Ket, and many Na-Dené languages, are pro-drop, and employ pronominal morphemes within verbal morphology. We'll now discuss and compare the usage and distribution of Dené-Yeniseian pronominal morphology within verb morphology.

b) Pronominal Morphology

Both Yeniseian and Na-Dené languages employ pronominal clitic or prefix systems that are integral to their verb morphology. These systems broadly facilitate various grammatical functions, including subject marking and verb agreement. This commonality in structural design could suggest a shared linguistic innovation or heritage.

The presence of third person and impersonal pronominal markers, common to both language families, have themselves been argued to be cognates of one another. In Yeniseian languages, particularly Ket, the pronominal prefixes demonstrate a complex interaction with verb forms, encapsulating grammatical categories such as number, person, and sometimes gender. The 3rd person singular in Ket is marked by the prefix 'd-', which can vary in form based on the following phonological environment (Vajda 2010). This prefix can be seen in various verb forms indicating actions performed by a third person, e.g., 'dü'doq' (he flies) and 'damas' (thorn), having a role in both subject marking and possessive constructions (Vajda 2012).

Similarly, Na-Dené languages, including those from the Athabaskan branch, use a variety of prefixes for marking person, number, and other grammatical categories on verbs (Krauss 1979). For example, the Tlingit language uses the prefix 'du-' for third person singular, as in phrases like 'duwasakw' (he is singing) (ibid.). This marker interacts with the verb to encode detailed semantic and syntactic information in Tlingit, similar as to in[1] Ket.

Moreover, both language families exhibit the use of impersonal pronominal markers, and while this is a common trait of many languages indigenous to North America, are less common

[1] Realized I wrote “as to in,” three prepositions in a row!

globally, and point to shared syntactic structures. In Na-Dené, the impersonal pronominal prefix '*k*- marks categories like indefinite subject or object, showing functional and possibly historical parallels with the Yeniseian impersonal prefix '*d*-', used in similar grammatical contexts, as argued by (Vajda 2013). We will now discuss this classifier and "action-nominal" morphology.

c) Classifiers and Nominal Morphology

The Na-Dené classifier is an amalgamation of three distinct morpheme classes: the *ɬ*-component, the *d*-component, and the *l*-component. The *ɬ*-component, derived from the perfective/stative prefix, and the *d*-component, originating from a valence-decreasing prefix, have clear functional roles within the classifier system. The *l*-component on the other hand, whose origin is less understood, is typically associated with an increase in valence. However, in many Na-Dené languages, this component has (an)other function(s) entirely, if it is even present at all (Vajda 2010, p. 16). This system enables sophisticated methods of managing transitivity and verb valency, which is a more distinctive feature of the Na-Dené languages. In some languages, these classifiers also appear in lexicalized forms, and/or serve non-grammatical roles that hint at their broader semantic functions (Ibid. p. 18). In short, classifiers can have an integral role in the structural *and* semantic organization of Na-Dené languages.

Although the classifier system as a productive grammatical tool is unique to Na-Dené and not present in Yeniseian, there are indications of cognate morphemes, particularly in the verb-imperative formations in Yeniseian that use the *d*-component. The *d*-component regularly appears as an imperative prefix before vowel-initial verb roots, such as *d*- in Ket, Yugh *dl*-, and Kott *č*- (from the Proto-Yeniseian **d*-).

‘Dol’ (Ket, Yeniseian, Vajda 2013)
d-ol
IMP-see
‘Look’

The argument for the connection between this element and Na-Dené classifiers is that this prefix configuration in Yeniseian is crucial in imperative formations which involve the deletion of all active subject agreement markers, suggesting that its usage might have developed from an earlier function related to valence decrease. However, Na-Dené classifiers do not alter their forms to express imperative versus indicative meanings, unlike the Yeniseian usage where the *d*-prefix distinctly marks the imperative (Vajda 2010a). It is also possible that this Yeniseian imperative *d*- component is related to the third-person singular in Tlingit discussed earlier. The Eyak derivation of this *d*- element would then seem to be the only Na-Dené branch left in which we must make sense of *d*-.

According to Vajda, “The form *-dlaː-* in combinations like Eyak *tsaː-dlaː-təwiːs* ‘stone axe’ and *tsaːdlaːt’aχd* ‘(sheltered) under a rock’ represents a lexicalized remnant of ancient possessive morphology. Compare the homologous concatenation of morphemes in the following Ket and Eyak postpositional constructions:” (Vajda 2013).

'to a rock' (Ket, Yeniseian, Vajda 2013)
tɨs-**d**-i-ŋ-a
rock-**3**-inan-toward

'for a rock' (Eyak, Na-Dené, Vajda 2013)
tsaː**-dlaː**-χa'
rock-**QUALIFIER**-for

The processes involved in deriving action nominals such as infinitives in Yeniseian and gerunds in Na-Dené also demonstrate similarities. In both language families, the formation of action nominals involves specific affixal categories having specific roles: In both Yeniseian and Na-Dené, the derivation of action nominals involves adding thematic prefixes at specific positions in the verb structure, removing intermediate morphological material, including tense-mood and agreement markers, as well as classifier elements (Vajda 2010). These examples of morphological parallels between the Yeniseian and Na-Dené languages, including the use of similar verbal morphological positionings and overall structural organization, and in the use of pronominal prefixes that encode complex grammatical functions within the verb complex, support hypotheses of a genetic link between these language families.

d) Verbal Complexes

Earlier we discussed the idea that earlier, more analytic verb forms in Yeniseian and Na-Dené languages consisted of an auxiliary and a lexical verb root, each hosting its own morphological markers. Historical reconstructions in both families suggest that the auxiliary components in these languages typically carried prefixes that indicated tense, mood, or aspect, suggesting that they functioned as independent morphological units within the verb structure. Conversely, the lexical verb roots carried the main verb stem and sometimes aspect suffixes, reinforcing their role as separate morphological entities.

Modern examples from both language families still reflect this bipartite structure. For instance, in modern Ket, some verb forms are prosodically described as having at least two syllables: one possibly derived from an old auxiliary and the other from the verb base. This structure is paralleled in Na-Dené languages like Navajo, where finite verb forms also comprise

a tense/mood and subject agreement portmanteau combined with a stem consisting of a classifier, root, and tense/mood/aspect suffix (Vajda 2010b). These observations support the hypothesis that the verb morphology of both Yeniseian and Na-Dené languages developed from a more analytically structured ancestor, where auxiliaries and lexical verb roots were distinct and hosted separate sets of morphological markers.

Another morphological link is noun incorporation, which involves the fusion of a noun with a verb, whereby the noun loses its syntactic independence and becomes part of the verb, a feature present in both language families. In Yeniseian languages, such as Ket, noun incorporation is often seen in the formation of complex verbs that incorporate elements related to body parts or natural elements. For instance in Ket, the verb *laul-* 'hot embers' is used in the incorporated verb *kud-to* 'bury in hot ash' (as a method of cooking). Here, the noun *laul-* is incorporated into the verb, forming a single complex verb form. In Na-Dené languages, such as Ahtna (Athabaskan), similar incorporation phenomena can also be observed:

‘Tadeldlo'.’(Ahtna, Na-Dené, Tuttle 2008)
ta #d +l +dlok’
water #QUALIFIER +CL +laugh
‘Water is gurgling.’

Here, the noun is again incorporated directly into the verb, resulting in a complex verb form that integrates the concept of *to laugh* and *water* directly into the verb, and combining the semantic content of both.

All of these morphological similarities, such as shared morphological elements and structural similarities between morphological templates, parallels in pronominal and classifier elements, and a broader verb complex structure derived from an auxiliary verb system, as well as

other similarities we haven't discussed, such as morphological dimunitization and reduplication in both languages (Bengston 2008), suggest that these two families may share a genetic relationship.

4. Critiques and Alternative Perspectives

While the Dené-Yeniseian Hypothesis is supported by intriguing morphological parallels between these language families, it has generated significant interest and debate within the Linguistics community, and several criticisms and alternative morphological perspectives challenge the strength of these arguments. Some critics argue that the morphological similarities highlighted between Na-Dené and Yeniseian languages are not sufficiently exclusive, and may be found in other unrelated language families due to convergent evolution or borrowing (Dunn 2012). There is also a long-standing, general concern that the enthusiasm for proving a genetic link might lead to overinterpretation of the morphological data, seeing connections where none might actually exist:

> "I have attempted throughout to find a middle way between the cavalier optimism of 'lumpers' and the pessimism of orthodox 'splitters' on the matters of deep genetic relationship between the continents" (Fortescue 1998).

The limited availability of comprehensive comparative data, especially from less-studied Yeniseian languages, undoubtedly restricts our ability to make definitive conclusions about these morphological parallels.

In fact, at the other extreme, some scholars propose that the observed morphological similarities could be the result of prolonged contact and borrowing between the ancestors of these language families, rather than necessarily indicating a genetic link (see Campbell 2007), or that both language families belong to an even broader typological pattern or area, which does not necessarily imply a genetic relationship either (see Campbell 2007).

Despite these criticisms, the morphological data supporting the Dené-Yeniseian Hypothesis is not without merit. The detailed analysis of verb and pronominal morphologies, the system of classifiers, and the formation of action nominals provides a good place to start for hypothesizing a genetic link. However, the strength of this evidence must be continually reassessed as new linguistic data becomes available and as further comparative research is conducted.

While the morphological evidence for the Dené-Yeniseian Hypothesis presents a compelling case, we must continue to approach these findings with a critical eye, considering alternative explanations and the limitations of current, sparse data. To attempt to further substantiate the Dené-Yeniseian hypothesis and refine our understanding of the historical linguistics involved, future research could focus on investigating potential links with other Old World language families, such as Sino-Tibetan, to elucidate broader historical dynamics and migrations, and to confirm that our current historical methodological theories are robust to over-grouping and non-contradictory. Currently ongoing examination and interdisciplinary approaches (Rubicz Melvin & Crawford 2002, Potter 2008) will be essential in advancing our understanding of these ancient linguistic bridges.

5. Conclusion

The compelling morphological parallels of these two language families, particularly in verb and pronominal systems, indicate connection that could extend back millennia. The identified morphological homologies have been crucial in supporting the hypothesis of a genetic link between the Dené and Yeniseian languages. The complexities of verb morphologies, including shared systems of prefixes and similar verb complex structures, may suggest a more intertwined prehistoric interaction than previously believed.

If we give this theory any credence, we must then also recognize to some extent the potential of comparative-historical linguistic methodologies to unearth relationships between language families that are geographically and seemingly culturally distant (Swadesh 1987). This approach could “recalibrate” our understanding of language evolution and historical linguistics, possibly leading to distant linguistic ties being acknowledged or explored in greater depth in other domains.

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