

HOW TO TELL A HEAD WHEN YOU SEE ONE: DISAMBIGUATION IN DIEGUENO RELATIVE CLAUSES*

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In their most general and schematic form, relative clauses in all languages present high potential for ambiguity. This is because in relative constructions, a noun or noun phrase is semantically shared between the matrix and embedded sentences, and generally either the matrix or the relative is "compromised" in form by the deletion, movement, and/or pronominalization of this shared constituent. In English, the relative is compromised: the head noun is preposed and the grammar must keep track of the "hole" from which it has been moved. In Navaho, Hopi, and Diegueño, it is the matrix which is compromised: there generally is no hole to be kept track of, but rather the absence of a head external to the relative presents the problem of keeping track of which NP within the relative corresponds semantically to the English head.

1. Diegueño relative clauses

The most trivial type of relative clause is usually not treated as such. There is a prefix k^We ~ ku which has usually been called a nominalizing prefix and which, attached to a verb stem, can be translated as 'the one who/which...'. For example,

- (1) -l^yuL^y 'cook' becomes with k^We > k^WeL^yuL^y 'the one who cooks'.

Simply treating k^We as a subject nominalizer is a slight oversimplification, however, since it applies productively to the verbs of multi-word sentences:

- (2) tenay ciyaw maw 'he didn't sing yesterday'
yesterday sing not

becomes with prefixing of k^We to the highest verb maw 'not'

- (2a) tenay ciyaw kumaw 'the one who didn't
yesterday sing one-who-not sing yesterday'

This type of nominalization is only a very restricted case of the relative clause construction, of course, since it can apply only when the shared NP is the subject of the embedded sentence.

A more common and recognizably relative construction is exemplified

by

- (3) $\frac{[i:pac \text{ ?}əwu:w]+pu+c}{man \quad I\text{-saw+DEF+SUBJ}} \quad \frac{ciyaw}{sang} \quad \text{'the man I saw sang'}$

Compare the corresponding embedded and matrix sentences:

- (3a) $\frac{i:pac \text{ ?}əwu:w}{man \quad I\text{-saw}} \quad \text{'I saw a/the man'}$ (embedded)

- (3b) $\frac{i:pac(+pu+c)}{man(+DEF+SUBJ)} \quad \frac{ciyaw}{sang} \quad \text{'the man sang'}$ (matrix)

Here it is not clear from either case-marking or word order¹ whether i:pac 'man' belongs to the matrix or to the embedded sentence. But consider sentences like

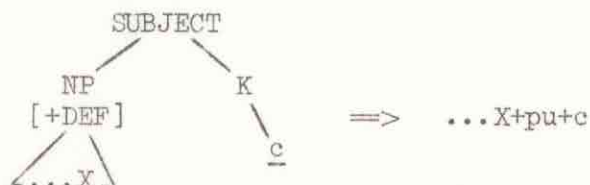
- (4) NP S
 $\frac{[\frac{tənay}{yesterday} \quad \frac{?əwa:+\phi}{house+OBJ} \quad \frac{?əwu:w}{I\text{-saw+DEF+INESSIVE}}]+pu+I^V}{\text{I'll sing in the house I saw yesterday}} \quad \frac{?ciyawx}{I'll\text{-sing}}$

'I'll sing in the house I saw yesterday'

- (4a) $\frac{tənay}{yesterday} \quad \frac{?əwa:+\phi}{house+OBJ} \quad \frac{?əwu:w}{I\text{-saw}} \quad \text{'I saw the house yesterday'}$

- (4b) $\frac{?əwa:+\phi+I^V}{house+DEF+INESSIVE} \quad \frac{?ciyawx}{I'll\text{-sing}} \quad \text{'I'll sing in the house'}$

Both word order and case-marking show that the occurrence of ?əwa: 'house' in sentence (4) is as part of the embedded sentence (4a) and not as part of the matrix (4b). The case-marking required by its function as part of the main clause is I^V 'INESSIVE'; this marking does not appear on ?əwa: in (4) but rather on the last word of the relative clause, which in this instance is the verb ?əwu:w 'I saw'. The marking on ?əwa: 'house' is OBJECT case, the case required by its function in the embedded sentence as object of 'I saw'. Such behavior is not exceptional in Diegueño, for case-markings always occur on the last word of the NP to which they apply, regardless of the lexical class of that word. Since it is an SOV language, the last word of a relative or a sentential complement is typically a verb. The mechanism for marking is evident given the structure; for example,



An NP marked [+DEF] is segmentalized with pu, which is suffixed to the last word of the NP. The case suffix is suffixed to the last word of the NP immediately dominated by the case node (here, SUBJECT).

The potential problem for the language posed by such constructions is evident in ambiguous sentences like

- NP S
(5) [[xatəkcock+∅ wi:+m ?tuc]]+pu+c n^yiL^y
dog+OBJ rock+COM I-hit+DEF+SUBJ was-black

'the rock I hit the dog with was black'

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'the dog I hit with the rock was black'

- (5a) xatəkcock+∅ wi:+m ?tuc 'I hit the dog with a/the rock'
dog+OBJ rock+COM I-hit

- (5b) xatəkcock+pu+c n^yiL^y 'the dog was black'
dog+DEF+SUBJ was-black

- (5c) wi:+pu+c n^yiL^y 'the rock was black'
rock+DEF+SUBJ was-black

Of course, pragmatic context or semantic considerations will often disambiguate such sentences. Where they do not, however, there are grammatical modes of disambiguation.

2. Alternative relative constructions: the Mesa Grande dialect

In the two Diegueño dialects for which I have relevant data, there are at least three alternative realizations for relative clauses which do not have the ambiguity potential of sentences like (5).² In the Mesa Grande dialect, one such is exemplified by

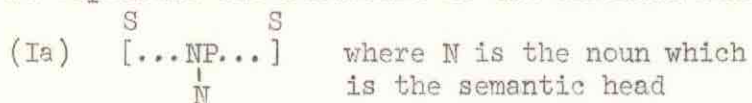
- NP S
(6) [[?əwil^y ?əxat+∅ n^yi+m ?tu:]]+pu+c n^yiL^ycis
rock dog+OBJ DEMON+COM I-hit+DEF+SUBJ is-black-indeed

'the rock I hit the dog with was black'

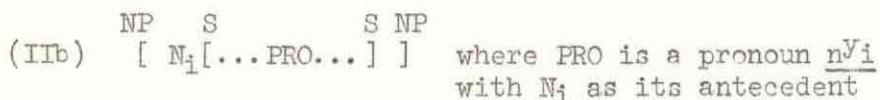
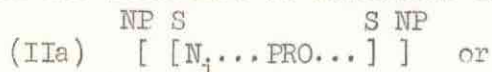
- (6a) ?əxat+∅ ?əwil^y+m ?tu: 'I hit the dog with the rock'
dog+OBJ rock+COM I-hit

- (6b) ?əwil^y+pu+c n^yiL^ycis 'the rock was black'
rock+DEF+SUBJ is-black-indeed

If we represent the structure of the embedded sentence (6a) as

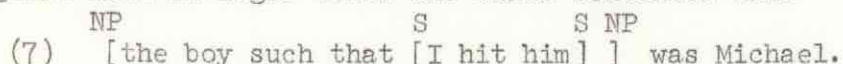


then the structure of sentences like (6) above can be represented:

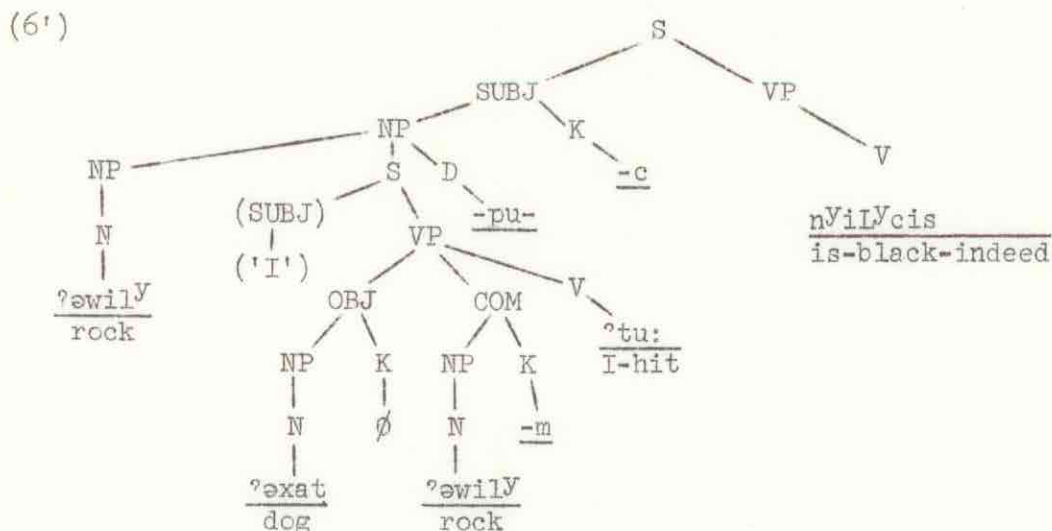


The choice between (IIa) and (IIb) depends on whether we regard the noun N as part of the relative clause (in which case we choose (IIa)) or as a head noun exterior to the relative (in which case we choose (IIb)). For the present I leave both possibilities open, referring to them commonly as (II).

This surface construction is reminiscent of structures in other languages like the English such that construction. In the style of English used in logic texts one finds sentences like



Perhaps then we would like to regard something like (IIb) as underlying Diegueño relative constructions. That is, we might consider the possibility that all relative clauses come from a structure like one of those proposed by the traditional NP-S, Det-S, or Nom-S analyses, in which there is a head external to the embedded sentence. Then (6) might come from something like

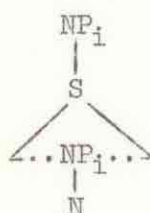


3. The Indexing Analysis

While the above kind of structure may feel familiar, familiarity does not guarantee correctness, and there is an alternative analysis which I claim will prove more adequate overall. This solution is based on the analysis of relative clauses by Gilles Fauconnier in his dissertation (1971). Since this work is not as widely known as it should be, I will attempt to briefly describe the part of it most relevant to this paper, as I have understood it.

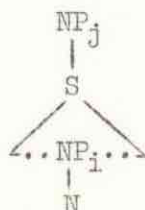
For languages such as Diegueño, Hopi, and Navaho, which seem to favor the embedded sentence over the matrix in relative clause constructions, Fauconnier proposes an underlying structure which he writes³

(8)



In (8) there is no head noun coordinate with the S, but the same semantic information about the NP conveyed by the head in English is conveyed here by the expansion as N of the lower occurrence of NP_i. The index on the topmost NP node of (8) is important, since its coreference with the lower NP contrasts this structure with that of sentential subjects, objects, etc., which is

(9)



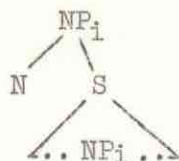
This underlying contrast corresponds to that between the embedded clauses of

(10a) I saw the man who left.

(10b) I saw that the man left.

For English, Fauconnier proposes the structure

(11)



In (11), the lower occurrence of NP_i is unexpanded. A cyclical feature-copying rule is applicable to NP_i which copies features of NP_i derived from N onto this lower occurrence, giving rise eventually to a pronoun. I will not go into the arguments--primarily from English and French--given by Fauconnier for his analysis. Rather I would like to compare traditional analyses with one using cyclical indexing (henceforth the Indexing analysis) strictly in terms of the data from Diegueño. By "Traditional" analyses I will mean all those which posit an underlying occurrence of the semantic head outside the embedded sentence (e.g. the NP-S or Nom-S analyses). The criteria I will consider in comparing analyses include complexity and number of rules required, naturalness of rules in terms both of universals and of the structure of Diegueño, relation to rule constraints, and the ability to account for the range of data (including that across mutually intelligible dialects).

4. Construction (II): Traditional analysis

In order to derive sentence (6) from a structure like (6'),⁴ the only rule necessary is quite ordinary pronominalization (henceforth PRONOM) to change the lower occurrence of $?ewilY$ 'rock' to the pronoun nYi 'DEMON(STRATIVE)'. Alternatively, one might propose an underlying pronoun for the lower occurrence. The empirical difference with respect to the comparison at hand is not apparent if it exists. In either case, however, note that the usual Ross-Langacker command restrictions hold.

Things are not so rosy, however, as the above might suggest. The head noun $?ewilY$ 'rock' in sentence (6) is not--and may not be--marked as [+DEF], even though, if as posited, it functions as a definite NP in the matrix sentence. The following are not acceptable alternatives to (6):

(12a) * $\frac{?ewilY+pu}{rock+DEF} \frac{?axat+\emptyset}{dog+OBJ} \frac{nYi+m}{DEMON+COM} \frac{?tu:+pu+c}{I-hit+DEF+SUBJ} \frac{nYilYcis}{is-black-indeed}$

(12b) * $\frac{?ewilY+pu+c}{rock+DEF+SUBJ} \frac{?axat+\emptyset}{dog+OBJ} \frac{nYi+m}{DEMON+COM} \frac{?tu:+pu+c}{I-hit+DEF+SUBJ} \frac{nYilYcis}{is-black...}$

The apparent solution to this difficulty is to have the head noun node be an N-node only and not an NP. If so, however, the posited controller for PRONOM of the lower NP_i ($?ewilY$ 'rock' $\rightarrow nYi$) is not a noun phrase

but only a noun, and thus violates the presumed universal that only noun phrases control definite anaphora.

4.1 Construction (II): Indexing analysis

The Indexing analysis requires this same rule plus two more. In terms of the schema used above for (II), the underlying structure for Indexing is

- (I)
$$\begin{array}{c} \text{NP}_i \text{ S} \qquad \qquad \text{S NP}_i \\ \left[\begin{array}{c} \vdots \\ \text{NP}_i \end{array} \right] \end{array} \quad \text{where, as before, N is the semantic head}$$

In order to go from (I) to (II), we need first a rule which copies the internal NP_i to its right (call this rule COPY),⁵ producing

- (13)
$$\begin{array}{c} \text{NP}_i \text{ S} \\ \left[\begin{array}{c} \vdots \\ \text{NP}_i \end{array} \right] \text{ NP}_i \dots \end{array}$$

Then (obligatory) PRONOM gives

- (14)
$$\begin{array}{c} \text{NP}_i \text{ S} \\ \left[\begin{array}{c} \vdots \\ \text{NP}_i \end{array} \right] \text{ PRO} \dots \end{array}$$

Finally, we need a rule FRONT which moves such a noun to the front of its clause, giving us (II).⁶

On the basis of sentences of type (II), we might say that Indexing is a more complicated solution, but it is not a priori unnatural. The additional rules required, COPY and FRONT, are quite plausible, of types found in other languages. Their status in Diegueño will be examined as we continue.

5. Jacumba dialect: Construction (III)

In the Jacumba dialect, there are sentences such as

- (15)
$$\begin{array}{c} \text{NP S} \\ \left[\begin{array}{c} \text{i:pac} \quad \text{?awa:} \quad \text{n?i+k} \quad \text{wiyiw} \end{array} \right] + \text{pu+c} \quad \text{n?imšap} \\ \text{man} \quad \text{house} \quad \text{DEMON+ABL} \quad \text{came+DEF+SUBJ} \quad \text{was-white} \end{array}$$

'the house that the man came from was white'

- (15a)
$$\begin{array}{c} \text{i:pac} \quad \text{?awa:+k} \quad \text{wiyiw} \quad \text{'the man came from the house'} \\ \text{man} \quad \text{house+ABL} \quad \text{came} \end{array}$$

- (15b) $\frac{?əwa: + pu + c}{\text{house} + \text{DEF} + \text{SUBJ}}$ $\frac{n^y i m \check{s} a p}{\text{was} - \text{white}}$ 'the house was white'

Schematically, sentence (15) is of the form

- (III) $\begin{array}{c} NP_i \quad S \\ [\quad [\dots NP_i \quad \text{PRO} \dots] \quad] \\ \quad \quad \quad \downarrow \\ \quad \quad \quad N \end{array}$

where, in (15), $N = ?əwa:$ 'house' and $\text{PRO} = n^y i$ 'DEMON'.

5.1 Construction (III): Traditional analysis

For the Traditional analysis, two types of derivations might be tried for this construction. The first would move the head noun into the relative clause so that it immediately precedes (or follows) the token of the head which already appears there and then pronominalize the second occurrence of the head:⁷

- (16) $\begin{array}{c} NP_i \quad S \\ [\quad N \quad [\dots NP_i \dots] \quad] \\ \quad \quad \quad \downarrow \\ \quad \quad \quad N \end{array}$

$\Rightarrow [\quad [\dots (NP) \quad NP_i \dots] \quad]$ (by LOWER)

$\downarrow \quad \downarrow$
 $N \quad N$

$\Rightarrow [\quad [\dots (NP) \quad \text{PRO} \dots] \quad]$ (by PRONOM)

\downarrow
 N

This solution is unattractive in that it seems to do the same kind of violence to the complex noun phrase NP_i as would a Complex-NP Constraint violation. Furthermore, it seems counter to the universal tendency for "objective content" to "rise" in trees and non-objective material to be lowered (cf. Langacker 1972). That is, the rule LOWER causes the head noun (objective content) to become lower relative to the relative clause sentence, making the head more deeply embedded.⁸ It is the fact that LOWER lowers a lexical head noun that contrasts it with possible rules of quantifier-lowering, which lower non-objective material. This functional principle, in addition to its cross-linguistic motivation, has independent motivation in Diegueño,⁹ so we are compelled to consider alternative solutions.

One alternative for the Traditional analysis would be to copy the internal NP_i to its right and then pronominalize the second occurrence--i.e. apply COPY and PRONOM as discussed above for Construction (II). Either before or after application of these two rules, a rule would apply which is similar to Equi-NP Deletion, but which has the usual command

relations just reversed, so that the "top" NP rather than the lower one is deleted. Call this rule TOPSI.

TOPSI seems a rather suspect addition to the grammar. I know of no evidence that any language needs an obligatory rule deleting the top-most of two coreferential NP's.¹⁰ Furthermore, Diegueño needs on independent grounds both a rule of Equi-NP Deletion and a pronominalization rule which operate under the Ross-Langacker constraints. As a result, the grammar would have rules of deletion and pronominalization operating in opposite vertical directions. Despite these qualms, however, I find this type of derivation¹¹ preferable to the first, which moves the head noun into the relative clause.

5.2 Construction (III): Indexing analysis

The Indexing analysis of sentences like (15) uses rules of COPY and PRONOM, giving a derivation of the sort

$$\begin{array}{lcl}
 \text{(17)} & \begin{array}{c} \text{NP}_i \text{ S} \\ [[\dots \text{NP}_i \dots]] \\ | \\ \text{N} \end{array} & \\
 & \Rightarrow [[\dots \text{NP}_i \text{ NP}_i \dots]] & \text{(by COPY)} \\
 & \quad | \\
 & \quad \text{N} \\
 & \Rightarrow [[\dots \text{NP}_i \text{ PRO} \dots]] & \text{(by PRONOM)} \\
 & \quad | \\
 & \quad \text{N}
 \end{array}$$

The rules COPY and PRONOM are also needed in the preferred Traditional analysis of the same construction above. Interestingly, they are also the two rules which the Indexing analysis needs to derive Construction (II) in the Mesa Grande dialect. The only dialectal difference is the presence in Mesa Grande of the additional rule FRONT, which can apply after COPY and PRONOM.

6. Jacumba dialect: Construction (IV)

The Jacumba dialect also has constructions with the structure¹²

$$\text{(IV)} \quad \begin{array}{c} \text{NP}_i \text{ NP}_i \text{ S} \\ [[[\dots \text{NP}_i \dots]] + \text{D} \text{ NP}_i] + \text{D} + \text{K} \\ | \qquad \qquad \qquad | \\ \text{N} \qquad \qquad \qquad \text{N} \end{array}$$

I have indicated the structure in somewhat more detail than for the

other constructions: with the presence of the determiner (D = pu) and case marking (K) indicated. This is because these markings play a significant role in the treatment I will give the construction. An example of Construction (IV) is

- (18)
$$\begin{array}{c} \text{NP}_i \quad \text{NP}_i \quad \text{S} \\ \left[\begin{array}{c} \text{i:pac} \quad \text{a:k}+\emptyset \quad \text{wi:+m} \quad \text{tuc} \end{array} \right] + \text{pu} \quad \text{a:k} + \text{pu} + \emptyset \\ \text{man} \quad \text{bone+OBJ} \quad \text{rock+COM} \quad \text{hit+DEF} \quad \text{bone+DEF+OBJ} \end{array}$$

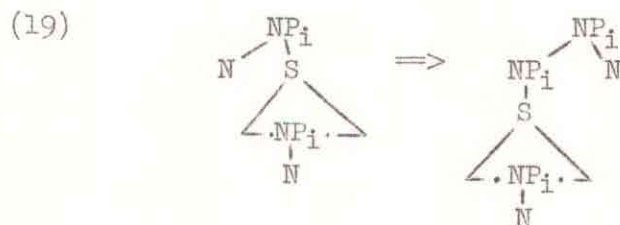
$$\begin{array}{c} \text{si:n}^{\text{V}}+\text{c} \quad \text{wiyaw} \\ \text{woman+SUBJ} \quad \text{found} \end{array} \quad \begin{array}{l} \text{'the woman found the bone that} \\ \text{the man hit with the rock'} \end{array}$$

- (18a)
$$\begin{array}{c} \text{i:pac} \quad \text{a:k}+\emptyset \quad \text{wi:+m} \quad \text{tuc} \\ \text{man} \quad \text{bone+OBJ} \quad \text{rock+COM} \quad \text{hit} \end{array} \quad \begin{array}{l} \text{'the man hit the} \\ \text{bone with the rock'} \end{array}$$

- (18b)
$$\begin{array}{c} \text{si:n}^{\text{V}}+\text{c} \quad \text{a:k+pu}+\emptyset \quad \text{wiyaw} \\ \text{woman+SUBJ} \quad \text{bone+DEF+OBJ} \quad \text{found} \end{array} \quad \begin{array}{l} \text{'the woman found the bone'} \end{array}$$

6.1 Construction (IV): Traditional analysis

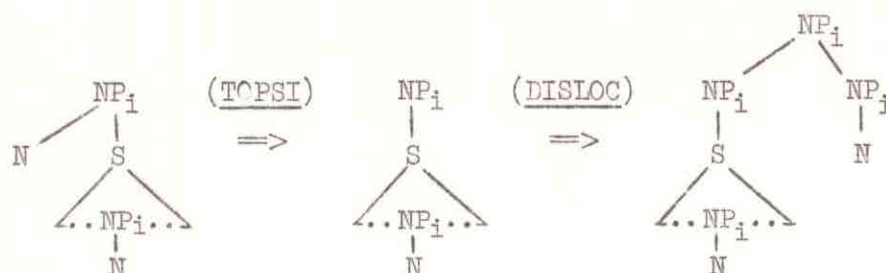
One possibility for the Traditional treatment of these sentences is for a rule (call it HEAD RIGHT) to permute the relative clause and its head,¹³ producing a structure like (IV). While head permutation rules are uncommon, Schwartz (1971) points out that there are a few languages (e.g. Mandarin, Quechua, and German) which do seem to have them. Given the derived structure of (IV), we see that the actual effect of HEAD RIGHT is to Chomsky-adjoin the head on the opposite side of the NP-node which dominates it:



It is not apparent how the Traditional analysis would explain why the head should be in a different constituency depending on which side of the clause it occurs on.

An alternative Traditional analysis would derive (IV) by application of TOPSI and a rule of right dislocation (call it DISLOC) which copies the lower occurrence of the semantic head and Chomsky-adjoins it to the whole NP. That is:

(20)



This solution provides a more plausible account of the double DEF marking, since the original "top" NP_i will be [+DEF]. When the new node is created by Chomsky-adjunction (DISLOC), this feature will be copied with the rest of the NP-node. Other than the earlier stated objection to TOPSI, this solution does not seem unreasonable.

6.2 Construction (IV): Indexing analysis

For the Indexing analysis, only the dislocation rule DISLOC is necessary, since the underlying structure (I) posited by Indexing is essentially the second step in the Traditional derivation (i.e. (20) above). Furthermore, this analysis provides an independently needed mechanism for the marking of the newly created (by Chomsky-adjunction) NP-node as [+DEF]: namely the cyclic feature-copying rule used by Indexing to account for pronominalization and agreement phenomena.

The dislocation rule needed seems to be stylistically similar to the English right dislocation rule which produces

(21) That's the one I'll give you, the broken-down chair by the car.

(22) *?The woman found the one such that the man hit the bone with the rock, (namely) the bone.

7. Summary of the Analyses

The chart (23) which follows summarizes the rules needed for each of the disambiguating constructions in the two dialects. If we compare the analyses in terms of the overall pattern of rules necessary, some interesting patterns emerge:

(23)		RULES NEEDED		NOTES
CONSTRUCTION		TRADITIONAL	INDEXING	
#	(II) [N...PRO...]	PRONOM	COPY, PRONOM, FRONT	
*	(III) [...N PRO...]	LOWER, PRONOM or TOPSI, COPY, and PRONOM	COPY, PRONOM	(a) (b)
*	(IV) [[...N...] N]	HEAD RIGHT or TOPSI, DISLOC	DISLOC	(c) (b)
# = Mesa Grande dialect * = Jacumba dialect				

- Notes:
- (a) LOWER lowers objective content
 - (b) TOPSI violates command restrictions
 - (c) Derived structure difficult to explain for HEAD RIGHT

Of the rules needed by the Indexing analysis, only FRONT and possibly DISLOC are not also needed by Traditional analyses. Both these rules are plausible ones within Diegueño and are at least quite similar to rules needed in other languages.

Besides the rules needed by the Indexing analysis, the Traditional analyses need at least TOPSI, a rule counter to the usual command restrictions, which seem otherwise to hold in Diegueño, and one which derives a structure identical to that with which the Indexing analysis begins. Other, less desirable versions of a Traditional analysis would also require LOWER or HEAD RIGHT, both suspect for reasons given before.

8. Some additional considerations

Whichever analysis is chosen must not only account for the three constructions given in the chart (23). It must account--first and foremost--for the type of sentences which have structure (I) [cf. section 4.1], such as (3), (4), and (5) [cf. section 1]. This construction is essentially the most basic structure in the Indexing analysis. It "costs" nothing to derive, save the DEF segmentalization and case suffixation rules which are necessary in identical form to account for the behavior of these suffixes with respect to simple nouns

or conjunctions of nouns.¹⁴ To derive (I) from the Traditional structures, one must apply TOPSI, whose dubious status has been discussed.

In a sense, the comparison so far has boiled down to whether it is "harder" for the grammar to go from (I) to (II) or vice-versa. I have tried to argue that the easiest way is from (I) to (II), but this is not the only type of relevant argument. The construction (I) is overwhelmingly the dominant Diegueño surface structure in all dialects--in fact, in most Yuman languages. Indeed it is the only surface relative clause construction I was able to find in either the linguistic literature or the manuscripts I examined. These data sources include several texts and cover four Diegueño dialects. The alternative constructions which have been the concern of this paper were elicited specifically for my research on Diegueño relatives, and they only arose when informants were conscious of--and apparently wanted to avoid--the ambiguity which is possible in Construction (I). If it is possible to say this about a generally unwritten language, I would call Constructions (II), (III), and (IV) learned constructions. This opinion is admittedly impressionistic. It is not impressionistic, however, that (I) is the only relative clause construction common to the dialects studied.

This study began as an examination of alternatives to what was known to be the dominant surface structure for Diegueño relative clauses. The result has been that the less common structures point to the structural as well as frequency-of-usage primacy of the usual surface structure--the relative clause without a head. On the grounds argued here, I suggest that the positing of lexical heads for Diegueño relatives at the deepest level at which they are in fact relatives is a mistake.

FOOTNOTES

* This paper is based primarily on fieldwork under the direction of Dr. Margaret Langdon, to whom I am indebted for her own work and for patient guidance and encouragement of my work with Diegueño. I am also indebted to her principal Mesa Grande dialect consultants, Mr. Ted Couro and the late Ms. Christina Hutcheson, for assistance both direct and through Dr. Langdon. Along with that to Dr. Langdon, my principal debt is to Mr. George Hyde of Alpine, California, who has been my principal consultant for the Jacumba dialect since 1970, during which time he has given our work the conscientious dedication of one who appreciates his language. I also thank the many faculty members and students of the U.C. San Diego Linguistics Department who have helped me through discussions and insightful criticism of earlier versions of this paper. I alone am responsible for its shortcomings.

1. Word order in Diegueño is basically SOV. The equivalents of English prepositions, adjectives, quantifiers, etc. are all surface verbs, subject to the full array of inflectional and derivational devices to which Diegueño verbs in general are subject.

There are six surface cases in Diegueño:

- | | |
|------------------------|------------------------------------|
| a. Subject = <u>c</u> | d. Inessive = <u>I^y</u> |
| b. Object = <u>Ø</u> | e. Ablative = <u>k</u> |
| c. Locative = <u>i</u> | f. Comitative = <u>m</u> |

The superficial semantics of the cases are:

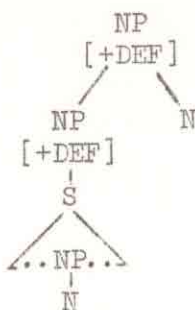
- a. SUBJect: surface subject
- b. OBJect: direct and indirect object
- c. LOCative: vague location (English 'at')
- d. INESSive: location within or motion into
- e. ABLative: motion away from
- f. COMitative: accompaniment, instrument, motion towards

2. There is a fourth type of relative construction in the Mesa Grande dialect, but it does not remove ambiguity. It is exemplified by

- (24) matətay mum+pu pu:+m ?a:xs 'I'll go to the
mountain you-see+DEF DEF+COM I'll-go mountain you see'

Note that the DEF marking pu shows up not only on the relative structure as a whole, but also on the relative clause itself (i.e. on matətay mum+pu in (24)). This fact is difficult to explain unless the relative clause exhausts or is the rightmost member of an NP, at least in derived structure:

(25)



The consequences of this derived structure will play a significant role in later considerations.

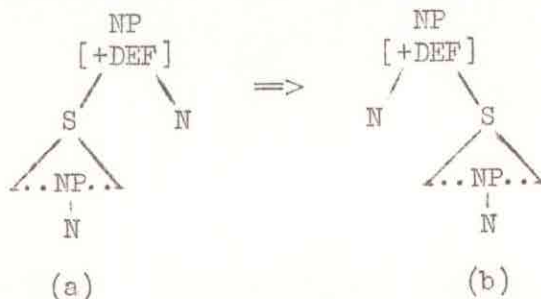
3. Actually, I have modified Fauconnier's structures in that I omit the nodes "D" (Determiner) which he has under the highest occurrence of NP_i (i.e. as sisters to S). For the most part, this variation is irrelevant to the present paper and is primarily for the sake of simplicity and clarity of exposition. I assume that the surface determiner pu is derived via segmentalization as described in section 1 of this paper.

4. Patrick Brogan (personal communication) has suggested that a more probable Traditional analysis would posit underlying [S-N] rather than [N-S] order for relative clause structures in Diegueño. This preference is based on a general tendency among SOV languages (cf. Schwartz 1971).

If a structure with order [S-N] were to underly relative clauses in Mesa Grande, then the only surface manifestation of this order would apparently be sentences like (24) in fn. 2. But, as noted there, the derived structure must be as in (25), so that this lone type of surface manifestation would be a significantly derived one, in which the head has been Chomsky-adjoined to the node NP_i immediately dominating it. Dislocation--and backing rules in general--seem to move an element to the end of a clause (cf. Langacker 1972:22-23). Yet this dislocation (or whatever it is) of the head noun is vacuous with respect to surface structure--it does not move the head noun anywhere.

In the derivation of (6) from an underlying [S-N] structure, a rule (call it HEAD LEFT) would permute the head and S, giving (26b):

(26)



This rule moves the head away from the dominant order for SOV languages. Furthermore, it takes an unambiguous structure (26a) which accords with what is at least a strong surface preference in Diegueño--that embedded clauses either begin or end the clause in which they are immediately embedded--and creates a violation of that constraint. There are other difficulties with the [S-N] order which will be discussed as they arise.

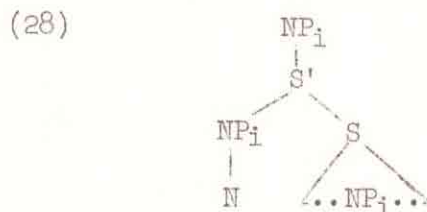
5. COPY is a rule whose basic function seems to be emphasis. The use of repetition as a mode of emphasis or semantic "strengthening" is, of course, a common phenomenon in languages throughout the world. It occurs on both the syntactic level and the derivational level. In English, there is, for example, the stylistic variant exemplified by:

(27) This man, this man is a fool.

At another level, there is reduplication--repetition to which subsequent elision and morphophonemic processes may often apply; this process shows up frequently in Diegueño.

The emphatic function of the output of COPY is, I believe, the factor to which the rule FRONT will refer in its structural description. This interpretation receives some backing from the fact that in many Diegueño speakers' idiolects, an object noun in a simple sentence may be moved before the subject for emphasis.

6. The rule FRONT is presumed to give a derived structure something like



That is, FRONT is also a raising rule. This assumption allows the constraint (cf. fn. 4) that subordinate clauses either end or begin the clause in which they are embedded to be maintained: S is the last constituent of S', and S' is the first constituent of the sentence in which the top NP_i is a constituent. The rule also creates a "pseudo-head" for NP_i. This motivation for raising status is admittedly ad hoc. Hopefully further research will either validate my assumption or offer an attractive alternative.

Note that, since the "head" in the Indexing analysis originates from within the lower S, where it need not have [+DEF] status, it will not have to be marked [+DEF]; thus the difficulties with its NP status (cf. section 4 of this paper) do not arise.

7. I ignore the question of how the head, which is a noun but not a noun phrase, either magically becomes an NP when it is LOWERed or else, despite its non-NP status, manages to control or suffer (depending on whether the head is positioned before or after the lower occurrence of NP_i) definite pronominalization.

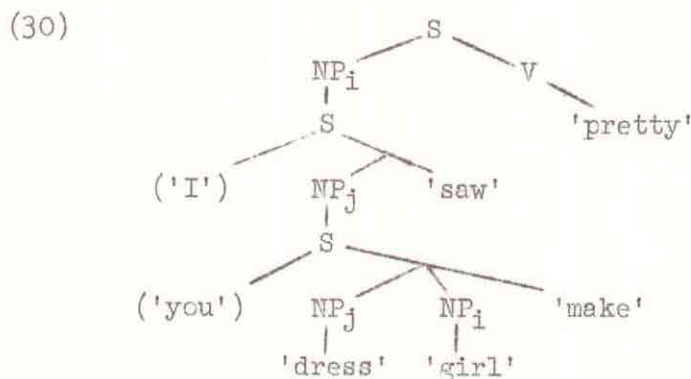
8. Pam Munro (personal communication) has shown me data from Mojave (a fairly closely related Yuman language) which, if paralleled in Diegueño, would further emphasize this unlikely effect. So far I have not tested this sentence type in Diegueño, but I plan to do so.

A typical example of the sentences in question is

(29) hahváy mariči:nV mu:čo:+nV ?iyu:+nV+č ?aho:tk
 her-dress girl you-made+DEMON I-saw+DEMON+SUBJ is-pretty

'the girl who I saw the dress you made for (her) is pretty'

The English gloss is an ungrammatical Complex-NP Constraint violation. A crude tree for the surface structure of (29) is



To arrive at this structure from a Traditional source, whether [N-S] or [S-N], is downright burying of the semantic 'girl', an important piece of objective content.

9. For example, predicate-lowering is a pervasive process, resulting in an elaborate system of suffixation and following auxiliaries. A conspiracy of sorts (discussed briefly in Gorbet 1973) results in the total absence of surface sentential subjects. Other common devices for achieving the foregrounding of objective content find considerable application in Diegueño, although I will not discuss them here.

10. Perhaps this claim should be modified to exclude only the deletion of a lexical head. Edward Klima has pointed out to me (personal communication) that one might wish to relate sentences such as (31a-b):

(31a) The person [whom you like] will help you.

(31b) Whom(ever) you like will help you.

The inflectional evidence of the accusative whom in (31b) points to membership of this word in the subordinate clause. Such sentences, then, might appear to be candidates for a TOPSI-like rule in English which would, for example, delete person in (31a).

Even assuming that headless and "normal" English relative clauses must be related transformationally, there are at least three ways to explain this relation without resort to a TOPSI rule. The first would be to begin with the assumption that the head for sentences like (31b) is non-lexical. If I interpret him correctly, Kuroda (1968) is very close to this position. The underlying string for (31b) would be like

(32) THAT Pro [Wh+SOME Pro you like] will help you
[+Hum]

The capitalization of THAT and SOME indicates their prelexical status. The rules used by Kuroda to derive sentences like (31b) take THAT Pro \rightarrow ϕ before Wh+SOME Pro, take Wh+SOME \rightarrow what, etc.

A second, related approach would be the intuitively agreeable one of regarding whom in (31b) as a lexicalization of that (one) + whom, so that (31b) is related not to (31a) but rather to

(33) That one whom you like will help you.

A similar rule would relate what to that (one) + which.

Still another approach would be to derive (31b) from an underlying source which was already headless. While not a popular treatment of English relative clauses, this method is not unknown. Gilles Fauconnier has suggested to me in informal conversation that it might be desirable to derive all relative clauses from a structure like he posits for Diegueño, Hopi, etc. Michael Brame, rumor has it, suggested this possibility some years ago, although his arguments based on idiom phenomena seem to be irrelevant to the question of relative clause structure (similar arguments go the opposite direction). Paul Schachter has recently published (1973) a paper bearing on this possibility, and a recent unpublished paper by Langacker (1972) also discusses it.

Incidentally, there is a large body of fluent English speakers who also speak a language in which relative clauses are headless: namely, users of American Deaf Sign Language. Since Sign is not genetically or structurally related to English, the significance of this fact is in

doubt, but it is possible that data on interference between the two languages might furnish clues as to the status of headless relatives in English. The nature of relative clauses in Sign was brought to my attention by Rick Lacy (personal communication).

Obviously I have not obviated the possible counterexample posed by (31b) and similar sentences. They deserve further study. Hopefully further understanding of them will either argue strongly for a TOPSI rule in English or provide part of a substantial argument against underlying head nouns in English.

11. I include in this comment analyses from underlying [S-N] order, which would need the same rules (TOPSI, COPY, and PRONOM) in their best versions. From [S-N] order, TOPSI would at least operate forwards, but it still effectively lowers the important objective content generally found in the semantic head. Presumably deletion rules operate on redundant material. This derivation seems to delete the not really redundant head, then "changes its mind" and emphasizes the lower occurrence of this same item by COPYing. The net effect, of course, is the same as that noted before in the text and in fn. 8 for LOWER.

12. This structure was suggested by Gilles Fauconnier (personal communication). I originally analyzed these structures as

(34)
$$\begin{array}{ccccc} \text{NP}_i & \text{S} & & \text{S} & \text{NP}_i \\ & & & & | \\ & & & & \text{N} \end{array} \quad \begin{array}{c} [\dots \text{NP}_i \dots] + \text{D} \\ | \\ \text{N} \end{array} \quad \begin{array}{c} \text{NP}_i \\ | \\ \text{N} \end{array} \quad \begin{array}{c} \text{NP}_i \\ | \\ \text{N} \end{array} \quad \begin{array}{c}] + \text{D} + \text{K} \end{array}$$

As noted in fn. 2 for a similar (but not disambiguating) structure in Moss Grande dialect, this structure (34) fails to explain the distribution of the DEF marking pu. In sentence (18), for example, pu occurs on both tuc 'hit' and a:k 'bone'. If DEF is a feature of NP's only, we must favor structure (IV), since there must be an NP constituent for the pu which occurs on tuc.

13. It might seem that a structure with order [S-N] would generate (IV) at no "expense", but the head must be Chomsky-adjoined to the dominating NP_i to get the correct distribution of DEF marking (cf. fn. 12).

14. Crucial evidence for the form of case-marking is provided by

(35)
$$\begin{array}{llll} \text{nVa:} + \text{c} & [\text{šaL}^V \text{ mi:}] + \text{m} & \text{ʔšxari:} & \text{'I pushed with my hands} \\ \text{I+SUBJ} & \text{hand foot+COM} & \text{pushed} & \text{and feet'} \end{array}$$

in which COMITATIVE case (m) is marked only on the last word of the conjoined šaL^V mi: 'hands and feet'. That is, the case suffix is attached to the last word (regardless of its form class) of the noun phrase which serves the case function.

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