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Reduplication and Anomalous Rule Ordering

in Copala Trique

Barbara E. Hollenbach

Reduplication is a process that often seems to be associated with exceptions to the application of phonological rules. Either reduplicated forms are exempt from the application of a rule, as described by Munro and Benson (1973) for Luiseño, or else they are subject to the application of rules in environments where they wouldn't be expected to apply, as in certain Tagalog examples mentioned by Bloomfield (1933:222). In this paper I discuss a problem of the second type in Copala Trique.¹

Reduplication is often defined as an affix, e.g. Bloomfield (1933:218) or sometimes as extending to an entire root, e.g. Sapir (1921:79). These definitions are too narrow to include Copala Trique reduplication, in which one or more words are repeated. (Copala Trique words rarely exceed three syllables, and non-nuclear syllables have such severe limitations on the occurrence of phonological features that reduplication within the word would be virtually impossible.) This reduplication signals intensification, repetition, or continuation of a predicate. The most common kind of repetition involves a verb root, but adverbs are also repeated, and sometimes a verb plus its subject. These items may be repeated more than once. Examples:

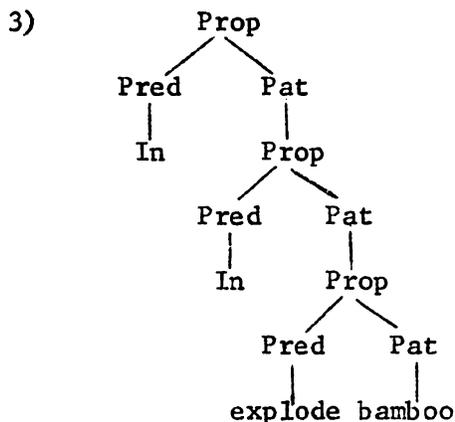
- 1) utu³⁵ utu³⁵ žini³ 'the boy scratches and scratches' (scratch scratch boy);
- 2) nanah³⁴ nanah³⁴ nari^{ʔ3} žini³ 'the boy learns very slowly' (slow slow learn boy);
- 3) anu³⁵ ria³⁴ anu³⁵ ria³⁴ anu³⁵ ria³⁴ 'the bamboo kept on and on exploding' (explode bamboo explode bamboo explode bamboo);
- 4) giri³⁴ žo^{ʔ3} giri³⁴ žo^{ʔ3} tãh³⁴ du^{ʔwa}³ žo^{ʔ3} 'it (animal) kept on and on taking

thorns out of its mouth' (took-out it took-out it took-out it thorn mouth-of it). A related phenomenon is the repetition of a numeral, meaning 'each':

5) wa³⁴ ze³ gwendo³² yo'ɔ⁴ yo'ɔ⁴ yo'ɔ⁴ nih³ žuku³ yo'³ 'each and every one of those animals has its story' (exist possessed story-of one one one plural animal that).

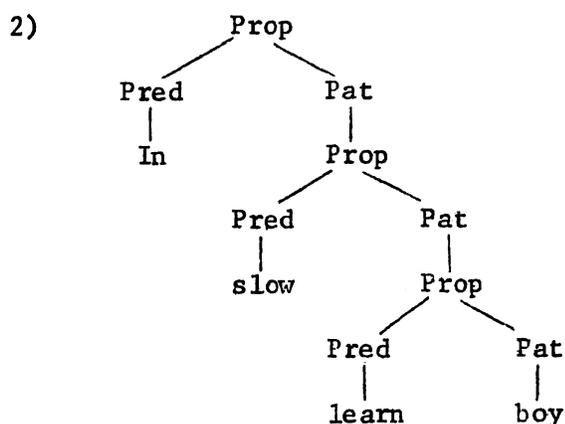
From the point of view of generative semantics, examples 1 - 4 have a logical structure predicate of intensification (In), which is manifested by a copying rule. Two major questions must be asked about such a rule: what is its domain, and what is its ordering relative to other rules of the grammar?

For Copala Trique I propose that In is a higher predicate, which takes a proposition as its Patient. Thus, I am proposing that an entire proposition is the domain of the copying rule. Example 3 shows this most clearly. Its logical structure² will look something like this:³



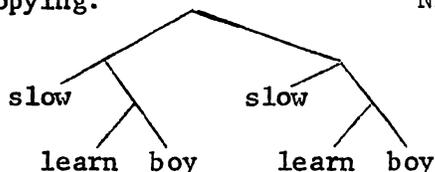
Copala Trique needs an optional rule that deletes all but the last of a string of coreferential noun phrases to handle the derivation of motion verb phrases from a sequence of two clauses: 6) ?na'³ utu³⁵ žini³ 'the boy comes scratching' (come scratch boy); 7) ?na'³ žini³ utu³⁵ žini³ 'the boy comes and he's cratching' (come boy scratch boy). The same rule can explain the

lack of a subject in example 1. Since coreferential surface objects may also be deleted in Copala Trique, the same rule can explain example 4. The occurrence of the locative phrase only once can be explained either by considering location to be another coreferential case element that is deleted, or by considering the locative to be a predicate higher than In, and therefore not within the domain of the copying rule. Example 2 can be explained if we consider the surface adverb to be a predicate intermediate between In and 'learn': it would thus have a logical structure something like this:

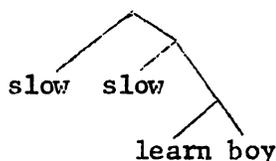


This structure would undergo a copying rule, a noun phrase deletion rule, and then an incorporation rule, which would result in the following intermediate structures (with function labels removed):

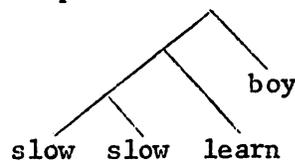
Copying:



NP deletion:



Incorporation:



A similar derivation can be proposed for example 5, by proposing that the numeral is a predicate intermediate between In and the remainder of the sentence.

If we accept the hypothesis that In is a predicate which requires a proposition as its Patient then we are led to posit a very early ordering

for the copying rule that manifests it, because the copied proposition then undergoes the regular array of transformational processes. I have not been able to find any syntactic rule that can be shown to precede copying.

There is, however, an anomaly in the order of rules that apply after copying. Noun phrase deletion would normally be expected to precede all phonological rules, such as tone sandhi. Yet in Copala Trique, the one exception to the phonological regularity of tone sandhi is found in copied forms, where the order of application of noun phrase deletion and tone sandhi seems to be reversed.

Tone sandhi is caused by a group of five pronouns. It is regressive, and applies automatically to the immediately preceding word. A word-final syllable checked by *h* that bears tone 3 or 53 loses the *h* and becomes tone 21. A word-final syllable that is open, or checked by *ʔ*, and that bears tone 3, 35, or 53 becomes tone 32. All other combinations remain unchanged. Thus, *utu*³⁵ + *zo*^{ʔ5} 'you scratch' (scratch you) becomes *utu*³² *zo*^{ʔ5} when it undergoes the tone sandhi rule. In copied forms, however, tone sandhi applies to the sequence of identical words that precedes it. Instead of the expected **utu*³⁵ *utu*³² *zo*^{ʔ5} 'you scratch and scratch', we find *utu*³² *utu*³² *zo*^{ʔ5}.⁴

There are several ways of deriving the correct forms. One way is to handle copying as a late phonological process, rather than as an early syntactic one, and order it to follow the tone sandhi rule. The principal objection to this solution is the loss of the seemingly valid generalization that the entire proposition is copied: it would be necessary to use a very complicated kind of global rule, one that looked back at several rules in the derivation in order to know what to copy, if we maintain that In is a

logical structure predicate that dominates the proposition containing the element that is ultimately copied. It would have to be incorporated into its proposition at some point, but maintained as an abstract symbol until late in the phonological rules.

Another solution is to retain copying as an early syntactic process, and then mark copied forms in some way that allows them to bypass noun phrase deletion on the first pass through the rules, delaying it until a second pass, after the sandhi rule has applied; in effect, an order-switching marking. This would be an unusual sort of rule.

A third solution is to write the tone sandhi rule as a non-automatic, global rule that works in the following way. Apply tone sandhi to the immediately preceding word, then look at the word to its left and ask if it resulted from the application of the copying rule. If yes, repeat the tone sandhi rule; if no, proceed to the next rule in the derivation.

A fourth solution is to consider the tone sandhi rule as a more common sort of global rule, namely one that applies not only when the conditioning factor is actually present, but also when it was there at some point in the derivation. Thus, the deleted pronoun, as well as the overt one, causes sandhi.

The fourth alternative is making a claim different from the other three, and examples can be constructed to test the truth of alternative 4 versus alternatives 1 - 3. Alternative 4 claims that any deleted pronoun can cause tone sandhi, not just those in copied forms. Therefore we need to know whether ?na³ utu³² zo⁵ or ?na³² utu³² zo⁵ is the correct form of 'you come scratching (come scratch you). Unfortunately, I have no way

to check this before 1973 Work Papers goes to press, although I suspect that the form without tone sandhi on the first verb is the correct one. If my intuition is correct, we still must choose among alternatives 1 - 3. If it is wrong, alternative 4 is correct.

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FOOTNOTES

¹The data in this paper are from unpublished field notes on Copala Trique, gathered on field trips to San Juan Copala, Juxtlahuaca, Oaxaca, Mexico, from 1962 to 1973 under the auspices of the Summer Institute of Linguistics. I wish to thank my husband Bruce for his helpful comments on this problem, and Donald Frantz and Richard Rhodes for reading earlier drafts of this paper, and criticizing them.

²In order to save space, I have not indicated indices and identificational propositions in the tree diagrams in this paper. I have merely inserted nouns and pronouns directly as case elements.

³An unsolved problem in this derivation is that a literal application of repeated copying will yield a geometrical series of powers of two, rather than the desired arithmetic series of natural numbers. Perhaps the rule can be specially defined to include copying only one repetition in each application.

⁴Note however that not all repetitions of identical words take tone sandhi, but only those that result from the copying rule. For example, ni³ ni³² zo⁵ 'your mother's mother' (mother-of mother-of you) does not have sandhi on ni³.