Some Complement Constructions of the

Crow Indian Language

by

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ABSTRACT

This thesis deals primarily with the reflexive construction and with verbal complements of the Crow language. There are also a few descriptive statements about sentential complements. In the section on reflexives, evidence is presented to support the conclusion that the reflexive construction is derived by a transformation from a transitive sentence with coreferential subject and object. The hypothesis that the reflexive verb forms are lexically derived is shown to be untenable.

Three different types of verbal complements are discussed, and it is shown that these are adequately described by means of a transformation, Raising, and the subcategorization of complement-taking verbs as to whether they require their subjects to be coreferential with that of their complements. The effect of Raising is simply to reclassify the complement sentence as a non-sentence.

In addition to these main sections there are three others: The Siouan Languages gives an outline of the geneology and the past and present location of the Siouan languages. Orthography-Phonology gives an outline of the basic phonemic structure of Crow and the way in which the sounds are represented in the spelling system. Outline of Crow Grammatical Constructions contains a descriptive sketch of the surface structure of Crow sentences.

Thesis supervisor: G. Hubert Matthews
Title: Professor of Linguistics

I dedicate this to all of the children of the Crow Indians, in whom we entrust the future of the Crow Tribe of Indians of Montana.

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Introduction

This thesis represents a beginning of syntactic studies of the Crow language from a generative theory of language structure. I decided that the best place to begin such a study would be in the verb complement system because this is involved in so much of everyday conversational Crow and it is necessary to have some understanding of it before we can investigate with any confidence most any other part of Crow syntax. It also leads directly into a discussion of such basic simple sentence transformations as the transformations as the reflexive and raising.

A number of people were very helpful to me in the preparation of this thesis. Those who were especially generous in contributing their time and energies were Dr. G. Hubert Matthews, who gave me this opportunity and who was very helpful with his insightful discussions of the thesis; Avery Andrews who gave me many suggestions, a number of which were fruitful; George Reed, Jr., my cohort, who in times of confusion gave me confidence in my utterances of Crow forms; Henry Old Coyote and Barney Old Coyote who gave me valuable assistance in obtaining funding; the Bureau of Indian Affairs for providing the funds which made the project possible; my parents, Mr. and Mrs. Allen Old Horn whose never ending confidence and guidance I cherish; and my wife, Mryna, who gave me companionship and assistance and who bolstered my confidence.

The Siouan Languages

The Crow language belongs to the Crow-Hidatsa subfamily of the Siouan family of languages. This subfamily is also referred to as Missouri (River) Siouan in some of the literature on comparative Siouan. Three other subfamilies of the Siouan languages are Mandon, Mississippi (Valley) Siouan, and Ohio (Valley) Siouan. A corollary of a recent paper by Matthews (1970) is that on the basis of shared innovations alone it makes little sense to group these four subfamilies into a smaller number of groups. There is one other group of Siouan languages known as Eastern Siouan, but it is not known in just what way this group is related to the other subfamilies. It has been suggested that it constitutes a fifth subfamily on the same level as the other four, but it has also been suggested that it split off from the main body of Siouan, which later split into the other four subfamilies.

The Eastern Siouan dialects were spoken in the Carolinas, and these have been regarded as extinct since the death of Sam Blue, a Catawba speaker, in the middle 1950's. However, Red Thunder Cloud, who lives in New York City, does speak a fair amount of Catawba (Matthews and Red Thunder Cloud), and there is a good chance that several people related to the late Pinckney Head of Farmington New Mexico also speak it. A fair number of Catawbs moved to Utah in the 1880's and about a hundred of their descendents live today in and about Sanford Colorado, Cedar City Utah, and Farmington New Mexico (Milling, Matthews 1974a).

The Ohio Siouan languages, all extinct, are represented by Biloxi, Ofo, and Tutelo. Tutelo is one of a number of related dialects which

were spoken in western Virginia, and at least one person living on the St. Regis Reservation in New York knew some Tutelo songs and words in the 1950's (Matthews 1974b). The Tutelos moved north and were adopted by the Cayugas in 1753. Niloxi was spoken near Biloxi Mississippi in the 1890's (Dorsey), but this was certainly not the original homeland of the Biloxi Indians, for at that time they were moving west and ended up in Texas. Ofo was spoken in central Mississippi.

For the languages cited below, the number of speakers, obtained from Chafe, is given in parentheses following the language name. The Mississippi Siouan languages are divided into three branches. Dhegiha is a group of closely related dialects known as Omaha-Ponca (1000-4000), Osage (100-400), Kansa or Kaw (10-100), and Kwapa (less than 10) (also spelled Quapaw in some of the literature), spoken in the southern plains and, today, also in Oklahoma. The Chiwere group consists of two languages, Winnebago (1000-2000) spoken in Wisconsin and, today, also in Nebraska, and the closely related dialects Ioway, Oto, and Missouri. Ioway (100-200) and Oto (100-500) were spoken in Iowa but today Nebraska, Kansas, and Oklahoma, and Missouri was spoken in Missouri but is no longer spoken today. The third branch consists of the closely related dialects, Santee or Dakota (3000-5000), Teton or Lakota (10,000-15,000), Yankton or Nakota (1000-2000), Assiniboine (1000-2000), and Stoney, all spoken in the northern plains. Some field workers consider Stoney to be different enough from the others to constitute a separate language (Harbeck). Santee, Taton, and Yankon are often referred to collectively as Sioux.

Mandan (less than 10) is spoken in North Dakota.

Missouri Siouan consists of two closely related languages, Crow (3000) and Hidatsa (500-1000). Hidatsa is one of several dialects that were spoken in North Dakota and the only one still spoken. Crow is spoken by more than five thousand people in southeastern Montana. A fair number of Crows speak of a dialect spoken in Alberta which they can understand. Considering the migration routes of the Crow and Hidatsa this is certainly possible, but no more than this is known of it.

Orthography - Phonology

The seven obstruents in Crow include three stops p, t, and k, one affricate ch, and three continuants s, sh, and x; p is bilabial, t and s are dental, ch and sh are palatal-alveolar, k is velar, and x is post-velar or pharyngeal. Intervocalically, the obstruents are voiced, otherwise they are voiceless, and the stops and the affricate are aspirated when they are initial or follow an identical obstruent. (Phonologically, palatal-alveolars are never preceded by dentals. When such a cluster appears in the orthography, the dental represents the corresponding palatal-alveolar.) When following some enclitics, which are often not written as separate words, intervocalic obstruents behave as if they were initial with respect to voicing and in some cases also aspiration. However, this is one of the aspects of Crow phonology in which there are regional and individual differences as to which enclitics are involved, and as to whether or not aspiration as well as voicing is blocked by them. The velar stop is followed by a palatal offglide whenever it is preceded by a palatal-alveolar obstruent, by a front vowel, or by an h which is preceded by a front vowel (Kaschube, Matthews 1973); and in addition it is fronted to palatal position when it is followed by a front vowel (Gordon 1972).

It will be noted that there is a close relationship between the dental and the palatal-alveolar obstruents. In general, whenever through morphophonemic alternations an underlying palatal-alveolar obstruent comes before a morpheme-initial low vowel, it is replaced by the corresponding dental. From the structuralist point of view, however, these

cannot be regarded as allophonic variations, for this change occurs also before certain other morphemes, and there are a certain number of occurrences of dental obstruents before non-low vowels and palatal-alveolar obstruents before low vowels within morphemes. Investigations into the morphophonemics of Crow indicates that rules are required which would make an underlying distinction between dental and palatal-alveolar obstruents unnecessary. However, such is possible only if we give up the prohibition against unrestrained merger, something we feel would be completely wrong to do in this case.

Of the two laryngeal sonorants, h and ?, the ? has a highly restricted distribution. It constitutes the complete phonological representation of one morpheme - the interrogative performative, - and does not otherwise occur. Furthermore, this morpheme occurs only at the ends of words, although it may be followed by enclitics, which are written as separate words. The other two sonorants occur in bilabial and dental positions. Each of these have three allophones, which are differently represented in the orthography; w and l - a lateral tap - occur intervocalically, b and d occur following obstruents, and m and n occur finally and adjacent to sonorants. In initial position, the stop and nasal allophones are in free variation, but only the stop is written in this position.

Vowels are either long or short, and length is indicated by a sequence of identical vowels. The short vowels i, a, and u are lax. The short mid vowels e and o are usually lax before consonant clusters that contain an obstruent, but there are some exceptions to this. In word final position, all vowels are phonetically short - though underlying

length is orthographically indicated, - and the mid vowels are phonetically low. All other vowels are tense.

In general, there is one stressed syllable in each word, although some unstressed enclitics are written as separate words. Some stressed long vowels are falling (pitch) stressed; all other stressed vowels are high (pitch) stressed. High stress is indicated by an accent on a short vowel or on the second of identical vowels, and falling stress is indicated by an accent on the first of identical vowels. Among unaccented vowels, there is no distinction between high and falling pitch, and their pitch is determined by the following rule: Starting with the stressed syllable, which is high or falling as just described, all syllables back to the first long vowel of the word are high pitched, and all syllables preceding the first long vowel, as well as all syllables following the stressed vowel are low pitched.

There are two underlying unit vowels ia and ua which are phonetically as well as orthographically diphthongs. When these vowels are falling stressed, the accent is placed over the first vowel graph; and when they are high stressed it is placed over the second graph, i.e., the a. With respect to the pitch contour of the word, these diphthongs, with one exception, are long vowels, and like all other surface diphthongs, the first vowel is long and carries the syllable peak, and the second vowel is short and non-syllabic. The one exception is that the diphthong ia, when it is derived historically from a high front vowel that precedes x, functions as a short vowel and has the syllable peak on the second vowel, which is short and lax, and a non-syllabic first vowel, which in the speech of some individuals is not pronounced at all.

Outline of Crow Grammatical Constructions

Crow is a typical SOV language: The possessive morphology is added to the possessed noun;

Joesh kooapté = Joe's liver
biiwapté = my liver
baakáatam isbúupche = the child's ball
búupchim = a ball

postpositions are used to indicate relational cases;

awaasúua áakeen = on top of the house
awaasúua = house
awushé = cave
awushé awúuash = into the cave
Chichúcheesh = to Hardin
Chichúche = Hardin

subordinate conjunctions follow the clause they subordinate;

xalússhi = run
Joesh xalússhilak = if Joe runs
duushí = eat
Marysh baaluusák = while Mary was eating

and dependent clauses predede their antecedents.

Joesh Tom baaluushík hilichik = Joe thought Tom ate.
Joesh xalússhe ítchik = Joe runs good.
Tom ahnuushít Marysh baaluushíssaaik = When Tom eats a lot, Mary doesn't eat.
Xalússhilak Joesh áakhiik = If Joe ran, then he arrived on time.

One way in which Crow might be atypical is that one construction, which is commonly translated as a relative clause, follows the noun it modifies.

Húuleesh bacheém baáchuua ahúm duushík = The man ate a lot of chokecherries yesterday.
yesterday man chokecherry many eat

Bacheém húuleesh baáchuua ahúm akduushéesh baák = I met the man who yesterday ate a lot of chokecherries.

However, this construction may very well not be a genuine relative clause - it may be a noun derived from a sentence and used in apposition to the antecedent. Evidence for this analysis is that only the subject of the clause can be the identical noun in this construction. And there is another relative clause construction, which is formed by simply deleting the antecedent of the clause, and most any noun in the clause can be the identical noun.

Húuleesh bacheém baáchuua ahúm duushéesh baák = I met the man who yesterday ate a lot of chokecherries.

Joesh baáchuuom duushéesh chikúook = The chokecherries Joe ate were sweet.

The terms Instrument, Actor, Object, and Goal (upper case initials) refer to the cases of noun phrases, and are not in one-one correspondence with positions in constituent structure configurations. We use the terms subject and object (lower case initials) to refer to noun phrases with respect to their location in constituent structure, immediately dominated by the sentence node, and immediately dominated by the verb phrase node, respectively. The basic order of noun phrases within a clause is: Instrument, Actor, Object, Goal.

Íilaalee biilápxe basahkáate Joesh iiaahíik = My father took my sister by car to Joe.
car my father my sister Joe take

The verb follows these phrases and may be separated from them by a directional postpositional phrase which is closely allied with the verb, and the post-position is prefixed to the verb form.

Baawaaláache baaiihulishoopé áakassaawaak = I put the paper on the table.
paper table I put it on

Other postpositional phrases precede the verb phrase.

Chichúche koon Joesh baák = I met Joe in Hardin.

Time adverbs precede the noun phrases.

Húuleesh Joesh baaaashdeek = Joe went hunting yesterday.

Hinne baapé Baaxawúaashe koon isíilaalee chichíilik = He is looking for his car at Crow Agency today.
this day Crow Agency to his car look for

A scrambling rule allows for certain changes in this basic order up to ambiguity. Single word time adverbs and the postpositional and noun phrases may occur in most any order before the verb and its closely associated postpositional phrase, and in main clauses the subject may follow the verb.

The verb form in Crow contains a verb stem and this may be preceded and followed by a fair number of prefixes and suffixes. The suffixes carry tense and various manner adverbial meanings that modify the sense of the verb.

Ilúkam buúshbiik = I'll eat a piece of meat.

Buushík = I ate it.

Íipiakaate ilúkduushiiluk = Magpies eat meat.

Duusúuk = They ate it.

Billsh ilúkam appáahik = Bill gulped down a piece of meat.

Iluk álaxpe Marysh appaáhik = Mary ate up each of the pieces of left over meat.

Appéek = He swalled it.

Balám pummikaatak = The stick is very short.

Púmmik = It is short.

Joesh xalússheetak = Joe looks like he is running.

Xalússhik = He ran.

The plural morpheme is also suffixed and appears on the verb following the tense and adverbial suffixes when the Actor, a second or third person subject, or a second person object is plural.

Diiawákuuk = I saw you/We saw thee/We saw you.

Diiawákaak = I saw thee.

Xalússuuk = They ran.

Diitannaáuk = You are shivering.

The last suffix in the verb form indicates how the clause is sudordinated to another clause or phrase,

Joesh xalússak húuk = Joe came running

Hughsh xalússhilak áakhiiimmaachik = If Hugh runs, he'll arrive on time.

Áakhiik = He arrived on time.

Shikáakam baaluushíssaam alíishik = Since the boy didn't eat he is hungry.

Búupchim shíiwaachit baakáatam dútchiik = Whenever I throw the ball the child catches it.

Búupchim shíiwaachik = I threw the ball.

Búupchim dútchik = He caught the ball.

Joesh xalússhe ítchik = Joe runs good.

or if it is the main clause of the sentence, it indicates the performative.

John baaluushík = John ate.

Joesh baaluushísht = As a matter of fact Joe is eating.

Kukúwe duushíh = Eat the squash!

Mike baaluushí? = Did Mike eat?

The prefixes for the most part refer to the various noun phrases in the clause, and those that refer to the Actor, Object, and Goal also agree in person therewith, and in number with a first person Object or Goal. The order of these referring prefixes is: Instrument, Object, Goal, Actor, and a few stems actually infix or suffix the Actor prefix.

Balám iiliiwaalichík = I hit thee with a stick.

Diiwaalichík = I hit thee.

Baalichík = I hit him.

Dichík = He hit him.

Diishíiwaachik = I threw it to thee.

Diishíichik = He threw it to thee.

Diiwappeéwiimmaachik = I'll kill thee.
Biilappeéiimmaachik = He'll kill me.
Daappeé? = Did thou kill it?
Daáweek = He read it.
Daámmaak = I read it.

There can also be another prefix appearing before the Actor prefix that shows an additional relationship between the Actor and Object phrases.

Bihchwaalichík = I hit myself.
Chichúche diiaawaák = I brought thee to Hardin.
Chichúche koon diiwaák = I met thee in Hardin.

There is one verb stem kuú = give that orders these prefixes according to a different principle. With this verb the Goal phrase corresponds to the English indirect object, and the order of the prefixes is: Instrument, Object, third person Actor or Goal, first person Actor or Goal, second person Actor or Goal.

Biilákuk = Thou gave it to me.
Balákuk = I gave it to thee.
Bakúuk = We gave it to him/We gave it to them/They gave it to me.
Baleelákuuk = You gave it to us.

There are a few aspectual prefixes that precede the noun phrase referring prefixes and a semiproductive one that precedes the verb stem.

George húuk = George is coming.
Marysh kalahúuk = Mary is coming right now.
Homersh itbaaluushík = Homer is still eating.
Daksakshík = It fits in it properly.
Chilaksakshík = It went back into its proper place.
Chilassachík = He split it again.
Bisheéiichiile chilichík = He herded the cattle.
Dassachík = He split it.
Dichík = He hit him.

A verb is assigned to one of several classes according to the cases that its subject and objects take. Active verbs take a subject in the Actor case and may have one or two objects - the first in the Object case and the second in the Goal case. Stative verbs take a subject in the Object case; and a few stative verbs take an object in the Goal case although the examples of these are somewhat unclear. The person forms of the prefixes that refer to Actor, Object, and Goal phrases are given below. The actor prefixes are used to refer to Actor phrases, and the goal prefixes refer to both Object and Goal phrases. There is also some variation among these forms depending upon their morphological and phonological enviroment. However, in general, the vowel a is associated with actor, ii with goal, the consonant b with first person, d with second person, and the absence of a prefix with third person.

	actor	goal	
		singular	plural
1.	baa	bii	balee
2.	dáa	dii	dii

A noun phrase contains a noun stem and this may be preceded by a demonstrative or a possessor phrase and followed by the plural morpheme and an article.

hinne bishké = this (near me) dog hileen bishké = these dogs
eék bishké = that (near you) dog/those dogs
íilak bishké = that (farther away) dog ákian bishké = those dogs
koo bishké = that (not visible) dog/those dogs
baakáatam isbúupche = the child's ball(s)
bachéesh = the man/men
bacheém = a (specific) man bacheéum = some men
bachéem = a (non-specific) man bachéeom = some men
bachéet = any man/men
bachee = men (in general)

In clauses that end with the complementizer t, the indefinite non-specific forms bachéem and bachéeom are replaced by bachéet and bachéeot; and in certain other constructions, which we have not been able to characterize succinctly, they are replaced by bacheelák and bacheéolak.

Complements

This thesis is about dependent clauses that modify verbs and sentences. We view dependent clauses as parts of sentences which in themselves exhibit all or nearly all of the syntactic and morphological characteristics of complete sentences, but which also usually contain some feature - typically a subordinating morpheme - which makes it impossible for them to stand alone as complete sentences. It seems best, then, to think of a dependent clause as a sentence which has been altered in some way. In this view, it is not necessary to repeat the grammatical description of sentences when we describe dependent clauses. We need only state that they are sentences and refer to the grammar of independent clauses to describe them. The description of a dependent clause, then, is simply a statement of how it differs from a sentence, and this difference constitutes the subordinating element of the clause.

Once we have eliminated considerations of style, we see that there is no choice but to accept the fact that there is no limit to how long a sentence can be. Not only is there no maximum length, but there are no important limitations on the length of sentences of intermediate length either. Accordingly, the number of sentences of a language is infinite. At the same time, however, we must assume that the grammar of a language is finite, for after all we are finite beings. For these reasons, the grammar of a language contains recursion. But this recursion in language is not haphazard. It is all in the form of dependent clauses, which we pointed out above are essentially sentences with a subordinating element. And not only is the form of the recursive elements restricted, but also their relationships with other constituents in the clause. In the

grammer of Crow, there appears to be just two ways arboreally speaking in which a dependent clause can be related to the rest of the sentence. A dependent clause can modify a stem: The finite number of stems of the language is thereby augmented. Hence dependent clauses are not simply a device for making the number of sentences infinite; rather they function to make the number of stems unlimited in number. The other way in which a dependent clause can be used in a sentence is as a modifier of a tense or an aspect morpheme of another clause. These are the clauses that are commonly referred to as sentence complements, but it is our belief that these modify tense, aspect, and other modal elements of the superordinate clause, and thereby indefinitely extend the number of such elements.

One possible objection to this view, i.e., the view that all dependent clauses modify morphemes, and their function in language is to provide for an unlimited number of such morphemes as they modify, is that there never appears an antecedent for the relative clause. However, in order to account for the selectional restrictions between the nouns of such clauses and the superordinate clause, it is necessary to assume the presence of an antecedent in deep structure. In Crow the intransitive verb stem póśsee means to make the noise that firecrackers, trees in the winter, and certain breakfast cereals make. It just cannot take a human noun as its subject.

*Bíam póśseek
woman crack

This is not to mean that it is impossible to express the idea that a woman made this noise; rather it means that this is not the way to do it. The way it is done is by embedding the verb in a causitive construction.

Bíam póśseehchek = The woman made a cracking noise.

The subject position of the verb possee can be filled by a relative clause.

Balapáalim háchkeesh pósseek = The tall tree cracked.
Bacheém balapáalim íkeesh pósseek = The tree the man saw cracked.

In both of these sentences, the main verb póssee is understood to have the noun balapáalim as its subject, even though the occurrence of this noun in these sentences is the subject of háchka = tall or the object of íkaa = see. In addition, the following are not sentences.

*Bíam bacheém íkeesh pósseek
*Akéhcheesh pósseek
*Baaéhcheesh pósseek

The verb éhche = know cannot have as its subject or object any noun that can be the subject of póssee. The most straight-forward way of accounting for these facts is to say that a relative clause has an antecedent which is a part of the superordinate sentence, and that this antecedent must be identical in form and referrence to some noun in the deep structure of the relative clause. If this is the case, then relative clauses do not constitute an exception to the statement that all dependent clauses modify a morpheme of the superodinate clause.

Reflexives

Simple transitive sentences consist of a subject, an object, and a transitive verb. For example:

1. Joesh Marysh áasshuak = Joe spit on Mary.
   Joe Mary spit on

2. Joesh bacheém dichík = Joe hit a man.
   Joe a man hit

In these sentences, the subject is acting upon the object. The subject refers to the agent, the one that affects; the object refers to the affected one; and the verb states what the affect is. If we wish to express the idea that the one affected is the same as the agent, i.e., that the subject and object have the same referent, we might suppose that the same noun phrase would be used for both subject and object in a sentence with a transitive verb

3. Joesh Joesh dichík = Joe hit Joe.
   Joe Joe hit

However, this sentence does not mean what we expected. Instead it means that there are two different people named Joe, and that one of them hit the other. The idea that Joe hit himself is expressed by a rather different type of sentence; one in which the verb has a special prefix, but actually does not have an object. This special prefix is in fact present almost always when we want to express identity between the agent and the affected one with respect to a transitive verb, i.e., when the subject acts upon itself. We call this the reflexive prefix.

4. Joesh ihchilichík = Joe hit himself.
   Joe hit himself

5. Joesh ihcháasshuak = Joe spit on himself.
   Joe spit on himself

6. Joesh ihkalahóolik = Joe caught a whiff of himself.
   Joe catch a whiff of oneself

We note then that if a transitive verb doesn't have an object, it has the reflexive prefix; and there is always reference in a transitive sentence to both an agent and an affected one; if there is a reflexive prefix the one noun phrase refers to both individually and the prefix indicates that the two are the same individual. For these reasons we will derive reflexive sentences from an underlying form that actually contains both a subject and an object. In this way we can correlate the reference to an affected one with the presence - in deep structure - of an object phrase. Hence, in Crow, a transitive verb always has both a subject and an object in deep structure, and reflexive sentences are derived from those transitive sentences whose subjects are the same in form and reference, by the addition of the reflexive prefix and the deletion of the object phrase. We know that it is the object phrase which is deleted rather than the subject phrase, because a reflexive sentence is subject to the appositive relative clause transformation which is restricted to sentences with Actor phrases as their subject.

7. Bacheém bacheém dichík ⟶ Bacheém ihchilichík = A man hit himself.
   a man a man hit

   Bacheém akihchilichéesh awákaak = I saw a man who hit himself.
   a man who hit himself I saw himself.

The first and second person forms of the verb dichí = hit are:

8. Baalichík = I hit him.

   Bihchiwaalichík = I hit myself.

   Dáalichik = Thou hit him.

   Díhchilaalichik = Thou hit thyself.

Note in these forms that there are two morphemes that show person agreement with the subject (and deep object), and these are normal forms for these prefixes. This means that the reflexive prefix is not a noun phrase, for it appears among the verb prefixes, and it is not a prefix that shows agreement. Hence, it must be instead a morpheme that states a relation between the subject and object, viz., the identity relation.

We should note also that the several parts of complex sentences may also undergo the reflexive transformation.

9. Joesh ihchilitáak ihchilappeék = Joe hit and killed himself.
   Joe hit himself kill himself

10. Joesh ihchilichíssaalak uá kóon dichík = If Joe did not hit himself then his wife hit him.
    Joe if not hit himself wife she hit

It might be suggested that the reflexive prefix is actually a derivational prefix which derives intransitive verb stems from transitive verbs. This means that stems such as ihchilichí would be derived in the lexicon and inserted in a phrase structure in place of a verb that does not have an object phrase. This analysis, however, raises the question of why the subject and object in transitive sentences cannot have the same referent. Presumably, this could be accomplished in the semantic component of the grammar, or more likely there is a universal principle which covers this restriction in Crow: The referents of the subject and object of a sentence cannot even overlap in many languages.

11. *We played with me.

    *They look at them in the mirror. (where one of the they's is also one of the them's)

But consider the first and second person reflexive forms: These forms have two different morphemes that agree in person with the subject. In

bihchiwaalichí there is the first person subject referring prefix waa which has the same form that it does with the transitive verb dichí. We also have a b which is also first person and has the position in the word and a form that an object prefix takes. If ihchilichí is an intransitive stem derived in the lexicon, them we would have to say of just these reflexive stems that the person of the subject is marked twice, and these would be the only verb stems that have this characteristic. But if the deep structure of bihchiwaalichí has both a subject and object, then the presence of prefixes referring to them is not at all mysterious. There is also the problem of ihchipúa, which intuitively contains the reflexive morpheme even though it never occurs without it, but has only one subject referring morpheme, Bihchipúak = I jumped. We have no explanation why ihchipúa and ihchilichí behave differently with respect to person agreement morphemes, if reflexive forms are all derived in the lexicon. For these reasons we believe that the use of a syntactic transformation is the proper way to derive reflexive sentences; especially since the nature of the semantic component and the lexicon are largely unknown.

Some verbs take sentences as their objects. For example:

12. Joesh Billsh Marysh dichík hiliachik = Joe thought Bill hit
    Joe Bill Mary hit think Mary.

13. Joesh Marysh bacheém alapeék hek = Joe said that Mary kicked
    Joe Mary a man kick say a man.

Reflexive sentences can also function as the complements of these verbs.

14. Marysh Joesh ihchawaxik hiliachik = Mary thought Joe cut
    Mary Joe cut himself think himself.

In these sentences, the object of the main verb, hiliachi or he, is itself a sentence consisting of a subject, object, and verb, and it

appears in front of the main verb where objects normally appear. Suppose now that we wish to express the idea that Joe thinks that he, himself, did something. Given the general correlation between the functions of noun phrases and their positions in sentences, we should expect the following to express this idea.

15. Joesh Joesh Billsh dichík hiliachik = Joe thought that Joe hit Bill.

But this sentence does not mean what we expected; rather it means that there are two people named Joe and one thought the other did something. Since we met with this same situation in sentence 3 above, - there is a distinct referent for each noun phrase of the sentence even though some of them might be identical in form, - and found what we sought in a reflexive sentence, we might try the same solution this time.

16. Joesh Billsh ihchilichík hiliachik = Joe thought Bill hit himself.

17. Joesh Billsh dichík ihchiliachik

We see that sentence 16 does not mean what we expected, and 17 is not a sentence. The only way in which we can express the idea of sentence 15 where the two identical noun phrases refer to the same individual is as follows.

18. Joesh Billsh dichík hiliachik = Joe thought he hit Bill.

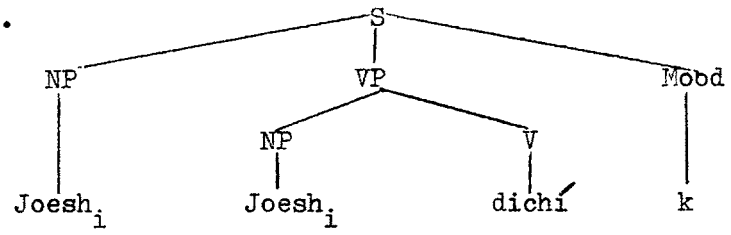
We see then that an underlying identity of reference of the subject of a sentence and the subject of its verb complement is not expressed by means of the reflexive prefix. This shows that the reflexive transformation does not always apply even when the underlying phrases are identical in reference and adjacent to each other.

19. Joesh Billsh dichík hiliachik = Joe thought Bill hit him (i.e., Joe).

Sentence 19 - with surface identity to 18 - also shows that underlying identity in reference is not enough in order for the reflexive transformation to apply, even when as in this case, one of the phrases is a subject and the other an object. We conclude that in order for the reflexive transformation to apply, there must be two coreferent noun phrases within the same simplex sentence, i.e., they must be the subject and the object of the same verb.

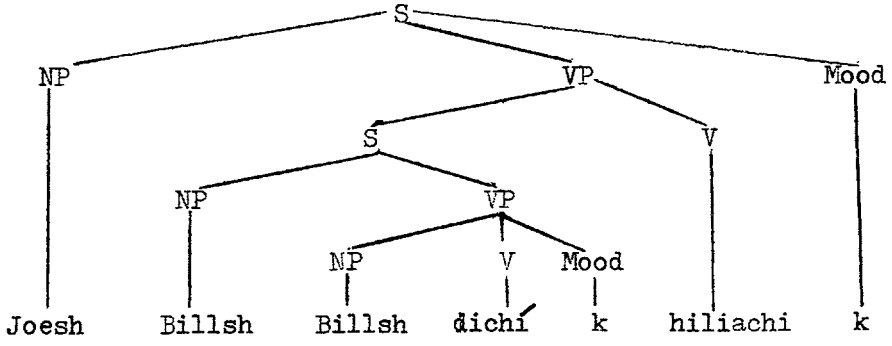
The structure of sentence 3 can be represented by a tree as follows:

20.



When the reflexive transformation is applied, the object noun phrase is replaced by the reflexive morpheme, which is a verb prefix with the underlying form ihchi, and subject to a morphological rule that changes it to ihka in front of stems that begin with certain syllables. We noted also that embedded sentences are subject to the reflexive transformation. Sentence 16 has the following structure:

21.



We see then that the embedded sentence of 21 has the same structure as does 20.

So the proposed rule applies to both embedded clauses and main clauses.

22. $[NP_i$ NP_i $V]_S$

1 2 3 4

1 ihchi 3 4

Verb Complements

In the preceding section, we saw some verb stems that take complete sentences as their objects.

1. Joesh xalússhik hek = He said Joe ran.
   Joe ran say
2. Marysh ihchipúak baliachik = I think Mary jumped.
   Mary jump I think
3. Joesh xalússhik = Joe ran.
4. Marysh ihchipúak = Mary jumped.

Sentences 3 and 4, and presumably the complement sentences of 1 and 2 end with the declarative performative morpheme. But not all complements of verbs end with the declarative morpheme. In this section, we will examine some verbs which take complements that take no clausal suffix at all. We consider first the verb stem hche = cause, the forms of which are phonologically suffixed to the object.

5. Bishkám bíam xalússhihchek = A dog caused a woman to run.
   dog woman cause to run

The complement in the sentence is

6. bíam xalússhi

where xalússhi = run is the verb stem, and there is no complementizer between it and the main verb hche. The following sentences show the person and number forms of hche.

7. Iishbíiwishkam xalússhihchek = He caused a cat to run.
8. Ísukaatam xalússhihkuuk = They caused a mouse to run.
9. Bíam xalússhiwahchek = I caused a woman to run.
10. Bacheém xalússhiwahkuuk = We caused a man to run.
11. Baaaphách kam xalússhilahchek = You caused an elephant to run.
12. Baaáaphachkam xalússhilahkuuk = You caused a giraffe to run.

We now look at some evidence that indicates that there must be a rule that destroys the sentencehood of the complements of hche, and raises the subject phrase and verb phrase into the main verb phrase. Consider the following sentences.

13. Baaxalússhik = I ran.
14. Daxálusshik = You ran.
15. Xalússhik = He ran.

In these simple sentences, the main verb is xalússhi = run and the subject is indicated by the prefixes baa, da, and ∅. However, when these sentences are embedded as the complement of hche, the prefixes that refer to the subject of xalússhi are replaced by the corresponding goal prefixes bii, dii, and ∅.

16. Biixalússhihchek = He caused me to run.
17. Diixalússhihchek = He caused you to run.
18. Xalússhilahchek = You caused him to run.

This change from the actor prefixes to the goal prefixes also takes place when transitive sentences are embedded as the complement of hche.

19. Bachuuké batchéek = I gave away my younger brother.
    my younger brother I gave away
20. Biiké bachuuké biikéehchek = My older brother caused me to give away my younger brother.

Note that the verb kéé = give away takes the suppletive stem tchée when it occurs with the first or second person actor prefixes. There is also a difference in the ordering of the prefixes that refer to the nouns of the complement sentence. In simple sentences the object prefix precedes the subject prefix.

21. Biilátchek = You gave me away.
22. Diiwatchék = I gave you away.

When a transitive sentence is embedded as a complement of hche, however, these two prefixes can appear in either order.

23. Diiwiikéehchek
24. Biiliikéehchek

} = { He made you give me away. / He made me give you away.

That is, both sentences 23 and 24 have the same meanings. Note that in these respects the complements of hiliachi are like simple sentences rather than like the complements of hche.

25. Gailsh biilátcheek hiliachik = Gail thinks you gave me away.

In the previous section, we showed that in a complex sentence when the main verb is hiliachi and the subject of hiliachi is coreferent with a noun of the embedded sentence, we do not get the reflexive morpheme, instead ordinary pronominalization applies. But this is not the case when the main verb is hche, which the following sentence shows.

26. Joesh ichuuké (his younger brother) ihchikéehchek = Joe had himself given away by his nephew/Joe had his nephew give himself away.

The differences between simple sentences and the complements of hiliachi on the one hand and the complements of hche on the other, in the forms of the subject prefix, the order of the prefixes, and the occurrence of the reflexive prefix, can be explained if we postilate a raising rule. By a raising rule, we mean a rule that moves the subject phrase and the verb phrase of a verb complement into the verb phrase of the main clause. Then, being in a verb phrase, and thus counted as an object it is referred to by a goal prefix. Since the subject and object of the embedded sentence is now in the same simplex sentence as the subject of the main verb, the identity relation necessary in the structural analysis of the reflexive transformation can involve the main subject with the object of the embedded

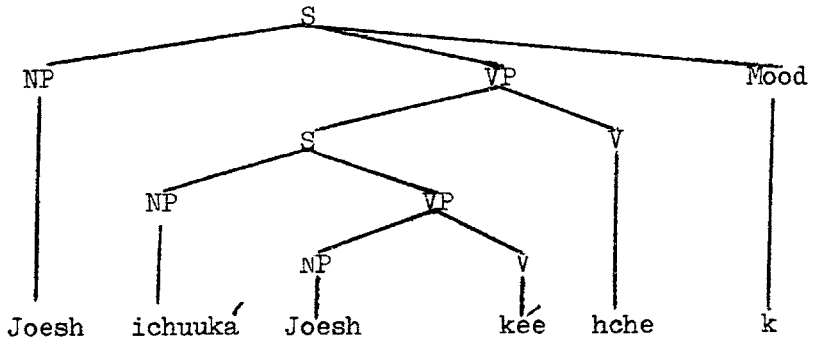
verb. The raising transformation is

27.

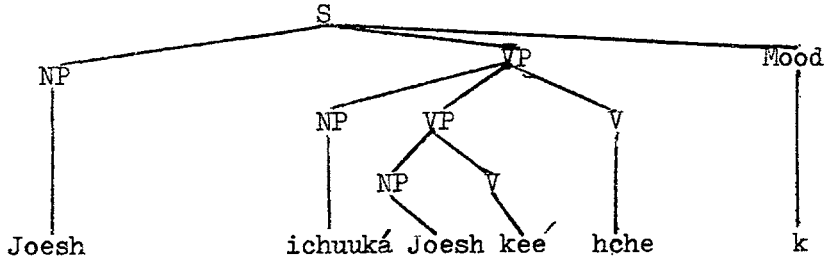
[NP	[NP	VP]	S	[V]	S
1	2	3	4	5	6
1	2	3	4	5	6

This rule changes tree 28, which represents the structure of one of the interpretations given above for sentence 26, into tree 29.

28.

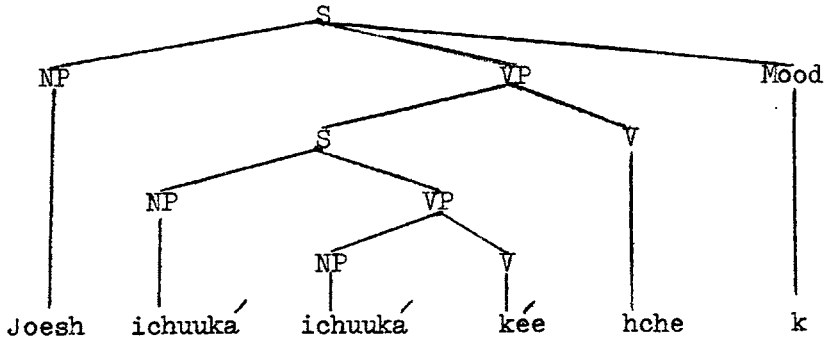


29.



The other interpretation of sentence 26 is represented by the following tree.

30.



We must now change the reflexive transformation so that will apply to 29 and 30 and give the correct output, i.e., sentence 26.

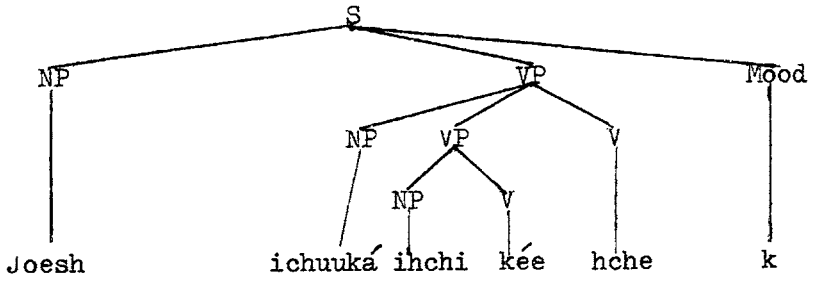
31. $\boxed{\text{NP}_i}$ (NP) NP_i $\boxed{\text{V}}$ S

1 2 3 4 5

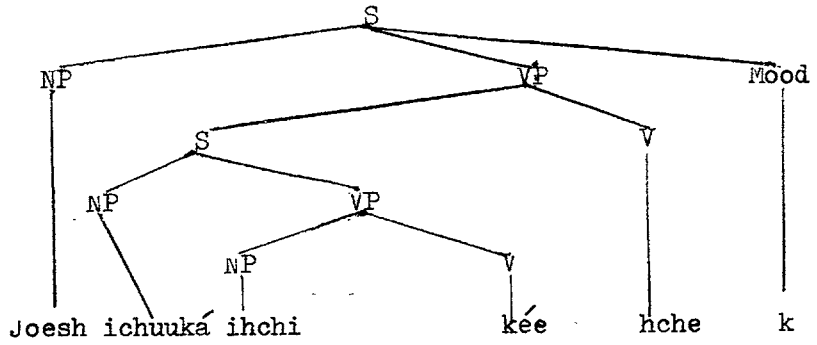
1 2 3 4 5

This rule changes 29 into 32 and 30 into 33.

32.



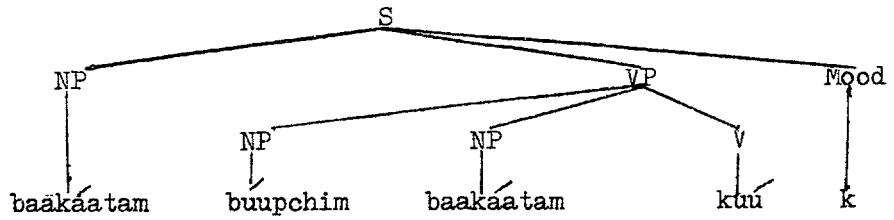
33.



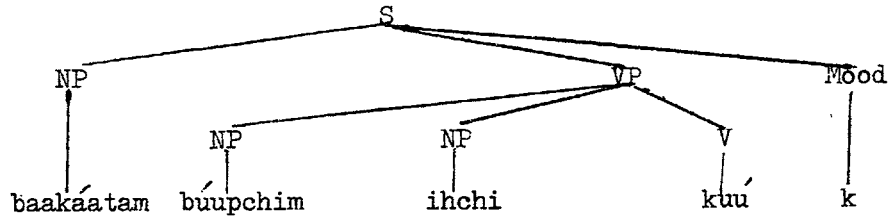
We note now that rule 31, the revised reflexive rule, also applies to simple sentences that have two noun phrases in the verb phrase. The underlying structure of sentence 34 is represented by tree 35, and its surface structure produced by rule 31, is represented by tree 36. Note that 34 is not ambiguous, the reflexive refers to the identity of the subject and the indirect object. The identity of any other pair of noun phrases in a sentence with this verb cannot be expressed through the use of the reflexive.

34. Baakáatam búupchim ihchikuúk = A child gave a ball to himself.

35.



36.



We now discuss the verb stem biá = want. This stem also takes a complement sentence in object position without any subordinating morpheme. But consider first the ungrammatical strings

37. *bíam shíitdeek
woman become too long

38. *bíam shíitdeewiak
woman want it to become too long

We have translated shíitdee as too long in these examples, but it is actually more accurate to translate it as become longer than usual. Sentence 37 is ungrammatical because shíitdee can take only an inanimate noun as its subject. In sentnece 38, bíam is the subject of biá, and so this restriction on the subjects of shíitdee does not explain the ungrammaticalness of 38. We might suppose that this could be explained by saying that the subject of shíitdee in 38 is taken to be the same as that of biá, i.e., that 38 comes from 39.

39. *bíam bíam shíitdeewiak

and that the second bíam is deleted by pronominalization. String 38 is then ungrammatical because its underlying structure presents bíam as the

subject of shíitdee. But if this is the right explanation, then we would expect 40 to be grammatical, for xalússhi = run can take bishkám as its subject, and pronominalization would naturally not apply.

40. *bíam bishkám xalússhiwiak
woman dog want to run

But 40 is not grammatical either. The ungrammaticalness of 38, and 40 as well, can be explained by stating that the subject of the verb biá must be identical to that of its complement. Since xalússhi is an intransitive verb it can have a subject but not an object; and since its subject must be identical to that of the verb biá, and hence deleted by pronominalization, there can be only one noun phrase in a sentence with xalússhiwia = want to run. This necessity of the identity of the subjects of both biá and its complement also explains why if biá is marked for person, then the verb of its complement must be marked for the same person, and if either is unmarked for person then so must be the other. Any other combination of person prefixes results in a non-word.

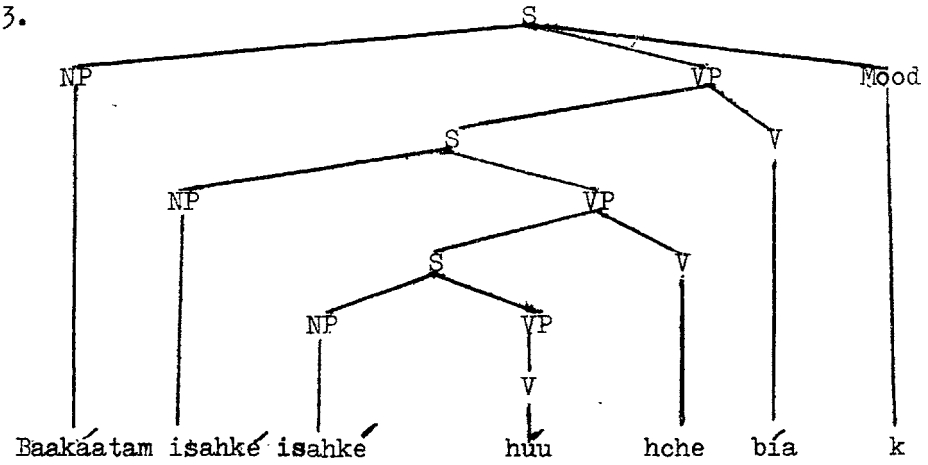
41. Xalússhiwiak = He wants to run.
*Baaxalússhiwiak
Baaxalússhiwiawaak = I want to run.
*Daxálusshiwiawaak
*Xalússhiwialaak
Daxálusshiwialaak = You want to run.

We point out here that if one wishes to express the idea of wanting an event to take place, the like-subject constraint still holds with respect to biá. This idea is expressed by embedding a sentence whose main verb is hche as the complement of biá.

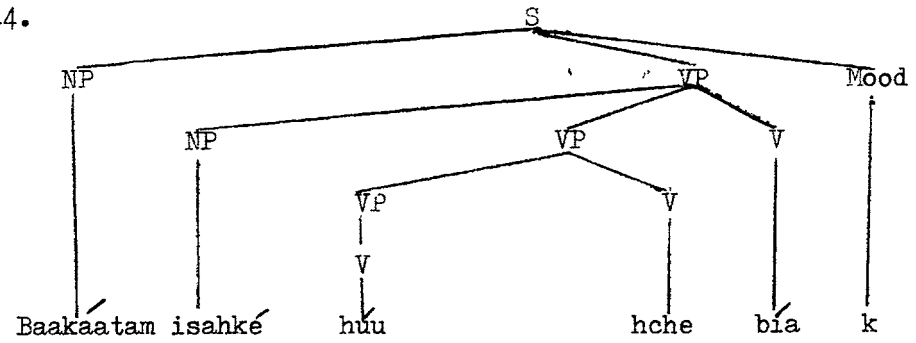
42. Baakáatam isahké húuhchewiak = The child wants
child his mother want to cause to come his mother to come.

The underlying structure of this sentence is represented by tree 43, and its surface structure by tree 44.

43.



44.



But note that sentence 42 does not contain the semantic notion of the causitive, which is usually associated with the verb hche. This is further illustrated by sentence 45 in which the stem alée = hot refers to the weather, and cannot be caused by anyone. Sentence 46 is syntactically embedded in 45, but it is not sematically so.

45. Aléehchewiak = He wants it to be hot.
46. Aléehchek = It caused it to be hot.

We see then that bía has the same structural properties as does hche except that is also subject to the like-subject constraint, and hence

pronominalization always applies to delete the subject of its complement sentence.

Sentence complements

There are two sentence complements whose complementizers are similar in meaning, and can usually be translated into English with the conjunction and.

1. Ú baakuhpáak = His wife is sick.
   wife sick
2. Ú baakuhpáak bihchammáleetak
   wife sick I am helpless
3. Ú baakuhpáam bihchammáleetak

} = His wife is sick and I can't do anything about it.

The two complementizers ak and m differ in meaning in that ak indicates a much closer connection between the two propositions. Sentence 2, for instance, might be said by a doctor who might want to and be expected to be able to do something about it. In most cases, a better translation for the ak-complement would be the English absolute construction, but it would be poor style to do so, for English usually replaces this construction with the more unmarked ordinary coordinate conjunction, whereas Crow is more exact in its phraseology in this case.

As stated above, the ak and m clauses are sentence complements, i.e., dependent clauses, rather than the two clauses being coordinate. The main evidence for this is that backward pronominalization is permitted. Thus, for example, we have sentences 4, 5, 6, and 7.

4. Joesh bilápam dappeém duushík
   Joe beaver kill eat
5. Bilápam dappeém Joesh duushík
6. Dappeém Joesh bilápam duushík
7. Joesh dappeém bilápam duushík

} = Joe killed and ate a beaver.

One might argue that these sentences do not illustrate different possibilities of pronominalization, but rather scrambling. To be sure, scrambling is a feature of Crow syntax; but if there is no backward pronominamlziation in sentence 5, for example, Joesh wouls have to have scrambled to the right of dappeém or into the main clause. We know that scrambling a phrase out of its clause is quite rare among languages that have been studied linguistically, and we feel that it is less elegant to allow it in Crow than it is to consider the ak and m clauses subordinate to the main clause. If on the other hand we say that Joesh is still in its original clause, then we would have to say the same for bilápam in sentences 6 and 7. But this would mean that these clauses allow the object to scramble to the right of the verb, something which does not happen even in main clauses. Accordingly, we feel that backward pronominalization is the proper explanation for the differences in word order of these sentences, and hence the m clause must be dependent, which corresponds with our intuitions.

The ak-complement appears to be involved in a construction that is used to express the conjunction of subject phrases.

8. Joesh awáxpak baaléek = Joe and I went together.
   Joe I am with him I went

However, this is not the same construction in spite of the fact that it is phonologically identical to the ak construction. The differences are: 1) The subject of the verb áxpa must be the same as that of the main verb. In the case of the standard ak construction the closeness of the connection between the two propositions indicated by the complementizer is such that it is quite difficult to construct

sentences in which the underlying subjects of the two clauses are different. However, it is not impossible as is shown by sentence 2. With the accompaniment ak-phrase, however, it is impossible.

9. George awáxpak Marysh baalichík = George and I
George I am with him Mary I hit hit Mary.

10. *Marysh George awáxpak baleelichík
Mary George I am with him she hit us

2) The ak-phrase must immediately follow the subject of the main verb.

11. Marysh Joesh áxpak Chichúcheesh déek = Mary and Joe
Mary Joe she is with him to Hardin went went to Hardin together.

12. *Marysh Chichúcheesh Joesh áxpak déek

3) The ak-phrase contains only the verb form and its object phrase, even though simple sentences with áxpa, as well as ak-complements are not so restricted.

13. Húuleesh Marysh biiáxpak = Mary was with me yesterday.

14. *Marysh húuleesh biiáxpak déek

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