There is a set of morphemes in Alsea, an extinct Indian language of the Oregon coast, that are encliticized on the first word of the clause, similar to the second-position clitics in many languages. However, in some sentences these morphemes appear to be infixed rather than cliticized. True infixes are a rare phenomenon, and infixation of a morpheme that normally functions as a clitic is doubly suspect. There is significant evidence for an interpretation of apparent endoclitics (infixed clitics) in Alsea as sequences of clitics, if not synchronically, at least historically. The infixation appears to be a feature of the morpheme that is split and not of the infix. There is a limited set of single morphemes that due to the circumstances of their historical development, are sometimes split into two discontinuous parts. The second-position clitics are only incidentally involved in creating the discontinuity. (MSE)
SECOND POSITION CLITICS IN ALSEA.

Eugene Buckley
University of California Berkeley

Paper presented at the annual meeting of the LSA/AAAL/ADS
27-30 December 1987, San Francisco, CA
SECOND-POSITION CLITICS IN ALSEA*

Eugene Buckley
University of California, Berkeley

There is a set of morphemes in Alsea (an extinct language of the Oregon coast) which are encliticized on the first word of the clause: in this respect they are no different from the second-position clitics found in many languages. In some sentences, however, these morphemes appear to be infixed rather than cliticized. True infixes are a fairly rare phenomenon, however, and the infixation of a morpheme that normally functions as a clitic is doubly suspect. There is in fact significant evidence for an interpretation of apparent endoclitics (i.e. infixed clitics) in Alsea as sequences of clitics, if not synchronically then at least historically. I will begin by establishing that these morphemes are indeed elides, then describe their apparent infixation, and finally discuss the most appropriate analysis of this behavior.¹

The morphemes

In Alsea, all subject pronouns, three directionals (uk' 'up, away', auk 'inside', u 'here'), and Ita 'but' are attached to the first word in the clause.² Sentences (1) through (6) illustrate the use of these morphemes.³

(1) tém=Ita múhu kēa qēn-t-ax
and=but at last indeed die-STAT-CMPL
'But then he was finally dead.' (64.38)

(2) hiṣe=xan pxēl'sus-ātx-u-x
just=EduS ask-PROG-2sgO-CMPL
'We've simply been asking you a question.' (j72.31)

(3) tqiált-x=xan
want-CMPL=1sgS
'I want it.' (34.9)

¹ I would like to thank Colette Craig for her help on an early version of this paper, as well as the following people for their comments on an later draft: Natasha Beery, Orin Gensler, Leanne Hinton, Laura Michaelis, and Lawrence Morgan. This paper was presented at the LSA conference in San Francisco on December 29, 1987.

² All examples cited here are labeled with the page and line number from Frachtenberg (1920), except for those preceded by a 'l' which come from Frachtenberg (1917). A number of other Alsea materials exist in manuscript form, but only Frachtenberg's published works offer connected text.

³ These 'second-position clitics' are found in languages all over the world, and were first described for Indo-European by Wackernagel (1892). The precise definition of 'second position' varies among languages, but for Alsea this position generally occurs after the first word of the clause.

³ See the end of the paper for a description of abbreviations used here. The Alsea sentences are given in an adaptation of Frachtenberg's original nonphonemic transcription.
Examples of what appears to be endoclisis — the infixation of a clitic — will be considered later.

**Clitics vs. affixes**

The notion of a clitic, like any other basic syntactic category, cannot be deduced from other categories; it must instead be defined. Clitics as a class are intermediate between affixes and independent words, sharing characteristics of both; to show that a given morpheme is a clitic thus involves demonstrating the shared characteristics. Zwicky and Pullum (1983) list a number of properties which distinguish clitics from affixes; although they were intended for application to English data, these properties are of a sufficiently general nature to be used cross-linguistically. I have condensed them into three properties: selectivity, predictability, and rule ordering.

**SELECTIVITY** refers to restrictions on the types of words to which a morpheme may attach. Affixes generally are restricted to a narrowly defined group of roots; for example, the English plural morpheme attaches only to nouns. Clitics, on the other hand, often have low selectivity and can attach to hosts from a wide variety of syntactic classes. This is the case with the Alsea morphemes in examples (1) through (6), which are found after the first word of the clause, whether that first word is a connective (1), adverb (2), verb (3), noun (4), or tense marker (5). Note that multiple clitics are possible, as in (6). By this criterion — which I consider to be the most important for Alsea — these morphemes are clearly elides.

**PREDICTABILITY,** or regularity, is more typical of clitics than of affixes. Affixes often exhibit idiosyncrasies in semantics and phonology, and are also more likely to have arbitrary gaps in their distribution. For example, the English suffix `-ed' is not used with many irregular verbs: in ‘give’ the past tense has no suffix at all ('gave'), and the past participle has an irregular suffix ('given'). The lack of such gaps and idiosyncrasies in the Alsea data — the morphemes in question always have the same form — serves as further support of their status as clitics.4

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4 Frachtenberg (1918:126) points out a minor exception in the order, but not the form, of the pronominal clitics. Very briefly, the order of the clitics marking subject and nonsingular object (identical to the subject pronoun) is reversed for 1sgS/3duO to avoid homophony with 1duS/3duO.
The final criterion, RULE ORDERING, is theory-dependent. According to Zwicky and Pullum, clitics are attached to their hosts after syntactic operations have applied; therefore clitic groups cannot be affected by syntactic rules, and affixes cannot be attached to a word after it has received a clitic. While these claims appear to be valid in their analysis of English, they are of limited use with Alsea since no syntactic rules have as yet been elaborated. Nevertheless, the Alsea data seem to conform to these predictions. For example, multiple clitics are possible, as shown in (6), but there are no cases of affixes following a clitic. It should be noted that Klavans (1985) considers affixed clitics possible, as long as the affixation takes place before the cliticization. This subject will be discussed more fully below with regard to endoclisis.

### Clitics vs. words

Having shown that these Alsea morphemes are more like clitics than affixes, it is now necessary to look at the other side of the issue, where clitics resemble words. Zwicky (1985) considers this question and gives an extensive list of criteria to distinguish clitics from words, which he freely admits are not entirely consistent cross-linguistically. I will summarize the criteria in two categories: phonology and syntax.

Clitics, unlike most independent words, form a PHONOLOGICAL unit with the host, with the result that they can undergo at least some word-internal phonological processes and are usually accentually dependent. This is a difficult criterion to apply to Alsea, since the language is no longer spoken and there may be errors in the existing transcriptions. The pronouns consist in many cases of consonants only, and epenthetic vowels are often inserted between the host word and the pronoun. For instance, the first-person singular occurs as -n after a vowel in (4), and as -an after a consonant in (3). A similar vowel is present in -ist in (5). Such insertion of vowels is not caused by adjacent consonants across word boundaries, but is found with affixes (cf. the completive -ex in (1) and -x in (2)), so this epenthesis suggests that these morphemes are not independent words.

The pronouns and directionals are also generally unstressed, as in examples (1) through (6). Sometimes the epenthetic vowel is stressed, though; this happens most often when it follows the connective tem, as in (8), where epenthetic [i] is stressed:

\[
\begin{align*}
\text{(7)} & \quad \text{tem} = i \lambda x \ m \ u h u \ m a - \text{tası-sur-x} a \\
& \quad \text{and=3pS now DUR-win-DUR-CMPL} \\
& \quad \text{‘Then they kept winning points.’ (24.8)}
\end{align*}
\]

5 The inserted vowel is always short but is usually colored by the adjacent consonants. For example, the vowel before the first-person singular -n is realized as [a] when it follows [x] or [y], and as [i] when it follows [m] or [h]. Compare sentences (11b) and (16). A high back vowel or diphthong preceding the consonant can cause the epenthetic vowel to be [u], as in (19). These nonphonemic distinctions from Frachtenberg's transcriptions are retained here because there is not enough information yet to thoroughly phonemicize the texts.
Most often tem is stressed, as in (7). Clitics in Alsea — or at least the epenthetic vowels they give rise to — seem to be able to take the stress occasionally, but this stress shift is not consistent. Given Frachtenberg's use of a very narrow phonetic transcription, the stress on such clitics may be very light and probably depends more on the stress pattern of the entire sentence than on the word itself — notice that the clitic groups in (7) and (8) each mimic the stress pattern of the immediately following word. Also, stressed clitics are not unknown; Wanner (1978) describes them in Modern Greek, for example.

In the area of SYNTAX, Zwicky says that a simple rule should be adequate to describe a clitic's distribution; this is true of Alsea, since the morphemes always occur after the first word of the clause. He notes that such second-position clitics are, as mentioned earlier, found in many languages, so it should not be surprising to find such clitics in Alsea as well. Additional syntactic characteristics of clitics are that they are bound to their host (they do not occur in isolation), are strictly ordered with respect to the host, and are not independently subject to syntactic rules which take words as input. All of these statements apply to the Alsea morphemes.

Besides these phonological and syntactic criteria, Zwicky also suggests a METACONSIDERATION: when in doubt, call something a word rather than an affix, and an affix rather than a clitic. This suggestion stems from an assumption that independent words are the least-marked morphemes, and clitics the most marked of the three types. Judging from the relative frequency of each type of morpheme cross-linguistically, this seems to be a reasonable ordering. Given the criteria outlined in the previous few pages, though, it should be clear that the Alsea morphemes are neither words nor affixes, but rather true clitics.6

Infixation

Before continuing with the discussion of Alsea clitics, I will describe what I consider to be 'prototypical' infixation, so that I can contrast it with what is found in Alsea. Tagalog will serve as an illustration.

In prototypical infixation, a given affix breaks a monomorphemic root into two pieces. For example, the Tagalog infixes [-um-] 'actor focus' and [-in-] 'object focus' (Schachter and Otanes 1972) occur before the first vowel of the stem they modify, thereby separating the initial consonant from the rest of the stem:

6 I am settling here for the somewhat general term 'clitic', though it is possible to distinguish various types. The Alsea pronominal clitics are 'special clitics' in the terminology of Zwicky (1977) and Zwicky and Pullum (1983), since their syntax differs from that of the corresponding independent words (i.e. the emphatic pronouns); since no full forms exist for the directional or ita, these are 'bound words' in Zwicky (1977) but 'special clitics' as well in Zwicky and Pullum (1983), where the two categories are merged.
The stem-internal position of the infix is determined not by the stem, but rather by the infix itself: there must be a lexical feature of the particular affix which states that it occurs inside the stem. This means that a new word in the language is also susceptible to being broken by an infix, as the verb [sorpresa] borrowed from Spanish demonstrates:

(10) S-in-orpresa si Maria ni Juan.
    'Maria was surprised by Juan.' (Sweetser 1980:17)

The essential point is that prototypical infixation is a feature of the affix, not the stem to which it is attached. This fact will be contrasted with the situation in Alsea below.

Endoclisis

There is a limited set of words in Alsea in which the clitics appear to be infixed, breaking the apparently monomorphemic word into two parts. Examples are given here in pairs, showing the words first with and then without the putative endoclitics:

(11) negative ʰχiˈya? (also the word for ‘no’)
    a. ʰχiˈya? qá-uˈkeai tqaíáld-ɑx
       NEG ERG-someone want-CMPL
       'No one wanted to.' (j72.20)
    b. ʰχ/án/iˈya? tqaíált-ɑx
       NEG-1sgS-* like-CMPL
        'I don’t like it.' (48.18)

(12) habitual ƛəts
    a. ƛəts tʃurθun-ɑ-ɔn-x kus tšuˈwíx
       HAB make-INCH-PAS-CMPL DET rope
       'They used to make rope.' (166.4)
    b. ʰk/ukʷ/təs təˈl? təˈnərəst pl-úˈtʃəts
       HAB-away-* only always stand-INCH behind
       'She would always stand behind (them).’ (24.17)

(13) resultative ƛís
    a. ƛís kɪm tkəθš-ʃ-m
       RES there burn-INCH-INTR
       '...a fire would start there.' (212.18)
b. \( /\acute{s}/\acute{\jmath}\acute{l}/s \quad \text{p}u\text{p}\text{p}\text{a}n\text{h}au-\text{t}x-\acute{a}i-m \)
   RES-1plS-* play.shinny-PROG-INCH-INTR
   "...then we'll play shinny." (24.3)

(14) irrealis complementizer sis

a. \( s\text{is} \quad t\text{qai\acute{a}d-\text{\textacute{\jmath}}}} \quad \text{COMP} \quad \text{want-TR} \)
   "If he wanted to..." (154.1)

b. \( s\text{i}/\text{\textacute{\jmath}}/s \quad t\text{qai\acute{a}d-\text{\textacute{\jmath}}} \quad \text{COMP}-2p1S-* \quad \text{want-TR} \)
   "If you want to..." (24.3)

(15) concessive la\text{\textacute{s}}

a. \( \text{la\text{\textacute{s}}} \quad p\acute{a}k\text{st-it} \quad s=\text{le}h\text{w}\text{f} \quad \text{CON} \quad \text{hard-ADJ} \quad \text{DET=ground} \)
   "Although the ground is hard..." (158.31)

b. \( \text{l\acute{a}/n/s} \quad n\acute{f}\text{sk-i\text{\textacute{s}}} \quad \text{a}y-\acute{a}i-m \quad \text{CON-1sgS-*} \quad \text{far-ALL} \quad \text{go-INCH-INTR} \)
   "No matter how far I go..." (176.27)

All of these words are found frequently as undivided units, as in the examples marked (a), which might lead to the conclusion that they are single morphemes. This would, however, require that the (b) sentences of each pair be analyzed as cases of endoclisis.

Klavans (1985), building on work in Klavans (1979) and arguing against Zwicky (1977), claims that the infixation of a clitic is impossible. Her main example involves a sequence of the form X-Y-Z where X is a verb, Y is a clitic, and Z is a suffix. Instead of saying that the cliticized form X-Y is inflected with Z (which would violate the rule-ordering criterion given above), she says that clitics can be inflected just like other syntactic classes. The suffix Z is added to the clitic Y to form the group Y-Z, which is then cliticized on the host X.

In Alsea the situation is somewhat different, since the would-be element Z is in none of the examples recognizable as a suffix. In fact, the selectivity criterion argues strongly against an analysis of Z as an affix, since it can attach to clitics of three quite different types: pronouns, directionals, and la. These final elements, if not part of a single root X-Z, must be clitics as well. Upon closer analysis there is actually a fair amount of evidence for relating the different halves of each of these 'words' to other morphemes, suggesting that they might have some independent existence. First, the evidence for analyzing the words into component morphemes.

**Dissectability**

One of the clearest examples of words that can be 'dissected' involves the habitual \( k\acute{s}\text{\textacute{\jmath}}/s \) (12) and resultative \( k\text{is} \) (13). The first element of each, corresponding to X, is phonetically identical to the future \( k\text{-} \) (which is itself
phonologically a proclitic, but syntactically treated as a word). This ʮ- occurs in
the same initial position and is thus also followed by the second-position clitics:

(16) ʮ=ین ١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠١٠
(21) tem ɪ̞-asx-ái- xa
and refuse-REFL-INCH-CMPL
'He refused to do it.'

Note that in (20) the initial vowel [i] reduces, corresponding exactly to the reduced vowel in ɪ̞-iyəʔ. The similarity in meaning and form is very strong evidence that, at least etymologically, the negative ɪ̞-iyəʔ consists of ɪ̞- plus some other element.

The Alsea data differ significantly from the examples given by Klavans because the final elements of the words are in all cases of uncəzar meaning and apparently quite unproductive. For example, k- may have functioned as an irrealis complementizer when it was originally combined with -s and -ts, but in k-is and k-as its reflex serves only as half of the resultative and habitual morphemes. Even if, say, the -s of k-is were defined as 'resultative', it would then be necessary to call the -s in sis and is-s a different clitic of uncertain meaning, which defeats the purpose. In fact, the position of the second-position clitics is the only clear syntactic evidence that each of these words may once have consisted of two distinct morphemes.9 A synchronic interpretation of these words as single but sometimes discontinuous morphemes — where neither part can be said to carry any particular portion of the total meaning — seems 'best. The clitics themselves are not prototypical infixes as exemplified by Tagalog, since they behave as enclitics except in special circumstances: it is not the case that the clitics are inherently infixal, but rather that they show up as infixes when added to a few particular host words.

Historical Explanation

The present state of affairs in Alsea can be explained by making reference to the process of grammaticalization — the historical development of a free morpheme into something which is more bound and obligatory, accompanied by semantic and phonological attrition (see Lehmann (1985) for a more complete explanation). Taking the example of k-, k-is, and k-as, we can attempt to retrace the steps that led these morphemes to their present form.

Suppose that at some point in the history of Alsea there was a clause-initial particle, phonetically something like k- (though at this stage it may have had a phonemic vowel). Perhaps it marked the irrealis mood, perhaps something else. Subject agreement was shown by an enclitic on this particle, as it is today. Certain variations in meaning were possible by adding other particles to the sentence — say sa to indicate a result and tas to indicate habitual action. Like other modal elements, they gravitated to the beginning of the clause. With time they began to lose their stress and cliticized on the word to their left — sometimes a subject pronoun, but often just the particle k- since there was a zero subject in

9 The abbreviated forms noted in the previous two footnotes might also be considered evidence of historical (or even synchronic) separateness. On the other hand, the realis complementizer m is, which unlike the irrealis sis takes the normal enclitic pronouns and acts like a single morpheme, occasionally appears to be shortened to s as well. Also, the connective tem and determiner kus are sometimes found together as mukus, though I would hesitate to say that tem consists of two parts — especially in the synchronic grammar.
the third-person singular. Finally they lost their independent identity and became simply a part of a single morpheme which included the original k- particle — except that sometimes the morpheme was split in half by a subject pronoun which had been there all along. The following diagram illustrates the progression, using the first-person singular -n as an example:

<table>
<thead>
<tr>
<th></th>
<th>irrealis</th>
<th>resultative</th>
<th>habitual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>k+n → k=in</td>
<td>k+n+ás → k=ín ás</td>
<td>k+n+táš → k=ín táš</td>
</tr>
<tr>
<td>2</td>
<td>k+n → k=in</td>
<td>k+n+as → k=ín=ás</td>
<td>k+n+tas → k=ín=tas</td>
</tr>
<tr>
<td>3</td>
<td>k+n → k=in</td>
<td>k+n+s → k=ín=s</td>
<td>k+n+ts → k=ín=ts</td>
</tr>
<tr>
<td>4</td>
<td>k+n → k=in</td>
<td>kis+n → k/in/s</td>
<td>k@ts+n → k/in/ts</td>
</tr>
</tbody>
</table>

Each numbered row represents a historical stage of the language; the arrows refer to a synchronic correspondence between the underlying morphemes and their phonetic realization. At stage 1 there is only the particle k- followed by the subject pronoun. Stage 2 includes the particles as independent words which modify the meaning of k-. By stage 3 these independent particles have lost their stress and become cliticized on the first word in the clause. This loss of stress leads to the loss of the vowel of the last clitic at stage 4. Finally, at stage 5 the second elements of the resultative and habitual have ceased to be meaningful by themselves: they each combine with k- to express the resultative or habitual meaning. When a subject pronoun (or directional) is also present, it retains its original position immediately after k-, separating the two parts of the resultative and habitual morphemes in the process.

This scenario is intended to suggest the way in which the 'endoclisis' may have arisen. It is difficult to find independent evidence for this diachronic development, since the relationship of Alsea to other languages has yet to be clearly proven. Comparison with forms in a language demonstrably related to Alsea could yield more precise hypotheses.

Conclusion

In one sense, what we observe in Alsea is endoclisis: a clitic that breaks apart another morpheme. Here, however, the infixation is a feature of the morpheme that is split, and not of the infix. In reality we have a limited set of single morphemes which, due to the circumstances of their historical development, are sometimes split into two discontinuous parts. The second-position clitics are only incidentally involved in creating the discontinuity.
APPENDIX

Alsea Subject Clitics

<table>
<thead>
<tr>
<th></th>
<th>singular</th>
<th>dual</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st person</td>
<td>=n</td>
<td>=xan (excl)</td>
<td>=t</td>
</tr>
<tr>
<td>2nd person</td>
<td>=x</td>
<td>=pst</td>
<td>=p</td>
</tr>
<tr>
<td>3rd person</td>
<td>=ø</td>
<td>=aux</td>
<td>=λx</td>
</tr>
</tbody>
</table>

Morphemes which can be split by a second-position clitic

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>'h:iya²</td>
<td>('h/iya²)</td>
<td>negative</td>
<td></td>
</tr>
<tr>
<td>sis</td>
<td>(s/3)</td>
<td>irrealis complementizer</td>
<td></td>
</tr>
<tr>
<td>kats</td>
<td>(k/ts)</td>
<td>habitual</td>
<td></td>
</tr>
<tr>
<td>kis</td>
<td>(k/s)</td>
<td>resultative</td>
<td></td>
</tr>
<tr>
<td>kādīt</td>
<td>(k/ādīt)</td>
<td>purposive</td>
<td></td>
</tr>
<tr>
<td>lə's</td>
<td>(lə/s)</td>
<td>concessive</td>
<td></td>
</tr>
<tr>
<td>lə'xs</td>
<td>(lə'xs)</td>
<td>concessive</td>
<td></td>
</tr>
<tr>
<td>lə'kats</td>
<td>(lə'k/ts)</td>
<td>concessive habitual</td>
<td></td>
</tr>
<tr>
<td>lə'kis</td>
<td>(lə'k/s)</td>
<td>concessive resultative</td>
<td></td>
</tr>
</tbody>
</table>

Abbreviations

In the glosses in this paper, translations of lexical meaning are given in lower case, and grammatical functions are given in upper case. The following abbreviations have been used: ADJ adjectival, ALL allative, CON concessive, COMP complementizer, CMPL completive, DUR durative, ERG ergative, FUT future, HAB habitual, INCH inchoative, ITER iterative, INTR intransitive (irrealis), NEG negative, PROG progressive, Q interrogative, REFL reflexive, RES resultative, STAT stative, TR transitive. For pronouns: 1, 2, 3 = first, second, third person; I, E = inclusive, exclusive (first person); sg, du, pl = singular, dual, plural; S, O, IO, P = subject, object, indirect object, possessive. An asterisk (*) marks the second half of a discontinuous morpheme that has been divided by a clitic; the first half is the initial element of the morpheme cluster. Affixes are set off by a hyphen (-), clitics by an equals sign (=), and ‘endoclitics’ by a slash (/).

The transcription system used here is the Americanist alphabet, with the addition of the palatal stop [k] and Frachtenberg’s ‘resonance and epenthetic vowels’ written as small raised letters.
References

Wackernagel, Jacob. 1892. Über ein Gesetz der indogermanischen Wortstellung. Indogermanische Forschungen 1.333-436.