SOME PSYCHOLINGUISTIC CONSIDERATIONS IN QUICHÉ LITERACY

By David G. Fox

Our work among the Quiché\(^1\) 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.

Clause level syntactic signals

The ordering of major spots at clause level is the first important structural signal. The major spots may be indentified 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.

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\(^1\) 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, ċ, k, q, ?, b, t?, c?, č?, k?, q?, w, s, š, y, x, m, n, l, r, i, ñ, a, ñ, ñ, 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.
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: špe\(^1\) ri\(^2\) ači\(^3\). 'The\(^2\) man\(^3\) came.' Order \#2 is Subject plus Verb plus Object: ri\(^1\) išaq\(^2\) súcukux\(^3\) ri\(^4\) siya\(^5\). 'The\(^1\) woman\(^2\) searched for\(^3\) the\(^4\) cat\(^5\).' 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).\(^2\) 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 šel\(^1\) bik\(^2\) ri\(^3\) c\(^5\)p\(^4\). 'The\(^2\) dog\(^4\) left\(^1\).' the student anticipates a pause after c\(^5\)p\(^4\). 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\(^1\) šoyawar\(^2\). ri\(^8\) ači\(^4\) šel\(^6\) bik\(^6\). ri\(^7\) c\(^5\)p\(^8\) šuterenex\(^9\) ri\(^1\)\(^0\) ači\(^1\)\(^1\). 'He became\(^2\) very\(^1\) angry\(^2\). The\(^3\) man\(^4\) left\(^5\)\(^6\). The\(^7\) dog\(^8\) followed\(^9\) the\(^1\)\(^0\) man\(^1\)\(^1\).' But the student may read as follows: sibalax\(^1\) šoyawar\(^2\) ri\(^8\) ači\(^4\) šel\(^6\) bik\(^6\) ri\(^7\) c\(^5\)p\(^8\) šuterenex\(^9\) ri\(^1\)\(^0\) ači\(^1\)\(^1\). 'The\(^3\) man\(^4\) became\(^2\) very\(^1\) angry\(^2\). The\(^7\) dog\(^8\) left\(^5\)\(^6\). The\(^1\)\(^0\) man\(^1\)\(^1\) followed him\(^9\).' The student interpretation 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 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 šcaq\(^1\) xun\(^2\) ušaq\(^4\) če\(^2\) p\(^4\) pa\(^5\) uwi\(^7\). 'A\(^2\) tree\(^4\) fell\(^1\) in\(^5\) his hair\(^6\).' (V+S+Loc.); (Basic word order \#4) še\(^1\) če\(^2\) rilik\(^3\) ri\(^4\) koc\(^5\)ix. 'He went\(^1\) to\(^2\) look\(^3\) at the\(^4\) flowers\(^5\).' (V+Purpose); (Basic order \#5) še\(^1\) pa\(^2\) k'ayibal\(^3\) ču\(^4\) cukúšik\(^5\) ru\(^6\) nan\(^7\). 'He went\(^1\) to\(^2\) the market\(^3\) to\(^4\) look for\(^5\) his\(^6\) mother\(^7\).' (V+Loc.+Purpose). As with other sentences, this basic order may be altered to

\(^2\)"... 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 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.
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 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 pa6 uwi7 ścaq7 xun ušaq9 če90 če11 axsik12 čanim13 šril14 ri15 ači16. 'A certain man was out for a walk1,2. In6 his hair6 there fell7 the8 leaf9 of a tree10. The15 man16 quickly18 looked14 up11,12.' But the student does not read thus. Instead he reads: taxin kwacat xun ači pa6 uwi7 ścaq7 xun ušaq9 če90 če11 axsik12 čanim13 šril14 ri15 ači16. 'A certain man was out walking1,2 in6 his hair6. The8 leaf9 of a tree10 fell7 upwards11,12. The15 man16 saw it14 immediately18.' 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 compounded by the fact that they have spent a few months in school learning to read in 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. 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.

Phrase level syntactic signals

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): śuxaq1 kan2 xubiq28 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 log2 ri3 rikil4 čanim5.

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 unreed, 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 looks 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.
The usual order for a noun and its modifiers is Modifier(s) plus Noun: ri1 nim2 qeq3 cpi4. (M+M+M+N). ‘The1 big2 black3 dog4.’ Non-basic word orders are Noun plus Modifier, and Modifier plus Noun plus Modifier: ri1 cpi22 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 unsophisticated reader whose grouping tendencies coincide with the more frequently occurring word orders: ri1 cpi22 麂ac3 ri4 ieqo3 xeliek9. ri7 cpi28 sibax9 麂ay10 rumai11 ri12 ieqo13 xeliek14. ri18 palu16 麂ox17 ri18 ieqo19 甜20 甜ayik21 ri22 cpi23. ‘The1 dog2 bit3 the4 lovely6 lady6. The7 dog8 was10 thoroughly9 beaten10 by11 the12 lovely14 lady15. A15 stick16 is what the19 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 lady6. The7 dog8 is pretty6. He was beaten10 thoroughly9 by11 the12 lady13. The15 stick16 is pretty14. The18 lady19 used it17 to20 beat21 the22 dog23.’

Summary of clause and phrase problems.

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 afore-mentioned errors have been repeated: taxin1 kwata2 xun3 tata4. pa5 uwu6 麂aq7 xun8 麂aq9 甜10. 甜11 axik12 甜13. ri14 achi15 甜16. sibax17 甜18 甜19. 甜20 甜21 kut22. kishan23 ri24 achi25 aniaq26. 甜27 ri28 alax29 麂aq30 甜31 pa32 ri33 甜34. 甜35 achi37 kut38 甜39. 甜40 achi41 甜42 甜43 甜44 甜45 甜46 achi47. mawi48 xumul49. 甜40. 甜50. 甜51. 甜52. 甜53. 甜54. 甜55. 甜56.

The interpretation that the student is meant to get from the above text is as follows: ‘A3 certain gentleman4 was out walking1,2. In6 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 the38 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 did59!’

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But the student probably will read something like this: 'A\textsuperscript{3} certain gentleman\textsuperscript{4} was out walking\textsuperscript{1,2} in\textsuperscript{5} his hair\textsuperscript{6}. A\textsuperscript{8} tree\textsuperscript{10,leaf\textsuperscript{9}} fell\textsuperscript{7} upwards\textsuperscript{11,12}. The\textsuperscript{14} man\textsuperscript{15} looked\textsuperscript{18}. He was\textsuperscript{18} quickly\textsuperscript{16} frightened\textsuperscript{18} in\textsuperscript{19} his house\textsuperscript{20}. Then\textsuperscript{22} the\textsuperscript{24} man\textsuperscript{25} went\textsuperscript{21} running\textsuperscript{23}! Quickly\textsuperscript{26} the\textsuperscript{28} little\textsuperscript{29} tree\textsuperscript{31,leaf\textsuperscript{30}} remained\textsuperscript{27} in\textsuperscript{32} the\textsuperscript{33} road\textsuperscript{34}. The\textsuperscript{36} man\textsuperscript{37} was big\textsuperscript{36} that hid himself\textsuperscript{39} in\textsuperscript{40} the house\textsuperscript{41}. In\textsuperscript{42} his house\textsuperscript{43}. A\textsuperscript{63} little\textsuperscript{64} tree\textsuperscript{66,leaf\textsuperscript{65}} never\textsuperscript{48,49} did\textsuperscript{60} all\textsuperscript{61} this\textsuperscript{62}!

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.

**Morphemic signals**

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 punctuations signalling such borders.\textsuperscript{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: a\textsuperscript{1} k\textsuperscript{2} o\textsuperscript{2} r\textsuperscript{3} wux\textsuperscript{4}? 'Is\textsuperscript{2} the\textsuperscript{3} book\textsuperscript{4} (here there)?' or la\textsuperscript{1} kawax\textsuperscript{2} sub\textsuperscript{2}? 'Do you want\textsuperscript{2} tamalitos?\textsuperscript{3,1}' 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 xas\textsuperscript{e} 'why?', xawixe\textsuperscript{9} 'where?', xačike 'what?', xačin 'who?', etc. These morphemes, like a and la, occur always is 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 \textsuperscript{1} is suffix \textsuperscript{-}o/-u, possibly indicating 'indicative mode', and occurs with verbs of class \textsuperscript{1} 'transitive stems'. Morphemes \textsuperscript{2} and \textsuperscript{3} are -oq and -i\textsuperscript{k} respectively. -oq indicates 'imperative mode' with 'intransitive', 'stative', and 'passive' stems; -i\textsuperscript{k} is a terminal morph with no readily definable meaning.\textsuperscript{6} The interesting thing about

\textsuperscript{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.

\textsuperscript{6} -i\textsuperscript{k} 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 -i\textsuperscript{k} occurring in any position within a clause (any position in which the infinitive or participle may occur). This does not invalidate the importance of -i\textsuperscript{k} as a "pause
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 šuban2 ri3 aci4? 'What1 did2 the3 man4 do5?,' the verb šuban 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 aci4) so that the clause terminates with the verb, we must suffix -o to the verb: xas1 šubano5. 'What1 did he do5?' 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: šril1, šuk2am2 bic3. 'He saw it1 (and) he carried it2 away3.' However, if there is no pause, the -o8 is dropped: šril1 jun2 če23. '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 kinban6—xas4 či5 kinban6 čenim7, nan8. 'What1 then2 shall I do3—what4 then5 shall I do6 just now7, ma'am8?'

The following are some examples with morphemes #2 -oq and #3 -ik: čatwaraq! 'Sleep!' but, čatwar1 pucil2. 'Sleep1 well2!' And again, čatwaliq! 'Get up!' but, čatwalix1 pa2 ra3 č?at4! '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: šporotaxi? 'It's been burned.' but, šporotax1 kan2 ri3 wux4. 'The3 paper4 has been burned1 (and remains so1)' In these examples -ik occurs sentence-final. In the following example -ik marks both tentative and final pause: ya1 šk?is2 ri3 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 waral2, Lu23! xas4 šubano5 ri6 aci7 ri8 šinwilo9 q?abarel10 k?o11 pa12 ri13 be14? a15 špeti16 ri17 guardia18? a19 škami19 ri21 aci22 ri23 k?o24 pa25 be26? The writer wishes to say: 'Come1 here2, Peter3. What4 did5 the5 man7 do6 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! waral2, Lu23. xas4 šubano5? ri6 aci7 ri8 šinwilo9. q?abarel10 k?o11 pa12

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.
ri₁³ be₁⁴ —a₁⁵ špetik₁⁶? ri₁⁷ guardia₁⁸—a₁⁹ škamik₂₀? ri₂¹ ači₂² ri₂⁸ k’o₂⁴ pa₂⁵ be₂⁶—’Come₁! Here₅, Peter₃. What₄ happened⁵? I saw⁹ this₆.₈ man⁷. He was₃¹ there in₁² the₁³ road₁⁴ drunk₁⁰. Did he come₁⁶? The¹⁷ police₁⁸—He died₂⁰? This²¹.²³ man²² was²⁴ in²⁶ 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 period,⁹ even in contexts where the overt signals are lacking.

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

še₁ ri² ači³/ šucukux⁴ ru⁵ k’oxol⁶ pa⁷ k’ayibal⁸ šuriq⁹ šuriq¹⁰ ru¹¹ k’oxol¹² čila²³ xas¹⁴ kaban¹⁵ wara¹⁶ šubix¹⁷ ru¹⁸ tat¹⁹ če²⁰/ man²¹ k’o²² ta²³ kinbano²⁴ šča²⁵ čatwaliq¹⁶ šča²⁷ xat²⁸ čo²⁹ xa³⁰ šča³¹ a³² cawax³⁵ xun³⁶ q’abax³⁸ xat³⁶ čanim³⁷ čo³⁸ xa³⁹ ri⁴⁰ 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 in italics wherever possible:

še₁ ri² ači³/ šucukux⁴ ru⁵ k’oxol⁶ pa⁷ k’ayibal⁸/ šuriq⁹/ šuriq¹⁰ ru¹¹ k’oxol¹² čila²³/ xas¹⁴ kaban¹⁵ wara¹⁶/ šubix¹⁷ ru¹⁸/ tat¹⁹ če²⁰/ man²¹ k’o²² ta²³ kinbano²⁴/ šča²⁵/ čatwaliq²⁶/ šča²⁷/ xat²⁸ čo²⁹ xa³⁰/ šča³¹/ a³² cawax³⁵ xun³⁶ q’abax³⁸/ xat³⁶ čanim³⁷ čo³⁸ xa³⁹/ ri⁴⁰ minkox⁴¹ xun⁴² q’abax⁴³ čawe⁴⁴/ ‘The² man³ left¹. He searched for⁴ his⁶ son⁶ in⁷ the market⁸. He found him⁹. He found¹⁰ his¹¹ son¹² there¹³. ‘What¹⁴ are you doing¹⁵ here¹⁶?’ his¹⁸ father¹⁹ said¹⁷ to him²⁰. ‘I’m²⁴ not²¹.²³ doing²⁴ anything²²;’ he said²⁵. ‘Get up²⁶!’ he said²⁷. ‘Get yourself²⁸ home²⁹.³⁰!’ he said³¹. ‘Do you want³² a³³ slap³⁶? Get³⁶ home³⁸.³⁹ right now³⁷, lest⁴⁰ I give⁴¹ you⁴⁴ a⁴² slap⁴³!’”

The first pause comes at the end of a simple clause, words 1-3 (see first part of this paper clause level syntactic signals). The second pause is signalled by the location spot (7-8). Terminal morpheme -o signals the next break (9). čila² (13) fills another location spot, indicating a pause. xas (14) is an interrogative and marks the beginning of an utterance, while wara₁ (16) is locational, signalling the termination of the same utterance. Pause group (17-20) is terminated by a locational če (20). The break

⁹As 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.)
after group (21-24) is indicated by ordering of the major spots, and the same
may be said for the pause following šča² (25). Terminal morpheme -oq signals
the next break (26), and šča² (27) another. čo xa (29-30) fills a location spot,
indicating a pause, and šča² (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.

Conclusion

As one would expect, this system of structural signals is not without its defi-
ciencies 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 -iš 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 punctua-
tion.

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.

Guatemala