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David G. Fox
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SOME PSYCHOLINGUISTIC CONSIDERATIONS IN QUICHÉ LITERACY

David G. Fox

Summer Institute of Linguistics, University of North Dakota

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0. Our work among the Quiché¹ 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: špe¹ ři² ači³. 'The² man³ came¹.' Order #2 is Subject plus Verb plus Object: ri¹ išoq² šucukux³ ři⁴ siya.⁵ '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 language²). 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 šel¹ bik² ři³ c?i?⁴. 'The³ dog⁴ left¹⁻².' The student anticipates a pause after c?i?. 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:

sibalax¹ šoyawař². ři³ ači⁴ šel⁵ bik⁶. ři⁷ c?i?⁸ šuterēnex⁹ ři¹⁰ ači¹¹.
 'He became² very¹ angry². The³ man⁴ left⁵⁻⁶. The⁷ dog⁸ followed⁹ the¹⁰
 man¹¹. But the student may read as follows: sibalax¹ šoyawař² ři³ ači⁴.
 šel⁵ bik⁶ ři⁷ c?i?⁸. šuterēnex⁹ ři¹⁰ ači¹¹. 'The³ man⁴ became² very¹
 angry². The⁷ dog⁸ left⁵⁻⁶. The¹⁰ man¹¹ followed him⁹.' The student in-
 terpretation is the exact opposite of what the writer intended to say.
 This is an example of what 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 Pur-
 pose 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) šcaq¹ xun² ušaq³ če?⁴ pa⁵ uwi?⁶. 'A² tree⁴-leaf³
 fell¹ in⁵ his hair⁶.' (V+S+Loc.); (Basic word order #4) še¹ če² řilik³
 ři⁴ koc?ix⁵. 'He went¹ to² look³ at the⁴ flowers⁵.' (V+Purpose); (Basic
 order #5) še¹ pa² k?ayibal³ ču⁴ cukušik⁵ řu⁶ nan⁷. 'He went¹ to² the
 market³ to⁴ look for⁵ his⁶ mother⁷.' (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 č- 'to, for' of the Purpose clause³, 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: taxin¹ kwacat² xun³ ači⁴. pa⁵ uwi?⁶ šcaq⁷ xun⁸ ušaq⁹ če?¹⁰. čell¹¹ axsik¹² čanim¹³ šřil¹⁴ řil¹⁵ ačil¹⁶. 'A3 certain man⁴ was out for a walk¹⁻². In⁵ his hair⁶ there fell⁷ the⁸ leaf⁹ of a tree¹⁰. The¹⁵ man¹⁶ quickly¹³ looked¹⁴ up¹¹⁻¹².' But the student does not read thus. Instead he reads: taxin¹ kwacat² xun³ ači⁴ pa⁵ uwi?⁶ . šcaq⁷ xun⁸ ušaq⁹ če?¹⁰ čell¹¹ axsik¹². čanim¹³ šřil¹⁴ řil¹⁵ ačil¹⁶. 'A3 certain man⁴ was out walking¹⁻² in⁵ his hair⁶. The⁸ leaf⁹ of a tree¹⁰ 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 understand, i.e. materials in his own language that incorporate basic word orders, etc.⁴ 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 xubiq?³ ři⁴ pořta⁵. '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: čak?ama¹ loq² ři³ řikil⁴ čanim⁵. čanoxisax⁶ ři⁷ t?uy⁸ če⁹ xořon¹⁰. '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 ři³ č?o⁴ sibalax⁵ aninaq⁶. šušex⁷ ba?⁸ řib⁹ ři¹⁰ išoq¹¹. 'The³ rat⁴ left¹⁻² in a hurry⁵⁻⁶. Then⁸ the¹⁰ woman¹¹ was frightened⁷⁻⁹!' The reader, however, may get a slightly different idea: 'The³ rat⁴ left¹⁻². How⁵ quickly⁶ then⁸ was^{7,9} the¹⁰ woman¹¹ frightened^{7,9}!' 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?i?⁴. (M+M+M+N). 'The¹ big² black³ dog⁴.' Non-basic word orders are Noun plus Modifier, and Modifier plus Noun plus Modifier: ři¹ c?i?² 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: ři¹ c?i?² šukac³ ři⁴ išoq⁵ xe?lik⁶. ři⁷ c?i?⁸ siblax⁹ šč?ay¹⁰ řumal¹¹ ři¹² išoq¹³ xe?lik¹⁴. ři¹⁵ palul¹⁶ šukox¹⁷ ři¹⁸ išoq¹⁹ ču²⁰ č?ayik²¹ ři²² 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 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 tata?⁴. pa⁵ uwi?⁶ šcaq⁷ xun⁸ ušaq⁹ če?¹⁰. če¹¹ axsik¹² šřil¹³ ři¹⁴ ači¹⁵ čanim¹⁶. sibalax¹⁷ šibišik¹⁸. čol¹⁹ řáčoč²⁰ še²¹ k?ut²², kšik?an²³ ři²⁴ ači²⁵ aninaq²⁶. škanax²⁷ ři²⁸ alax²⁹ ušaq³⁰ če?³¹ pa³² ři³³ be³⁴ nim³⁵. ři³⁶ ači³⁷ k?ut³⁸ šanimaxik³⁹ čol⁴⁰ xa⁴¹. pa⁴² řáčoč⁴³ šel⁴⁴ bik⁴⁵ ři⁴⁶ ači⁴⁷ mawi⁴⁸ xumul⁴⁹. šuban⁵⁰ řonoxel⁵¹ wa?⁵² xun⁵³ alax⁵⁴ ušaq⁵⁵ če?⁵⁶.

The interpretation that the student is meant to get from the above is as follows: 'A³ certain gentleman⁴ was out walking¹⁻². In⁵ his hair⁶ there fell⁷ the⁸ leaf⁹ of a tree¹⁰. The¹⁴ man¹⁵ quickly¹⁶ glanced¹³ upwards¹¹⁻¹². He was¹⁸ really¹⁷ frightened¹⁸, and²² the²⁴ 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 out⁴⁴⁻⁴⁵ again⁴⁹. All⁵¹ this⁵² is what a⁵³ little⁵⁴ tree⁵⁶-leaf⁵⁵ did⁵⁰! But the student probably will read something like this: 'A³ certain gentleman⁴ was out

walking¹⁻² in⁵ his hair⁶. A⁸ tree¹⁰-leaf⁹ fell⁷ upwards¹¹⁻¹². The¹⁴ man¹⁵ looked¹³. He was¹⁸ quickly¹⁶ frightened¹⁸ in¹⁹ his house²⁰. Then²² the²⁴ man²⁵ went²¹ running²³! Quickly²⁶ the²⁸ little²⁹ tree³¹ -leaf³⁰ remained²⁷ in³² the³³ road³⁴. The³⁶ man³⁷ was big³⁵ that hid himself³⁹ in⁴⁰ the house⁴¹. In⁴² his house.⁴³ A⁵³ little⁵⁴ tree⁵⁶-leaf⁵⁵ never⁴⁸⁻⁴⁹ did⁵⁰ all⁵¹ this⁵².'

Much of this confusion could have been dissipated 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.

2.1 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.⁵

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: a¹ k?^{o2} ři³ wux⁴? 'Is² the³ book⁴ (here, there)?¹' or la¹ kawax² sub³? 'Do you want² tamalitos³?¹' 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 xasče 'why?', xawixe? 'where?', xăčike 'what?', xăčin '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 -oq and -ik respectively. -oq indicates 'imperative mode' with 'intransitive', 'stative', and 'passive' stems; -ik is a terminal morph with no readily definable meaning.⁶ 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,⁷ i.e. where we would usually place a comma, period, or dash.

For our first illustration we take morpheme #1 -o: If we say, $xas^1 \check{s}uban^2 \check{r}i^3 a\check{c}i^4?$ 'What¹ did² the³ man⁴ do²?', the verb $\check{s}uban$ is not terminated with morpheme -o, since it is not the end of clause or sentence. However, if we drop the two final words ($\check{r}i^3 a\check{c}i^4$) so that the clause terminates with the verb, we must suffix -o to the verb: $xas^1 \check{s}ubano^2?$ '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: $\check{s}\check{r}ilo^1, \check{s}uk?am^2 bic^3$. 'He saw it¹ (and) he carried it² away³.' However, if there is no pause, the -o⁸ is dropped: $\check{s}\check{r}il^1 jun^2 \check{c}e?.^3$ 'He saw¹ a² tree³.' In the next utterance, the speaker hesitates (see footnote 7), and, hesitating, suffixes the -o where he makes the break: $xas^1 \check{c}i^2 kinbano^3--xas^4 \check{c}i^5 kinban^6 \check{c}anim,^7 nan^8?$ 'What¹ then² shall I do³--what⁴ then⁵ shall I do⁶ just now⁷, ma'm⁸?'

The following are some examples with morphemes #2 -oq and #3 -ik: $\check{c}atwa\check{r}oq!$ 'Sleep!' but, $\check{c}atwa\check{r}^1 pucil^2$. 'Sleep¹ well²!' And again, $\check{c}atwalixoq!$ 'Get up!' but, $\check{c}atwalix^1 pa^2 ra^3 \check{c}?at^4!$ 'Get up¹ from² your³ bed⁴!' In these two examples -oq occurs only at the end of the

clause (coinciding with the end of the sentence). Using morpheme -ik:
šporotaxik. 'It's been burned.' but, šporotax¹ kan² ři³ wux⁴. 'The³
 paper⁴ has been burned¹ (and remains so²).' In these examples -ik occurs
 sentence-final. In the following example -ik marks both tentative and
 final pause: ya¹ šk?is² ři³ klas⁴. 'Now¹ class³⁻⁴ is ended².' but,
ya¹ šk?isik², kuxkikotik³. 'Now¹ it is ended², (and) we're happy³!' 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: čatpetoq¹ wařal², Lu?³! xas⁴ šubano⁵ ři⁶ ači⁷ ři⁸ sinwilo⁹ q?abarel¹⁰ k?o¹¹ pa¹² ři¹³ be¹⁴? a¹⁵ špetik¹⁶ ři¹⁷ guardia¹⁸? a¹⁹ škamik²⁰ ři²¹ ači²² ři²³ k?o²⁴ pa²⁵ be²⁶? The writer wishes to say: 'Come¹ here², Peter³! What⁴ did⁵ the⁶ man⁷ do⁵ that⁸ I saw⁹ drunk¹⁰ in¹² the¹³ road¹⁴? Did¹⁶ the¹⁷ police¹⁸ come¹⁶? Did²⁰ the²¹ man²² die²⁰ that²³ was²⁴ in²⁵ the road²⁶? But because these terminal morphemes were misplaced, the student reads as follows: čatpetoq¹! wařal², Lu?³. xas⁴ šubano⁵? ři⁶ ači⁷ ři⁸ šimwilo⁹. q?abařel¹⁰ k?o¹¹ pa¹² ři¹³ be¹⁴--a¹⁵. špetik¹⁶? ři¹⁷ guardia¹⁸--a¹⁹ škamik²⁰? ři²¹ ači²² ři²³ k?o²⁴ pa²⁵ be²⁶-- 'Come¹! Here,² Peter³. What⁴ happened⁵? I saw⁹ this⁶⁻⁸ man⁷. He was¹¹ there in¹² the¹³ road¹⁴ drunk¹⁰-- Did he come¹⁶? The¹⁷ police¹⁸-- He died²⁰? This²¹⁻²³ man²² was²⁴ in²⁵ the road²⁶--'

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 period⁹, 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:

še¹ ři² ači³ šucukux⁴ řu⁵ k?oxol⁶ pa⁷ k?ayibal⁸ šuřiqo⁹ šuřiq¹⁰ řu¹¹
 k?oxol¹² čila?¹³ xas¹⁴ kaban¹⁵ wařal¹⁶ šubix¹⁷ řu¹⁸ tat¹⁹ če²⁰ man²¹
 k?o²² ta²³ kinbano²⁴ šča?²⁵ čatwalixox²⁶ šča?²⁷ xat²⁸ čo²⁹ xa³⁰ šča?³¹
 a³² kawax³³ xun³⁴ q?abax³⁵ xat³⁶ čanim³⁷ čo³⁸ xa³⁹ ři⁴⁰ minkox⁴¹ xun⁴²
 q?abax⁴³ čawe⁴⁴

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:

še¹ ři² ači³/ šucukux⁴ řu⁵ k?oxol⁶ pa? k?ayibal⁸/ šuřiqo⁹/ šuřiq¹⁰
 řu¹¹ k?oxol¹² čila?¹³/ xas¹⁴ kaban¹⁵ wařal¹⁶/ šubix¹⁷ řu¹⁸ tat¹⁹ če²⁰/
 man²¹ k?o²² ta²³ kinbano²⁴/ šča?²⁵/ čatwalixox²⁶/ šča?²⁷/ xat²⁸
čo²⁹ xa³⁰/ šča?³¹/ a³² kawax³³ xun³⁴ q?abax³⁵/ xat³⁶ čanim³⁷ čo³⁸ xa³⁹/
 ři⁴⁰ minkox⁴¹ xun⁴² q?abax⁴³ čawe⁴⁴/

'The² man³ left¹. He searched for⁴ his⁵ son⁶ in⁷ the market⁸. He found him⁹. He found¹⁰ his¹¹ son¹² there¹³. "What¹⁴ are you doing¹⁵ here¹⁶?" his¹⁸ father¹⁹ said¹⁷ to him²⁰. "I'm²⁴ not^{21,23} doing²⁴ anything²²," he said²⁵. "Get up²⁶!" he said²⁷. "Get yourself²⁸ home²⁹⁻³⁰!" he said³¹. "Do you want³³ a³⁴ slap³⁵? Get³⁶ home³⁸⁻³⁹ right now³⁷, lest⁴⁰ I give⁴¹ you⁴⁴ a slap⁴³!"

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 če (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 šča? (25). Terminal morpheme -oq signals the next break (26), and šča? (27) another. čo xa (29-30) fills a location spot, indicating a pause, and šča? (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.

FOOTNOTES

1. 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 Quichean (N.A. McQuown - 1956).

The phonemes of Quiché are p, t, c, č, k, q, ʔ, b, tʔ, cʔ, čʔ, kʔ, qʔ, w, s, š, y, x, m, n, l, ř, i, e, a, ə, 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.

2. "...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 #4 October 1954, "Translation Issue", p. 55). This premise would appear to be born out by the tendency of Quiché readers to group in accordance with word orders that have a greater frequency of occurrence in the language.
3. "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 unreel, 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.
4. 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

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.)