On the structure of Proto-Uralic

Uralic (U), with its two main branches Finno-Ugrian (FU) and Samoyed, is one of the most thoroughly investigated language families. Moreover, the Proto-Uralic (PU) that can be reconstructed on the basis of Common Uralic (CU) comparative material is probably the most ancient unambiguously established parent language in Eurasia. While Proto-Finno-Ugrian (PFU) seems to have existed contemporaneously with some of the early forms of Indo-European, Proto-Uralic must lie considerably farther back in time. Therefore, a condensed review of the basic structural characteristics of Proto-Uralic should be of interest even outside the field of Uralistics.[1]

1. PHONOLOGY

11. PARADIGMATIC STRUCTURE

111. CONSONANTS. PU possessed at least 16 distinctive consonant units:

	labial	dental	cacuminal	palatal	velar
plain stops	*p*	*t*			*k*
affricates			*c*		
sibilants		*s*		*ś*	
nasals	*m*	*n*		*ń*	*ŋ*
spirants		*δ*		*δ́*	
laterals		*l*			
vibrants		*r*			
glides	*w*			*j*	

[1] For the impetus for writing this article I am obliged to the Indologist, Dr. Asko Parpola.

Additional units have been proposed on the basis of uncertain etymologies. Indeed, the reconstructed paradigm of 16 phonemes is a minimum comprising only the high and medium frequency consonants of the proto-language, a number of low frequency units remaining technically unreconstructable because of the scarcity of etymological material. Some of the main problems in further elaboration of the reconstruction concern the status of the affricate (**c*), the palatal series (**ś*, **ń*, **δ́*) and the spirants (**δ*, **δ́*).

The affricate **c* probably differed from the dental stop **t* both in release (affrication) and in place of articulation (cacuminal). It is not clear which of these two phonetic features was phonologically more important, and dialectal differences may also have complicated the picture. If, however, it was cacuminality that was the distinctive characteristic, then it would be plausible to postulate other cacuminal phonemes as well. A cacuminal (retroflex) sibilant **š*, at least, was a distinctive unit in PFU, but it cannot be reliably traced using CU etymological material.

Similarly, for the sake of system symmetry, additional phonemes could be proposed in the palatal series. A couple of uncertain etymologies suggest the reconstruction of a palatal lateral **ĺ*, but even other palatal phonemes (stop, affricate) may well have existed in PU, though they must have been of low frequency.

Synchronically the status of the "spirants" **δ* and **δ́* appears to be problematic. These phonemes may have originally been related to either the dental stop or the liquids.

112. VOWELS. The maximal (first syllable) vowel paradigm most probably comprised 8 qualitative units:

	back		front	
	labial	illabial	labial	illabial
high	*u*	*i̯*	*ü*	*i*
middle	*o*			*e*
low	*å*			*ä*

Only minor problems arise in the qualitative reconstruction, first and foremost the status of the low back vowel (labial **å* or

illabial **a*) and of the illabial back vowel (high **i̯*) or middle **e̯* or low **a*). The possibility of dialectal differences cannot be eliminated.

The traditional cause of uncertainty and dispute in reconstructing the PU vowel system has been the question of quantitative correlation. Two different phenomena seem to be related to the problem of quantity. First, in Finnic there is a systematic non-combinatory quantitative correlation that can be traced back (as a quantity phenomenon) to Proto-Finno-Permian. Second, Proto-Samoyed had in addition to ordinary single vowels a system of vowel sequences which consisted of any full vowel of the paradigm followed by an invariable reduced vowel segment. A few reliable etymologies, at least, support the hypothesis that there is indeed a systematic correspondence between these two vowel phenomena: Finno-Permian quantity vs. Samoyed vowel sequences. How this correspondence should be interpreted from the point of view of PU is not clear. It seems, however, that quantity, as such, was not a distinctive feature of the U proto-language; the question is linked with both the vowel and consonant systems.

Another problem related to both quantity and quality is the question of reduced vowels. In Proto-Samoyed, a reduced vowel **ə̑* was a distinctive unit of the vowel paradigm, and it is possible that it should be derived from an independent PU phoneme. The problem is complicated, however, by the fact that some of the occurrences of the Proto-Samoyed reduced vowel seem to be explainable in terms of combinatory phenomena.

12. SYNTAGMATIC STRUCTURE

121. SYLLABLE STRUCTURE. The PU syllable was simple in structure, consisting of a vowel nucleus and optional surrounding consonants: (C)V(C). The glides probably had a special status and could join the vowel nucleus without affecting syllable structure (V = V, V*j*, V*w*). A word root (free morpheme) consisted of either one or two syllables and always

ended in vowel: (C)V, (C)V(C)CV. Derivative elements and grammatical morphemes could be added to the roots by means of suffixation. These suffix elements (bound morphemes) consisted syntagmatically of either a single consonant, −C, or a whole syllable, −CV(C). Suffixes of a more complex structure also occurred: −CCV; these were originally mainly combinations of suffixes.

122. CONSONANT DISTRIBUTION. The occurrence of consonant phonemes in the syllable and within the word was restricted by only a few syntagmatic rules. The velar nasal **ŋ* and, in view of the lack of relevant etymological material possibly also the vibrant **r* and the spirant **δ* never occurred word-initially. The spirants **δ* and **δ́*, as well as the palatal nasal **ń* have not been attested in syllable-final position. At the boundary of two syllables, the most typical consonant combinations were those of obstruent + obstruent and nasal + obstruent, but many other types of combinations also occurred. Among the unrecorded and probably syntagmatically impossible combinations were those of the type obstruent + sonorant. Also, no reliable evidence exists for combinations of two identical segments (geminates).

123. VOWEL DISTRIBUTION. Two important phonotactic restrictions governed the occurrence of vowels in non-first syllables. First, vowel harmony – one of the typological features of many of the present-day U languages – allowed a word to contain either back vowels or front vowels. Second, the actual paradigm of vowels in non-first syllables was limited to three units: the two low vowels **å* and **ä* and a higher vowel. A major problem in reconstruction concerns the paradigmatic identity of the non-first syllable high vowel. According to Finno-Permian evidence this vowel seems to have been identical with **i* of the first syllable (though traditionally written as **e)*, but the eastern groups, the Samoyed languages in particular, suggest the reconstruction of a more neutral phoneme. Indeed, it seems preferable to avoid identifying the unit with any of the qualitative units in the maximal paradigm and to use instead a distinct sign, **ə* (neutral reduced vowel) for the segment in PU. As a result, the rules for vowel occurrence bring

the number of possible vowel combinations in the first two syllables down to 16:

first syllable	second syllable
u, o, å, i̯	*å* ⎫
ü, e, ä, i	*ä* ⎭ *ə*

A consequence of the phonotactic restrictions is that only two distinctive stem types could occur in the word roots: *å/ä* -stems and *ə*-stems. A characteristic of the latter is that the stem final high (reduced) vowel *ə* could alternate with zero before suffixes comprising a whole syllable, provided the restrictions on consonant distribution were not violated. This phenomenon (the so called consonant stem) is actually one of the very few morphophonemic alternations that can be reconstructed in PU.

Another consequence of the restrictions in vowel distribution is that in suffixes containing a low vowel in the lexicon, the vowel segment could be realized either as a back vowel *(*å)* or as a front vowel *(*ä)* depending on the vocalism of the root.

124. ACCENT. Vowel distribution is interrelated with a non-distinctive suprasegmental characteristic of the U languages: the initial stress. The PU stress pattern divided the word in two-syllable sections with initial stress, with the main stress on the first section of the word: (C)V́(C)CV(C)/CV̀(C)CV(C)/. This phenomenon is best preserved on the periphery of the language family (Finnic-Lapp, Samoyed), where it has convergently led to important phonotactic and morphophonemic developments (esp. so called "consonant gradation").

2. MORPHOLOGY

21. PARTS OF SPEECH

The most obvious material characteristic dividing words into functional classes in PU seems to have been the distinction according to the number of syllables in the word root. Basic deictic elements, used in pronominal and auxiliary functions,

formed a class of monosyllables, whereas the bulk of the lexicon, the so called "notation words" were disyllabic. In grammatical behaviour, however, no basic difference existed between the two groups, except that in the paradigms of some pronouns there was suppletion.

Using morphological and syntactical criteria, two parts of speech, the noun and the verb, can be distinguished in PU. It is true that rather abundant evidence suggests that the distinction had been somewhat less strict in Pre-U. In fact, several PU derivative and inflectional suffixes could be affixed to both nominal and verbal stems. Also, there existed a small group of word roots, the so called nomenverba, which could morphologically and syntactically act both as nouns and verbs, in semantically closely related functions. However, in PU most of the lexicon was already unambiguously divided into nouns and verbs, and both parts of speech did have a range of morphological and syntactic characteristics of their own.

As for further classification, morphological criteria are not sufficient to serve as a basis for distinguishing any subclasses (such as "adjectives" and "numerals"). Also, no evidence exists of any separate group of indeclinable words ("adverbs"). For instance, space relationships were expressed by regularly declined spatial nouns, used both independently and in postposition constructions (as nominal postpositions). Undoubtedly, however, there existed in PU some kind of extra-grammatical group of utterances ("interjections" and the like).

22. NOMINAL CATEGORIES

221. DERIVED STEMS. Practically all possible phonological shapes were used in the large stock of PU denominal and deverbal nominal suffixes. The most common and most reliably reconstructable types comprise such as: stop, stop+vowel, stop+stop+vowel (possibly incl. geminate stop+vowel), nasal, nasal+vowel, nasal+stop+vowel, sibilant+vowel, liquid+vowel, glide. However, except for some of the verbal noun suffixes, the exact function of the derivative elements remains

largely obscure. For most of the denominal suffixes only a vague "diminutive meaning" can be reconstructed. Among the few functionally clear cases are: **-mpå/-mpä* for denoting local contrast (later becoming the comparative suffix in Finnic-Lapp and Hungarian), **-mtV* for order (ordinal numbers and pronouns), and the complex caritive suffix **-ktåmå/-ktämä*.

The suffixes for intensification of deixis in pronouns, such as **-m, *-n, *-mV, *-nV,* are a special case, since these may have had an additional function. By adding a syllable to the monosyllabic pronoun stems, it was possible to remove the structural difference between the deictic elements and the rest of the lexicon.

Grammatically the derived stems did not differ in any way from the stems without derivative elements.

222. NUMBER. The absolute form of the noun could probably be used collectively for indefinite number. The use of a suffix for denoting non-singular number may in Pre-U have originally had an additional defining or individualizing function. However, in PU, at least the plural suffixes were obviously often used without regard to this limiting condition.

Plural was expressed by two alternative suffixes: **-t* for the absolute form and **-j* for the conjunctive form. The absolute form was used independently in the sentence, mainly as the subject, while the conjunctive form was used in subordinate position, both adnominally as an attribute (corresponding to the function of plural genitive case) and adverbally as an object (in the function of plural accusative). The conjunctive form was also used before further suffix morphemes (such as the possessive suffixes).

The dual also existed as a separate category in PU, marked by the suffix **-kə(-)*. However, the dual nowadays only exists on the peripheries of the language family (Lapp, Ob-Ugrian, Samoyed), and the PU dual suffix has been materially preserved only in the eastern groups (Ugric, Samoyed). These facts suggest that the use of the dual in PU was dialectally restricted. Furthermore, the individualizing function of the number morpheme was probably more distinct in the dual, and the use of the suffix may have tended to be restricted

to nouns semantically marked +animate or +human.

Number in personal pronouns was expressed irregularly: cf. sg. 1. **mun*, 2. **tun* vs. pl. 1. **me-*, 2. **te-* (probably combined with the ordinary plural suffixes). Whether dual pronouns existed at all, is not known for certain, but some evidence points to the possibility that these may have been formed by adding to the plural stems specific pronominal dual formatives (cf. the possessive suffixes).

223. CASE. PU possessed a system of nominal declension with suffixed case morphemes. The category of case had both (a) grammatical and (b) concrete-relational functions. The case endings were probably primarily attached only to the singular absolute (suffixless) form. In the plural the conjunctive form **-j* was used in grammatical functions as a general plural oblique case. In other functions the plural could probably not be combined with the category of case. It is not possible to reconstruct a dual declension.

There were three grammatical and at least another three concrete-relational cases:

		sg.	pl.
(a)	absolute (nominative)	Ø	*-t*
	genitive	*-n*	*-j*
	accusative	*-m*	
(b)	locative	*-nå/-nä*	
	ablative	*-tə*	
	dative	? *-kə*, *-ŋ*	

The uses of three grammatical case forms generally correspond to the basic syntactic functions of the noun in PU. The absolute case (nominative) was the form of an independent main part of the sentence, usually either the subject or a nominal predicate, whereas adnominal and adverbal subordination was expressed by the genitive and accusative. The genitive, which is best termed genitive-instrumental, seems to have had both an adnominal use as the attribute of a noun and an adverbal use as the instrumental qualifier of a verb. The accusative was the

ordinary case of the object, but, peculiarly, the object of a finite verb in the imperative mood was apparently interpreted as sufficiently independent and had no accusative marker.

The situation is complicated by the fact that, somewhat analogously to the number morphemes, the use of the grammatical case endings was probably linked with an inherent category of definiteness. Thus, the genitive and accusative cases tended to imply definiteness of the noun: in the case of an indefinite noun the absolute form was preferred even in the syntactic functions of genitive (attribute) and accusative (object). However, the category of definiteness never took any strict formal expressions in PU, and probably the use of the case endings was primarily determined by matters of simplicity and clarity.

The concrete-relational cases in PU formed a distinct tripartite system characteristic of many of the present-day U languages: the three case forms express location (static), departure (movement away) and arrival (movement towards) respectively. They were typically adverbal cases, though the possibility of limited adnominal use even in PU cannot be excluded. Semantically they covered both spatial-temporal and habitive functions. Several derived functions, such as modal and causal, had also developed in Pre-U. For the dative case, several parallel markers obviously existed, and the phonological reconstructions remain somewhat uncertain. As a category, however, dative seems to have been the most widely used among all the concrete-relational cases.

Other suffixes in PU could also have had case-like uses: it is difficult to distinguish a case ending from certain types of derivative morphemes. For instance, a caritive in **-ktå/-ktä* (used as a case form in Finnic) existed in PU, but whether it was a case form or a derivational formation remains unclear.

224. POSSESSION. Personal possession was expressed by possessive suffixes, which had developed in Pre-U from the corresponding personal pronouns. The possessive suffixes were affixed after the case endings. In the genitive and accusative case forms of the possessive declension, some morphophonemic alternation had developed already in PU (**-n+m- > *-n-*, **-m+m- > *-m-*). Peculiarly, the genitive allomorph complex

(*-*n*+possessive suffix) was used as a generalization in the non-grammatical case forms, and possibly also in the dual and plural forms of the possessive declension. How the number markers were combined with the possessive suffixes cannot be reliably reconstructed; in the plural the conjunctive form in *-*j* was most probably used.

	absolute	gen. & obl.	accusative
sg. 1.	*-mə*	*-nə*	*-mə*
2.	*-tə*	*-ntə*	*-mtə*
3.	*-så/-sä*	*-nså/-nsä*	*-msså/-msä*
pl. 1.	*-måt/-mät*	*-nåt/-nät*	*-måt/-mät*
2.	*-tåt/-tät*	*-ntåt/-ntät*	*-mtåt/-mtät*
3.	? *-såt/-sät*	*-nsåt/-nsät*	*-msåt/-msät*
du. 1.	? *-måjn/-mäjn*	*-nåjn/-näjn*	*-måjn/-mäjn*
2.	? *-tåjn/-täjn*	*-ntåjn/-ntäjn*	*-mtåjn/-mtäjn*
3.	? *-såjn/-säjn*	*-nsåjn/-nsäjn*	*-msåjn/-msäjn*

The reconstructions must inevitably be based on the principle of regularity. The actual systems of possessive suffixes in the present-day U languages show many deviations from the reconstructed PU system. The reconstruction of the suffixes denoting two owners is especially difficult because of the limited distribution of the dual. In view of the overall system, both plural and dual suffixes seem to consist of a person morpheme (the pronoun root) and a number marker, but while in the plural suffixes the number marker *-*t* is immediately identifiable with the absolute plural morpheme of the ordinary noun declension, the dual possessive suffixes contain an otherwise unattested dual marker (? *-*jn*).

The possessive suffixes functionally replaced the attributively used genitive form of a personal pronoun. The suffixes denoting one owner, especially sg. 3., were probably also used as general defining elements.

225. MORPHEME ORDER

root	derivative suffixes	number / case	possession

23. VERBAL CATEGORIES

231. DERIVED STEMS. The PU suffixes for producing derived verb stems are somewhat fewer in number and semantically better specifiable than the nominal suffixes. It is characteristic that many suffixes are used in related functions as both denominal and deverbal derivators, e.g. **-tå-/-tä-* for (denominal) factitive and (deverbal) causative derivatives, and **-m-* for (denominal) translative and (deverbal) inchoative derivatives. A few suffix combinations can also be dated back as far as PU; some of these can be easily analyzed into components, as **-mtå-/-mtä-* for a group of factitives (< **-m+tå/tä-),* while others remain partly unanalyzable, as **-ptå-/-ptä-, *-ktå-/-ktä-* for groups of causatives.

There was no difference in grammatical behaviour between underived and derived verbal stems. However, the deverbal derivative suffixes were able to change the status of the verb in regard to transitivity (intransitive → transitive, transitive → intransitive), thus affecting both the morphology and syntactical rections of the verb root.

232. NON-FINITE FORMS. Verbal nouns, formed by deverbal nominalizing suffixes, were both numerous and frequently used in PU. In many cases they have served as a basis for the finite conjugation. Semantically, only a general function of denoting action can be reconstructed for most of the verbal noun formatives, though some kind of differentiation certainly must have existed in PU (action, actor, time of action, place of action, aspect of action etc.).

Some of the most reliably reconstructable verbal noun suffixes include:

-j	action, actor, ? completed action
-k	action, ? incomplete action
-må/-mä	action, circumstances of action
-mə	action, completed action
-på/-pä (~ -mpå/-mpä)	action, actor
-śå/-śä	action, actor, ? completed action
-tå/-tä (~ -ntå/-ntä)	action, actor

Verbal nouns could be used both independently (''substantivally'': as subjects, objects, and verbal predicates) and adnominally (''adjectivally'': as attributes). In adverbal usage (object, adverb) the relation of the verbal noun to the predicate was expressed by case endings. As a syntactic headword the verbal noun was able to take both adverbal and adnominal qualifiers.

233. FINITE FORMS.

2331. ACTOR. The category of actor, including the person and number of the actor, was expressed by the personal endings of the finite conjugation. The actor morphemes developed in Pre-U from the corresponding personal pronouns in much the same way as the possessive suffixes developed. However, the process of suffixalization occurred earlier in the verbal conjugation, as indicated by the more ''worn'' phonological shape. An important point of dissimilarity between the systems of possessive suffixes and verbal personal endings is the 2. person singular, where the verbal endings exhibit a duality in the suffix consonant. Most of the present-day U languages point to an original dental stop **-t*, while in the Eastern periphery (Komi, Ob-Ugric, Samoyed) the dental nasal **-n* is met. The nasal variant of the suffix obviously implies the previous existance of a 2. person pronoun with initial nasal, although only uncertain traces of the pronoun stem itself have otherwise been preserved (in Ob-Ugric only).

A characteristic of the verbal actor category is that in the 3. person forms, no material marker is used for denoting person; instead only the number of the actor is expressed, the number morphemes being the same as those in the nominal declension.

verbal personal endings		cf. the personal pronouns
sg. 1.	*-m*	**mun*
2.	*-n* ~ *-t*	**tun*
3.	*-Ø*	
du. 1.	? *-måjn/-mäjn*	
2.	? *-tåjn/-täjn*	
3.	*-kə(-)*	
pl. 1.	*-måt/-mät*	**me-*
2.	*-tåt/-tät*	**te-*
3.	*-t*	

2332. OBJECT. Convincing evidence suggests that in PU there existed a separate objective conjugation, referring to the definite object of a transitive verb. The objective conjugation was formed by substituting the possessive suffixes of the nominal declension for the ordinary verbal personal endings (actor).

The degree of elaboration of the objective conjugation in PU is not known in detail. Possibly the category originated in Pre-U in the 3. person singular, where the objective personal form clearly contrasted with the bare suffixless stem of the absolute conjugation. In PU the objective conjugation was most probably found in all persons, though homomorphy with the absolute conjugation was inevitable in some persons (du.pl. 1.2.). However, the distribution of the objective conjugation may have been dialectally restricted. Today, this category is present mainly in the eastern branches of U (Ugric, Samoyed, but also Mordvin), where it has been further elaborated to include reference to the number and (more rarely) to the person of the object as well.

2333. TENSE. Morphologically the category of tense can be divided into two types: the conjugation without special tense markers, and the conjugation with one of the tense morphemes.

The ordinary conjugation without a tense morpheme was probably originally neutral with regard to time, forming an aorist that could refer to present, future, or even past actions depending upon the semantics of the verb (a similar system exists today in Samoyed). The aorist was formed morphologically simply by attaching the personal endings (of either the absolute or the objective conjugation) to the verbal stem. However, some of the present-day idioms (mainly Samoyed) suggest that an early development was a secondary periphrastic aorist which was formed by combining the verbal stem with a conjugated auxiliary: verb + auxiliary (phonologically V-) + personal endings.

The non-aorist tense forms were all based on verbal nouns: any verbal noun could be used as a predicate and conjugated for person. In view of the abundance of verbal noun formatives, the tense category was originally richly variegated and semantically intervowen with verbal aspect. The crystallization of some of the most frequently used verbal nouns in strictly limited temporal functions began in PU, but was completed only in the various branches of U. The only verbal noun suffix that seems to have possessed a definite temporal function in PU is *-*śå*/-*śä* for past tense. As for other verbal noun formatives, their temporal uses in PU can only be approximated on the basis of their later functional development.

	PU	later functions
-*j*		past
-*mə*		past (perfect)
-*på*/-*pä*		present
-*śå*/-*śä*	past	

In most of the present-day U languages (esp. FU) the markerless aorist has tended to recede. New tense conjugation systems have been built through complex mixing of various verbal noun formatives and rudiments of the aorist.

2334. MOOD. In addition to the absolute (indicative) paradigm, an imperative mood was found in PU. Mood and tense were alternative categories; the imperative had no tense conjugation.

The formation of the imperative seems to have been based, in a similar fashion to tense, on verbal nouns. The most frequently used imperative form, 2. person singular, had morphologically a special status (the unmarked form) and was materially identical with a verbal noun in **-k*, with no personal suffix attached. The rest of the imperative paradigm shows an element **-kå-/-kä-* (most probably also a verbal noun formative and originally related to the verbal noun in **-k)*, to which personal endings were suffixed. The extent to which the imperative category was in use in other than the 2. person remains unknown. If 3. person forms existed in PU they must have contained material person indicators, identical with the 3. person possessive suffixes.

234. NEGATION. One of the characteristics of the U language family is the expression of negation by means of a negative auxiliary. In the ordinary (indicative) conjugation the negative auxiliary stem can be reconstructed as PU **e-*, while in the imperative some kind of enlarged or supplementary stem was probably used (? **elV-*).

The finite negative construction was formed by the negative auxiliary conjugated for mood, tense and person, followed by the main verb in the constant verbal noun form in **-k* (identical with the imperative 2. person singular). In non-finite constructions both the negative auxiliary and the main verb were probably in concordant verbal noun form. For the verbal noun in **-må/-mä* a special type of negation additionally existed in PU: a caritive derivative in **-måktåmå/-mäktämä*.

235. MORPHEME ORDER (finite predicate).

root	derivative suffixes	mood / tense	actor & object

neg. auxiliary	mood / tense	actor & object	main verb	*-k*

24. INTERACTION OF NOMINAL AND VERBAL CATEGORIES

241. NOMINAL CONJUGATION. When no express modal or temporal element was present in the sentence, a noun was able to function as a nominal predicate, without the use of a copula. Nominal sentences of this general type are common in most of the U languages. However, a few present-day idioms (Mordvin, Samoyed) suggest that it was also possible in PU to express the subject person of a nominal predicate morphologically, by attaching the verbal actor suffixes directly to the noun stem. The nominal conjugation thus obtained was obviously functionally comparable to the absolute (indicative aorist) finite conjugation of verbs. If a definite modal or temporal suffix morpheme had to be used, or if a non-finite form was needed, and probably also if negation was present, an ordinary syntactic copula-construction was inevitable.

242. VERBAL DECLENSION. The regular finite conjugation of verbs contained some obvious elements from the nominal declension. Thus, the dual and plural suffixes used as part of the actor paradigm, were identical with, and probably generalized from the corresponding nominal number markers. The possessive suffixes of the noun also had a conjugational function in forming the objective personal paradigm. However, even the most nominal of the nominal categories, case, had some limited use in the verbal inflexion. As is evident from two modern FU languages (Lapp, Mari), the nominal genitive singular suffix **-n* in its instructive function could be affixed to verbal stems, forming a modal gerund. In view of its sparse distribution, however, the verbal genitive may have been a dialectally limited phenomenon in PU.

3. SYNTAX

31. SENTENCE TYPES

The complete minimal sentence in PU consisted of a nominal subject and an either verbal or nominal predicate. The subject

could also be expressed morphologically by the personal conjugation of the finite predicate. Generally, the finite predicate agreed with the subject in number and person, though occasional non-agreement in number may have been present. No other type of grammatical concordance was known. The relationships of the subordinated parts of the sentence with regard to the subject and the predicate were expressed both by word order and by morphological markers (case endings, possessive suffixes). Syntactic qualifiers included the adnominal attribute (absolute and genitive cases), as well as the adverbal object (absolute, accusative) and adverb (genitive, local cases).

For any nominal constituent of the finite sentence a nominalized embedded sentence could be substituted. The main characteristic of an embedded sentence was that the predicate was expressed by a verbal noun, without the ordinary personal conjugation. The subject person could, however, be incorporated in the verbal noun predicate by using the possessive suffixes. The relation of the embedded sentence to the main sentence was defined by case declension of the verbal noun predicate. As no conjunctive words (conjunctions, relative pronouns) were present in PU, the use of embedded verbal noun constructions was the sole means of expressing subordination (relative, objective, temporal, causal etc.) of a sentence.

32. WORD ORDER

In an ordinary statement, at least, the subject regularly preceded the predicate. A qualifier, ranging from a single word to a complete embedded verbal noun construction also preceded the word qualified (rectum ante regens). In emphatic use, however, exceptions may have arisen, with a tendency to place the topic first and the comment last in the sentence.

(attribute)	(subject)	(attribute)	(object) (adverb)	predicate

4. LEXICON

41. SIZE

In view of the huge time span that separates PU from the present, it is not surprising that the reconstructable CU lexicon is very limited. Estimations usually range from 200 to 500, but with reasonably strict criteria the number of acceptable CU etymologies can be dropped to about 140. Of these, some 10 items belong to the structurally peculiar group of monosyllabic deictic words, while the rest comprises about 100 nominal and 30 verbal roots, as well as less than 10 ambivalent roots of the nomenverbum type. Semantically, it is, of course, the very basic vocabulary of PU that is involved. For instance, names for parts of the body and functions of the body alone number about 30 items, while 10 etymologies belong to kinship terminology. Less than 30 etymologies reflect concepts of elementary technology, including words for fire and charcoal, bow and arrow, knife, needle, shaft, drill, glue, ski, cooking, twining, and rowing. No far-reaching cultural conclusions can of course be based on the limited material available. Indeed, the reconstructable word roots represent but an extremely small and basic part of the actual lexicon of the U proto-language.

A PU etymology, by definition, has to be attested both in FU and in Samoyed. However, there is no doubt that a considerable portion of PU lexicon was preserved only in one of the branches, or in a still lower-level branch. Of the two immediate main branches of U, the relatively older FU proto-language probably preserved a larger percentage of PU vocabulary than the comparatively recent Proto-Samoyed.

42. ENRICHMENT

Derivation was the main means of enrichment of vocabulary, and was widely used in PU. Some kind of semantically differentiated and accentuationally delimited compositum-like

word sequences were probably also present. Onomatopoietic and descriptive innovations were obviously as common as (but not more common than) those in the present-day U languages.

43. SEMANTIC PECULIARITIES

Instead of a verb 'to have', the characteristic *habeo*-construction was used with the owner in the locative (possibly also genitive) and the thing owned in the nominative (the grammatical subject), the verb 'to be' acting as the predicate.

The numerals both in FU and in Samoyed suggest an original septimal system. However, few correspondences in the material shape of the numeral morphemes can be established ('two', 'five', possibly 'seven').

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AIHUH = Acta Instituti Hungarici Universitatis Holmiensis. Stockholm.
FUF = Finnisch-ugrische Forschungen. Helsinki.
JSFOu = Journal de la Société Finno-ougrienne. Helsinki.
KS = Keel ja struktuur. Tartu.
MSFOu = Mémoires de la Société Finno-ougrienne. Helsinki.
OFUJa = Osnovy finnougorskogo jazykoznanija. I–III. Moskva.
UAJb = Ural-Altaische Jahrbücher. Wiesbaden.
Vir. = Virittäjä. Helsinki.