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Recommended Citation
DOI: 10.31356/silwp.vol03.03
Available at: https://commons.und.edu/sil-work-papers/vol3/iss1/3
SOME PSYCHOLINGUISTIC CONSIDERATIONS IN QUICHÉ LITERACY

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0. Our work among the Quiché Indians of Guatemala has consisted partly in the preparing of literacy materials and teaching reading and writing to illiterates. A major problem for our beginning readers is the recognition of sentences and other large grammatical groupings with the punctuation that marks the borders of such units. It is clear that punctuation marks are necessary for the reader as a partial indication of the intonation of the spoken language, since the latter is not otherwise indicated in the orthography. It is, however, notoriously hard to teach such marks of punctuation, and we have found that only the highly skilled reader consistently recognizes them. This problem has led us to experiment with new ways of teaching punctuation to readers, and we have found a partial solution within the grammatical structure of the language itself.

In the Quiché language there occur certain structural signals (syntactic and morphemic) which mark the borders of the larger grammatical units. By using controlled data in which the structural signals indicate pause at points where it would seem advisable to place marks of punctuation, the student is taught (by association) to respond to periods, commas, etc.
It will be clear from the outset that an awareness of such structural possibilities on the part of the one preparing the reading materials is contingent upon a careful analysis of the language, frequency counting of word orders, etc.

1.1 The ordering of major spots at clause level is the first important structural signal. The major spots may be identified as Subject, Verb, Object, Location and Purpose spots. The "basic" (or statistically most common) word order for a clause in Quiché is Verb followed by Subject, or, if a free object is present, Subject, then Verb, followed by the Object (V+S or S+V+O). The clause final spot is frequently filled by a locational phrase or included purpose clause.

We will consider first the Subject, Verb, and Object spots as they relate to our reading problem. Basic word order #1 for a clause in Quiché is Verb plus Subject: še³š bu³u ci³³. 'The³ man² came¹.' Order #2 is Subject plus Verb plus Object: ri¹ is² bu³u s¹ ci³³ siya⁵. 'The¹ woman² searched for³ the⁴ cat⁵.' These are the most frequently occurring word orders for a clause in Quiché. Other word orders (usually for heightened emphasis) are encountered less frequently; these less common orderings we call "non-basic" (those that have a minimum frequency of occurrence in the language). We have found that it is next to impossible to use the non-basic word orders in literature for beginning readers, and that it is best to use them as little as possible in any literature prepared for the unsophisticated reader. The student apparently anticipates the basic word orders and interprets the written materials accordingly. This means that if we write še³š bu³u ci³³. 'The³ dog¹ left¹-².' The student anticipates a pause after ci³³. If we use a non-basic word order, the student is very likely to become confused. He may, for example, read from the middle of one sentence to the middle of the next. To illustrate:
sibalax\textsuperscript{1} šoyawa\textsuperscript{2}ri\textsuperscript{3} aci\textsuperscript{4} sel\textsuperscript{5} bik\textsuperscript{6}. ri\textsuperscript{7} c?i?\textsuperscript{8} šuterenex\textsuperscript{9} ri\textsuperscript{10} aci\textsuperscript{11}.

'He became\textsuperscript{2} very\textsuperscript{1} angry\textsuperscript{2}. The\textsuperscript{3} man\textsuperscript{4} left\textsuperscript{5-6}. The\textsuperscript{7} dog\textsuperscript{8} followed\textsuperscript{9} the\textsuperscript{10} man\textsuperscript{11}. But the student may read as follows: sibalax\textsuperscript{1} šoyawa\textsuperscript{2} ri\textsuperscript{3} aci\textsuperscript{4} sel\textsuperscript{5} bik\textsuperscript{6} ri\textsuperscript{7} c?i?\textsuperscript{8}. šuterenex\textsuperscript{9} ri\textsuperscript{10} aci\textsuperscript{11}. 'The\textsuperscript{3} man\textsuperscript{4} became\textsuperscript{2} very\textsuperscript{1} angry\textsuperscript{2}. The\textsuperscript{7} dog\textsuperscript{8} left\textsuperscript{5-6}. The\textsuperscript{10} man\textsuperscript{11} followed him\textsuperscript{9}.' The student interpretation is the exact opposite of what the writer intended to say.

This is an example of what \textit{may} happen (and often does) if we use non-basic orderings, especially with beginning readers. On the other hand, if we use basic word orders, the student tends to pause automatically where we have placed a period, and to begin again where we have placed a capital letter, since these marks are associated with his own grouping tendencies. In this way, the syntax acts as an aid in the teaching of these particular marks of punctuation.

We observe that this same thing is true when we include the two other major spots which frequently figure in our basic word orderings for a clause. These are the Location and Purpose spots, filled respectively by a Locational word or phrase, and an included Purpose clause. When occurring together in the same clause, the Location spot precedes the Purpose spot. But when either one or the other occurs alone, as is usually the case, it occupies the final spot in the sequence. To illustrate:

(Basic word order #3) šcaql xun\textsuperscript{2} ušaq\textsuperscript{3} če?\textsuperscript{4} pa\textsuperscript{5} uwi?\textsuperscript{6}. 'A\textsuperscript{2} tree\textsuperscript{1}-leaf\textsuperscript{3} fell\textsuperscript{1} in\textsuperscript{5} his hair\textsuperscript{6}.' (V+S+Loc.); (Basic word order #4) še\textsuperscript{1} čo\textsuperscript{2} rilik\textsuperscript{3} ři\textsuperscript{4} koc?ix\textsuperscript{5}. 'He went\textsuperscript{1} to\textsuperscript{2} look\textsuperscript{3} at the\textsuperscript{4} flowers\textsuperscript{5}.' (V+Purpose); (Basic order #5) še\textsuperscript{1} pa\textsuperscript{2} k?ayibal\textsuperscript{3} ču\textsuperscript{4} cukusik\textsuperscript{5} řu\textsuperscript{6} nan\textsuperscript{7}. 'He went\textsuperscript{1} to\textsuperscript{2} the market\textsuperscript{3} to\textsuperscript{4} look for\textsuperscript{5} his\textsuperscript{6} mother\textsuperscript{7}.' (V+Loc.+Purpose). As with other sentences, this basic order may be altered to express a heightened emphasis, but the non-basic order occurs much less frequently. When
the reader has come to the end of the Locational phrase he anticipates
a pause. If he comes to the end of the Locational phrase and encounters
the initial 'to, for' of the Purpose clause, he will continue reading
to the end of that construction where he again anticipates a pause. If
we change the word order to a non-basic type, surprising things may
happen. For example: taxin kwacat xun ači. pa5 uwiš čaq7 xun8
ušaq9 če?10. čell axsikl2 čanilm3 šril14 ři15 ači16. 'A3 certain manl4
was out for a walkl-2. In5 his hair6 there fell7 the8 leaf9 of a treel0.
The15 man16 quickly13 looked14 up11-12. But the student does not read
thus. Instead he reads: taxin kwacat xun ači pa5 uwiš čaq7 xun8
ušaq9 če?10. čell axsik12. čanilm3 šril14 ři15 ači16. 'A3 certain manl4
was out walkingl-2 in5 his hair6. The8 leaf9 of a treel0 fell7 upwards11-12.
The15 man16 saw it14 immediately13. And this is how the student often
reads, completely without understanding. As a matter of fact, most of the
students do not expect to understand what they are reading. The reading
problem for many of them has been complicated by the fact that they have
spent a few months in school learning to read a language (Spanish) that they
do not adequately comprehend.

But such bad habits can be corrected without too much difficulty
by preparing reading materials for the student which he can easily under­
stand, i.e. materials in his own language that incorporate basic word
orders, etc.l1 The student will then pause where a period has been marked
(although not yet responding to the period as such), and start reading
again where there is a capital letter. He would not only make sense out
of what he is reading, but would unconsciously be conditioned to respond
to the punctuation associated with the pause.

1.2 This same type of thing is encountered with respect to the ordering
of words at phrase level (that is, a verb with its modifiers or a noun with its modifiers).

The usual order for a verb and its modifier(s) is Verb plus Modifier(s): šuxaq¹ kan² xubiq³ ri⁴ porta⁵. 'He¹ left² the⁴ door⁵ open¹ a little³.' (/V+M+M+/+O). We may call this basic order #1 for verb and modifiers. Basic order #2 is Modifier(s) plus Verb: čanim¹ šek². 'He² just¹ left².' (M+/V).

To illustrate how confusion may result for the reader when we use a non-basic word order for verb and modifiers, we use an infrequently occurring type in which the verbal modifier appears at the end of the clause: čak² ama¹ loq² ri³ řikil⁴ čanim⁵. čanoxisax⁶ ri⁷ t?uy⁸ čo⁹ xoron¹⁰. 'Bring¹-² the³ meal⁴ immediately⁵! Fill⁶ the⁷ water-pot⁸ with⁹ water¹⁰! But the reader, more often than not, will place the modifier čanim with the verb of the following sentence, confusing the meaning: 'Bring¹-² the³ meal⁴! Immediately⁵ fill⁶ the⁷ water-pot⁸ with⁹ water¹⁰!' (Which command is to be obeyed first?) Or, to use another example: šel¹ bik² ri³ čo⁴ sibalax⁵ aninaq⁶. šušex⁷ ba?⁸ ri⁹ ri¹⁰ išoq¹¹. 'The³ rat⁴ left¹-² in a hurry⁵-⁶. Then⁸ the¹⁰ woman¹¹ was frightened⁷-⁹¹. The reader, however, may get a slightly different idea: 'The³ rat⁴ left¹-². How⁵ quickly⁶ then⁸ was⁷,⁹ the¹⁰ woman¹¹ frightened⁷,⁹¹! In both cases the reader has anticipated a basic word order, and so has missed the intended meaning.

The usual order for a noun and its modifiers is Modifier(s) plus Noun: ři¹ nim² q?eq³ c?i⁴. (M+M+M+N). 'The¹ big² black³ dog⁴.' Non-basic word orders are Noun plus Modifier, and Modifier plus Noun plus Modifier: ři¹ c?i⁴ nim³. 'The¹ dog², (the) big³ (one).' Again we have an illustration of how confusion may result by using a non-basic word order for the un-sophisticated reader whose grouping tendencies coincide with
the more frequently occurring word orders: 珺 c?i?² sukac³ 珺 išoq⁵ xe?lik⁶. 珺 c?i?⁸ siblax⁹ šćay¹⁰ rumal¹¹ 珺 išoq¹³ xe?lik¹⁴. 珺 išoq¹⁵ palul¹⁶ sukox¹⁷ ri¹⁸ išoq¹⁹ cu²⁰ šćayik²¹ ri²² c?i?²³. 'The¹ dog² bit³ the⁴ lovely⁶ lady⁵. The⁷ dog⁸ was¹⁰ thoroughly⁹ beaten¹⁰ by¹¹ the¹² lovely¹⁴ lady¹³. A¹⁵ stick¹⁶ is what the¹⁸ lady¹⁹ used¹⁷ to²⁰ beat²¹ the²² dog²³.' But, again, the student, anticipating a basic word order—not reading the punctuation—interprets as follows: 'The¹ dog² bit³ the⁴ lady⁵. The⁷ dog⁸ is pretty⁶. He was beaten¹⁰ thoroughly⁹ by¹¹ the¹² lovely¹⁴ lady¹³. The¹⁵ stick¹⁶ is pretty¹⁴. The¹⁸ lady¹⁹ used it¹⁷ to²⁰ beat²¹ the²² dog²³.'

1.3 The preceding erroneous interpretations are serious enough when taken each by itself, but when we put together a number of non-basic word orders for clause and phrase, the real meaning of the text becomes very obscure indeed to the reader. In the following sample, most of the aforementioned errors have been repeated: taxin¹ kwakat² xun³ tata⁴. pa⁵ uwi⁶ šćaq⁷ xun⁸ ušaq⁹ če?¹⁰. če¹¹ axsik¹² šxr¹³ 珺 ači¹⁵ čani⁶. sibalax¹⁷ šibišik¹⁸. čo¹⁹ račo²⁰ še²¹ k?ut²², kšik?an²³ 珺 i²⁴ ači²⁵ aninaq²⁶. škanax²⁷ 珺 i²⁸ alax²⁹ ušaq³⁰ če³¹ pa³² 珺 i³³ be³⁴ nim³⁵. 珺 i³⁶ ači³⁷ k?ut³⁸ šanimaxik³⁹ čo⁴⁰ xa⁴¹. pa⁴² račo⁴³ šel⁴⁴ bik⁴⁵ 珺 i⁴⁶ ači⁴⁷ mawi⁴⁸ xumal⁴⁹. šuban⁵⁰ račo⁵¹ wa?⁵² xun⁵³ alax⁵⁴ ušaq⁵⁵ če?⁵⁶.

The interpretation that the student is meant to get from the above is as follows: 'A³ certain gentleman¹ was out walking¹-². In⁵ his hair⁶ there fell⁷ the⁸ leaf⁹ of a tree¹⁰. The¹¹ man¹² quickly¹⁶ glanced¹³ upwards¹¹-¹². He was¹⁸ really¹⁷ frightened¹⁸ and²² the²¹ man²⁵ went²¹ running²³ rapidly²⁶ home¹⁹-²⁰. The²⁸ little²⁹ tree³¹-leaf³⁰ remained²⁷ in³² the³³ big³⁵ road³⁴. But³⁸ the³⁶ man³⁷ hid himself³⁹ in⁴⁰ his house⁴¹. And from⁴² that house⁴³ the⁴⁶ man⁴⁷ never⁴⁸ went out⁴⁹ again⁴⁹. All⁵¹ this⁵² is what a⁵³ little⁵⁴ tree⁵⁶-leaf⁵⁵ did⁵⁰.' But the student probably will read something like this: 'A³ certain gentleman¹ was out
walking in his hair. A tree fell upwards. The man looked. He was frightened in his house. Then the man went running. Quickly the little tree remained in the road. The man was big that hid himself in the house. In his house, a little tree never did all this.

Much of this confusion could have been dispelled by the use of basic word orders. And how important it is to the students' "reading understanding" that they make sense out of their early reading materials.

In Quiché there are certain morphemes which also act as overt structural signals for the reader, marking the borders of grammatical units on phrase, clause, and sentence level. Some of these signal the beginning of such a unit, and others the end point. Like the word orders, these may be used to produce a conditioned response to the marks of punctuation signalling such borders.

The first group of morphemes is made up exclusively of what we may call "Interrogatives." In almost every Quiché dialect there is an "Interrogative indicator" a or la used to indicate that the utterance is a question. This morpheme always occurs at the beginning of the sentence. For example: a k?o ŋi wux? Is the book (here, there)? or la kawax su. Do you want tamalitos? When the reader encounters this morpheme he knows that 1) he has come to the beginning of a new sentence, and 2) that the sentence is a question. The interrogatives include also what are commonly known as "interrogative pronouns" such words as xasñe 'why?', xawixe 'where?', xačike 'what?', xačin 'who?', etc. These morphemes, like a and la, occur always in sentence-initial position, and so signal the beginning of a new sentence.
Perhaps the most interesting set of morphemes, however, are a triad of "terminal morphemes" which normally do not occur except preceding a pause. Morpheme #1 is suffix -o/-u, possibly indicating 'indicative mode', and occurs with verbs of class #1 'transitive stems'. Morphemes #2 and #3 are -og and -ik respectively. -og indicates 'imperative mode' with 'intransitive', 'stative', and 'passive' stems; -ik is a terminal morph with no readily definable meaning. The interesting thing about these suffixes is that they normally occur only at the end of a sentence, or when the speaker pauses or hesitates, i.e. where we would usually place a comma, period, or dash.

For our first illustration we take morpheme #1 -o: If we say, xas1 ŋuban2 ri3 ači4? 'What1 did2 the3 man4 do2?', the verb ŋuban is not terminated with morpheme -o, since it is not the end of clause or sentence. However, if we drop the two final words (ri3 ači4) so that the clause terminates with the verb, we must suffix -o to the verb:

xas1 ŋubano2? 'What1 did he do2?' or 'What1 happened2?'. In this example the morpheme occurs at the end of the clause (and coincides with the end of the utterance). In the following example it signals a brief pause: ŋri1 lo1 šuk?am2 bico3. 'He saw it1 (and) he carried it2 away3.' However, if there is no pause, the -o is dropped: ŋri1 juno2 če?o3 'He saw1 a2 tree3.' In the next utterance, the speaker hesitates (see footnote 7), and, hesitating, suffixes the -o where he makes the break: xas1 či2 kinbanan2-xas1 či5 kinban6 čanim7 nan8? 'What1 then2 shall I do3--what4 then5 shall I do6 just now7, ma'm8?'

The following are some examples with morphemes #2 -og and #3 -ik:
čatwarog! 'Sleep!' but, čatwar1 pucil2. 'Sleep1 well2!' And again, čatwalixoq! 'Get up!' but, čatwalix1 pa2 ra3 č?at4! 'Get up1 from 2 your3 bed4!!' In these two examples -og occurs only at the end of the
clause (coinciding with the end of the sentence). Using morpheme -ik: ŝporotaxik. 'It's been burned.' but, ŝporotaxik kan ŝi wux. 'The paper has been burned (and remains so).' In these examples -ik occurs sentence-final. In the following example -ik marks both tentative and final pause: ya ŝk?is ŝi klas. 'No class is ended.' but, ya ŝk?isik2, kuxkikotik3. 'No it is ended, (and) we're happy!' In each case the terminal morphemes mark a pause where we would place a comma or period.

Now, consider what would happen if the one preparing the reading materials fails to recognize the significance of these morphemes as structural signals and places them indiscriminately: ŝapeteq1 waral2, Lu?3! xal4 ŝubang5 ŝi6 aĉi7 ŝi8 simwilo9 q?abarel10 k?o11 pa12 ŝi13 be14 a15 ŝpetek16 ŝi17 guardia18 a19 ŝakanik20 ŝi21 aĉi22 ŝi23 k?o24 pa25 be26. The writer wishes to say: 'Come here, Peter! What did the man do that I saw drunk in the road? Did the police come? Did the man die that was in the road?' But because these terminal morphemes were misplaced, the student reads as follows: ŝapeteq1 waɾal2, Lu?3. xal4 ŝubang5 ŝi6 aĉi7 ŝi8 simwilo9. q?abarel10 k?o11 pa12 ŝi13 be14 a15 ŝpetek16 ŝi17 guardia18 a19 ŝakanik20 ŝi21 aĉi22 ŝi23 k?o24 pa25 be26. 'Come! Here, Peter. What happened? I saw this man. He was there in the road drunk. Did he come? The police. He died? This man was in the road.'

The result is confusion. However, if employed wisely, these terminal morphemes are most useful in signalling sentence breaks and comma breaks. The student may soon learn that where one of these morphemes occurs, there also occurs a period or comma. And, automatically pausing at that point, he learns by association that he must pause when he encounters comma or period, even in contexts where the overt morphemic
signals are lacking.

The following sample occurs without punctuation of any sort, but word orders and signalling morphemes tell where the breaks occur:

\[
\begin{align*}
\text{še} & \, \text{ři} & \, \text{ači} & \, \text{šucukux} & \, \text{řu} & \, \text{k?oxol} & \, \text{pa} & \, \text{k?ayibal} & \, \text{šuřiq} & \, \text{šuřiq} & \, \text{řu} & \, \text{k?oxol} & \, \text{čila?} & \, \text{xas} & \, \text{kaban} & \, \text{wařal} & \, \text{šubix} & \, \text{řu} & \, \text{tat} & \, \text{če} & \, \text{man} & \, \text{k?o} & \, \text{ta} & \, \text{kinbano} & \, \text{šča?} & \, \text{čatvalixoq} & \, \text{šča?} & \, \text{xat} & \, \text{čo} & \, \text{xa} & \, \text{šča?} & \, \text{a} & \, \text{kawax} & \, \text{xun} & \, \text{q?abax} & \, \text{xat} & \, \text{čanim} & \, \text{čo} & \, \text{xa} & \, \text{ři} & \, \text{minkox} & \, \text{xun} & \, \text{q?abax} & \, \text{čave}
\end{align*}
\]

In the next copy of the same sample, the possible breaks are marked by a single slant line, and the structural signals marked by underline wherever possible:

\[
\begin{align*}
\text{še} & \, \text{ři} & \, \text{ači} & \, \text{šucukux} & \, \text{řu} & \, \text{k?oxol} & \, \text{pa} & \, \text{k?ayibal} & \, \text{šuřiq} & \, \text{šuřiq} & \, \text{řu} & \, \text{k?oxol} & \, \text{čila?} & \, \text{xas} & \, \text{kaban} & \, \text{wařal} & \, \text{šubix} & \, \text{řu} & \, \text{tat} & \, \text{če} & \, \text{man} & \, \text{k?o} & \, \text{ta} & \, \text{kinbano} & \, \text{šča?} & \, \text{čatvalixoq} & \, \text{šča?} & \, \text{xat} & \, \text{čo} & \, \text{xa} & \, \text{šča?} & \, \text{a} & \, \text{kawax} & \, \text{xun} & \, \text{q?abax} & \, \text{xat} & \, \text{čanim} & \, \text{čo} & \, \text{xa} & \, \text{ři} & \, \text{minkox} & \, \text{xun} & \, \text{q?abax} & \, \text{čave}
\end{align*}
\]

"The man left. He searched for his son in the market. He found him. He found his son there. "What are you doing here?" his father said to him. "I'm not doing anything," he said. "Get up!" he said. "Get yourself home right now, lest I give you a slap!"

The first pause comes at the end of a simple clause, words 1-3 (see first part of this paper 1.1 "On clause level"). The second pause is signalled by the location spot (7-8). Terminal morpheme -o signals the next break (9). čila? (13) fills another location spot, indicating a pause. xas (14) is an interrogative and marks the beginning of an utterance, while wařal (16) is locational, signalling the termination of the same utterance. Pause group (17-20) is ter-
minated by a locational  şey (20). The break after group (21-24) is indicated by ordering of the major spots, and the same may be said for the pause following ściła? (25). Terminal morpheme -oa signals the next break (26), and ściła? (27) another. ściło xaa (29-30) fills a location spot, indicating a pause, and ściła? (31) another break. The beginning of the next pause group is signalled by a (32), an interrogative particle, and the termination of this same group is indicated by the ordering of the major spots in the clause. The terminals of the next two groups are signalled by locationals (38-39) and (43) respectively.

3. As one would expect, this system of structural signals is not without its deficiencies from the standpoint of the teacher. It is not always clear, for instance, whether the pause indicated is tentative or final. It has been noted (see footnote 6) that the terminal morpheme -ik has a variety of occurrence, and, therefore, a certain ambiguity which somewhat lessens its value as a "signalling morpheme". But these rather minor failings do not deprive the structural signals of their importance as reading aids, as stimuli to produce a conditioned response to punctuation.

Probably of most interest, however, to the structural linguist, is the rather obvious fact that one must first analyze the language in order to learn just how these structural signals function. The perceptual tendencies of the reader and structural analysis converge at this point, with the implication that the preparer of literacy materials should regard the latter as a key to the former.
The Quichés are a tribe of approximately 500,000 Indians whose main centers of population are located in the southwestern highlands of Guatemala. Their language is of the greater Mayan stock, identified as a member of the Quichoid group (A.M. Halpern - 1942) or Quichecan (N.A. McQuown - 1956).

The phonemes of Quiché are p, t, c, č, k, q, ?, b, t?, c?, č?, k?, q?, w, s, š, y, x, m, n, ɾ, i, e, a, ē, o, u. Preliminary phonemic analysis has been done by Carol A. Fox of the Summer Institute of Linguistics.

We are grateful to Robert E. Longacre of the same Summer Institute of Linguistics for his valuable counsel and criticism in the preparation of this paper.

"...sensory events will tend to be perceived in groups dependent upon redundancy and frequency in past occurrence." ("Psycholinguistics A survey of theory and research problems", Supplement to IJAL, Vol. 20 #14 October 1954, "Translation Issue", p. 55). This premise would appear to be borne out by the tendency of Quiché readers to group in accordance with word orders that have a greater frequency of occurrence in the language.

"Unlike the encoder, who 'knows' he is going to say 'the little girl with red hair' before he starts, the decoder must react sequentially to the sound material as it is unreeled, modifying his interpretation as new material comes along..." ("Psycholinguistics...", p.72). In this case the reader "anticipates" a pause after the location spot, but, encountering a Purpose clause after the Location spot, he "reacts sequentially" to the data, and continues reading.

It is interesting to see the look of surprise and delight on the faces of the students when they read, for the first time, material which they
understand, in their own language.

5. It may be asked at this point, "Why, then, use punctuation at all if these structural signals are valid?" We must use punctuation marks for two reasons: 1) because most of our readers are expected to become bilingual in Spanish and Quiché, and will need to read punctuation in order to understand literature in the Spanish language, and 2) since it is necessary to use emphatic or non-basic word orders in more advanced Quiché literature.

6. -ik has a much wider distribution than the other suffixes mentioned. It occurs 1) as a terminal morpheme indicating a grammatical border, 2) as a terminal morpheme to certain "infinitive" forms, and 3) as terminal morpheme with "participles". In the case of the latter two forms, we find -ik occurring in any position within a clause (any position in which the infinitive or participle may occur). This does not invalidate the importance of -ik as a "pause signalling" morpheme, however, since the reader, decoding sequentially, is conditioned by what precedes the morpheme itself (i.e. the participle or infinitive stem).

7. Of course this particular phenomenon will only be noticed when the speaker happens to pause at the end of a stem which regularly suffixes one of these morphemes. It would not occur when the hesitation pause coincides with a "minor structural boundary" ("Psycholinguistics...", p. 99) such as a syllable margin within the word.

8. In rapid speech where such a "pause" is hardly discernable, it appears that the morpheme itself is the juncture or "contains" the juncture.

9. As further research into the relations between the "language structure" and "perceptual grouping tendencies" of the language speakers, revealed in their responses to written literature, we want to study more in detail the reactions of naive readers to "unpunctuated" text. Such a study
Footnotes (con't)

should show us 1) whether or not the structural signals are such as to enable the student to differentiate between "tentative" and "final" pause, and 2) what are the potential ambiguities of the structural signals. Furthermore, it should show us 3) whether or not there is a parallel between the average number of occurrences in text of a particular "word order" and the frequency with which the student responds to that word order (or "groups" according to that word order.)