(1981), among others.

4 As he admits, the topic of a sentence, as defined in von Stechow (1981), is similar to what Chomsky (1969) and Jackendoff (1972) call the presupposition of the sentence.

5 A similar idea about the structured context set is found in Reinhart (1981). For formalization of 'salientness', see Sgall, P., E. Hajicova and J. Panevová (1986).

6 I suspect that this kind of accommodation rarely occurs in everyday conversations, but that it is not impossible.

7 For more details, see Irene Heim's class lecture notes of the Winter, 1989.

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Allomorphy in Tagalog Reduplication

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0. Introduction.

There are three forms of reduplication in Tagalog, which Carrier-Duncan (1984) labels RA, R1 and R2. In RA, the first consonant and vowel are copied, and the reduplicated vowel is always long. In R1, the first consonant and vowel are copied, but the reduplicated vowel is always short. See (1).

(1) (Carrier-Duncan 1984)

(a) RA reduplication.

li:nis	li:+li:nis	'clean'
gupit	gu:+gupit	'cut'
hintay	hi:+hintay	'wait'

(b) R1 reduplication.

kandilah	ka+kandilah	'candle'
?a:ral	?a+?a:ral	'study'
pa+sulat	pa+pa+sulat	'have someone write'

Both of these forms have straightforward analyses in a moraic templatic model of reduplication; as McCarthy and Prince (1986) show, the R1 template can be thought of as a core syllable ($\$_c$) and the RA template as a bimoraic syllable ($\$_{mm}$).

R2 reduplication is more complex. When a disyllabic word undergoes R2, both syllables are copied without modification. When a trisyllabic word undergoes R2, however, the first two syllables are copied with the following changes: (i) the final consonant of the second syllable (if any) does not appear, and (ii) the vowel of the second syllable becomes long. This is seen in (2).

(2) (Carrier-Duncan 1984)

(a) Disyllabic words

li:nis	li:nis+li:nis	'clean'
walis	walis+walis	'sweep'
pantay	pantay+pantay	'level'

in: Brengelman, F. H., Samjian, V., and Wilkins, W. (eds) (1989) Proceedings of the Western Conference on Linguistics 2.

(b) Words with more than two syllables

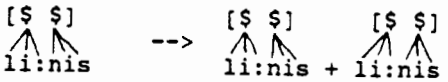
pa+labas	pala:+palabas	'cause to go out'
tahi:mik	tahi:+tahi:mik	'quiet'
baluktot	balu:+baluktot	'bent'

It appears, then, that a single template will not serve to produce these different effects. In light of this, Marantz (1982) proposes that there are two allomorphs of R2, one triggered by disyllabic words and one by longer words. McCarthy and Prince (1988:15) make this proposal more explicit, stating that

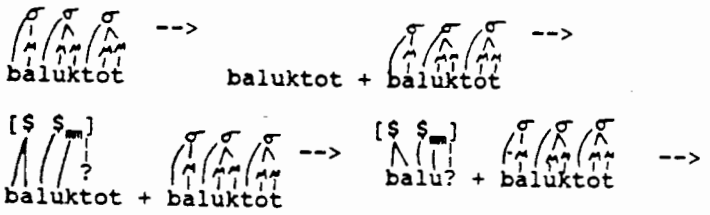
> "...minimal bases reduplicate totally, while supraminimal bases have disyllabic reduplication with final ?. The ? is realized as vowel length in Tagalog by an independently motivated rule of deletion with compensatory lengthening...."

As given here, the difference between the two allomorphs is very large: in one case the minimal base (ie, the disyllabic base, since all content words in Tagalog are at least disyllabic) is copied in its entirety, both melody and prosody, while in the other only the melody is copied and then matched to the template [$ $$_{\mu\mu}$$] (which I'll write as [$ $?] from now on). (The ?-deletion and compensatory lengthening rules will be discussed shortly.) McCarthy and Prince, then, view R2 reduplication as represented in (3).

(3) (a) Minimal base



(b) Nonminimal base



The difference between the two proposed R2 allomorphs is reduced considerably, however, if we assume with Steriade (1988) that reduplication always involves copying the entire base (Full Copy). We can then say that R2 reduplication of minimal bases involves matching the copy to the template [$ $], while for nonminimal bases it involves matching the copy to [$ $?].[1]

The goal of this paper is to argue that this difference between these proposed allomorphs can actually be eliminated entirely. As I will demonstrate, closed syllables in Tagalog are generally bimoraic; word-finally, however, they are monomoraic, the final consonant lacking any prosodic representation. Since, as we will soon see, final syllables in Tagalog are always closed, the second syllable of a minimal base always contains an unlicensed melody segment. The second syllable of a nonminimal base never contains an unlicensed melody segment. Thus minimal and nonminimal bases can be differentiated solely by the structure of their second syllable.

The crucial observation to make here is that the two proposed allomorphs [$ $] and [$ $?] corresponding to these bases are also differentiated solely by the structure of their second syllable. Generally such parallels are considered evidence against allomorphs and for an analysis involving phonologically conditioned surface variations of a single underlying morpheme. In the final section of this paper I will develop an analysis of exactly this second sort.

1. Syllable structure in Tagalog.

As a first step in our examination of the structure of the syllable in Tagalog, we should take a look at the ?-deletion rule with compensatory lengthening required for the analysis of R2 reduplication given in McCarthy and Prince (1988). Representative examples are given in (4).

(4) (Schachter and Otanes, 1972).

ba:ba?	"chin"	ba:ba:+ba	"chin?"
hindi?	"no"	hindi:+ba	"no?"
lu:to?	"cooked"	lu:tu:+ba	"cooked?"

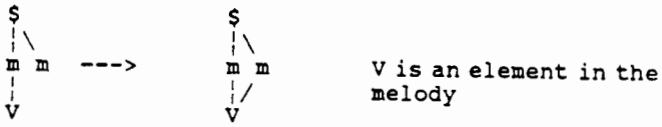
The ?-deletion rule can be given simply as in (5).

(5) ?-Deletion.

? --> ∅ / __ C

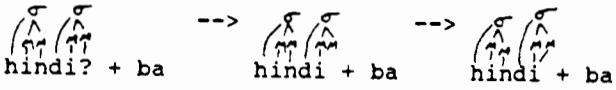
With Hayes (1989), I will assume that compensatory lengthening results from the spreading of a segment into an adjacent mora that has been previously vacated. In the case of Tagalog, this means that the coda ? must be attached to a mora, and that a rule of Mora-Filling (from left) applies to fill this mora when the ? deletes. This rule and an example are given in (6).

(6) (a) Mora-Filling (from left).



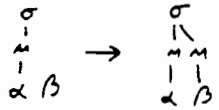
V is an element in the melody

(b) Derivation of hindi:ba from hindi? + ba



I will also assume with Hayes (1989) that universally coda consonants are never moraic underlyingly, but only receive a mora via rule. The rule that does this is Weight by Position, given in (7).

(7) Weight by Position (Hayes 1989).



I therefore assume that Tagalog has the Weight by Position rule.

We are now ready to turn to the complex relationships between stress, vowel length and syllable structure in native Tagalog words, which are summarized in (8).[2]

(8) (Ramos 1971)

gutóm "hungry" gú:tom "hunger" puntáh "go to"

		CV	CVV	CVC
word-final	stress	--	--	gutóm
	no stress	__	__	gú:tom
not word-final	stress	--	gú:tom	--
	no stress	gutóm	*	puntáh

* unstressed long vowels only appear with RA and R2 reduplication and compensatory lengthening

The patterns to notice are the following: (i) word-final syllables are always closed[3]; (ii) closed syllables are not stressed (with one exception); (iii) word-final syllables form the one exception to (ii).

The table in (8) suggests another generalization: (iv) vowel length is predictable, appearing only in stressed syllables (and in other cases, indicated by the * in (8), to be discussed later). That (iv) is indeed correct (ie, that stress affects vowel length and not the other way around) is seen in the data in (9), which can only be understood as an example of stress shift due to suffixation, as a shift in vowel length from one syllable to another is impossible to describe formally.

(9) (Ramos 1971).

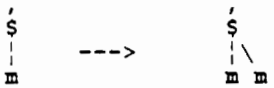
bá:sah ("read") + in --> basá:hin ("to read")

lá:pit ("come near") + an --> lapí:tan ("approach")

Underlyingly, then, open syllables in Tagalog are monomoraic.

The lengthening of the vowel in stressed open syllables must be explained through the combined action of a Mora-Insertion rule, through which a stressed syllable gains a mora, and the Mora-Filling rule, already given above in (6). Mora-Insertion is given in (10) below.

(10) Mora-Insertion.



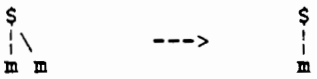
I now return to the patterns (i)-(iii) seen in (8) above. The lack of any word-final open syllables, noted in (i), may be explained by a constraint such as the one given in (11).

(11) Constraint on final segment[4].

$$* \; V]_{\omega d}$$

The unusual fact noted in (ii), that closed syllables in Tagalog avoid stress, can be understood if we assume that the rule of Mora-Insertion is obligatory whenever a syllable is stressed. Thus stress is blocked from falling on a closed syllable, since this would result in the insertion of an illegal third mora. If this is accepted, then an explanation for (iii) immediately suggests itself: the word-final syllable, which in Tagalog is always closed, may be stressed because it is monomoraic. This can be arranged through a rule of Mora-Deletion, given in (12), which leaves the word-final consonant without prosodic structure.

(12) Mora-Deletion.



This rule would apply after any rule which adds a mora to the final syllable, such as Weight by Position or Mora-Insertion. Sample derivations are given in (13).

(13)

(form after syllabification and stress-assignment)	 linis	 hindi?
Weight by Position	 linis	 hindi?
Mora-Deletion	 linis	 hindi?

Mora-Insertion	 li nis	 hindi?
Mora-Deletion[5]	N/A	 hindi?

It may seem odd that I suggest that the word-final syllable becomes monomoraic through mora deletion rather than mora extraprosodicity. Actually there is a very good reason for arguing against the latter. If the final mora were extraprosodic, we would expect that upon being stressed it would gain an extra mora without problem, thus resulting in a superheavy CVVC syllable. That the vowel remains short even when the final syllable is stressed indicates that extraprosodicity is not the mechanism operating here.

The upshot of the argument in this section is this: due to the action of a word-final Mora-Deletion rule, all word-final syllables in Tagalog are monomoraic. Specifically, the final segment is not prosodically licensed. This means that in minimal bases, which are disyllabic, the second syllable ends in an unlicensed melody segment, while in nonminimal bases, which have more than two syllables, the second syllable does not have an unlicensed melody segment.

2. R2 reduplication.

In this section I will give an analysis of R2 reduplication involving only one underlying morpheme. The alternative surface forms will be seen to result directly from the structure of the base.

I propose that the R2 template is [$ $?] for all bases. After the base is copied in full, both melody and prosody, this template maps over the copied prosodic structure. Other rules affecting prosody, in particular Weight by Position, then apply. This is analogous to the reassignment of stress and resyllabification that are assumed to occur universally after morphemes are concatenated. Finally, all extratemplatic elements in the copy are deleted.

What does it mean for inserted prosodic structure (however it may be inserted) to "map over" the prosodic structure of another morpheme? Because I employ both the prosodic templates of McCarthy and Prince (1988) and the notion of Full Copy from Steriade (1988), I must face this question directly. Thus in (14) I give two formal mapping principles.

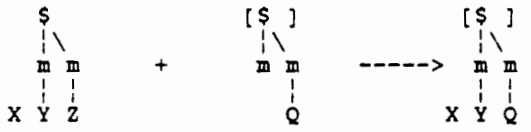
(14) Principles for mapping prosodic structure P_1 over prosodic structure P_2

A. Identical prosodic nodes N_1 and N_2 are conflated into a single node N that dominates the daughters of N_1 and N_2

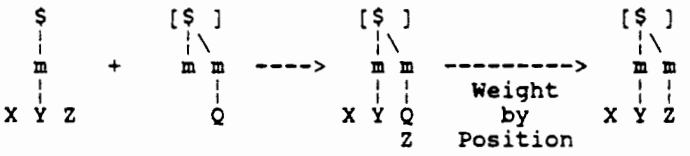
B. If N now dominates two melody segments, the daughter of N_1 is deleted

It seems reasonable to assume first of all that identical nodes in the two prosodic hierachies are matched, resulting in conflation into one node which dominates the daughters of the original nodes. Secondly, if the daughters of a conflated node are not identical, in particular if a mora has been conflated with another so that the resulting single mora dominates two different melodic segments, the daughters of the node that is being mapped over are deleted; in other words, any segment linked to the "new" mora writes over any segments linked to the "old" mora. This is similar in some ways to the procedure of "melody overwriting" that McCarthy and Prince (1988) posit for the Arabic broken plurals. In (15) I provide two schematic examples.

(15) (a) Mapping over a base whose melody segments are all prosodically licensed



(b) Mapping over a base with an unlicensed melody segment

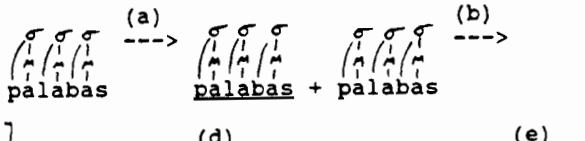


Thus deriving a reduplicated R2 form from a base involves the steps given in (16).

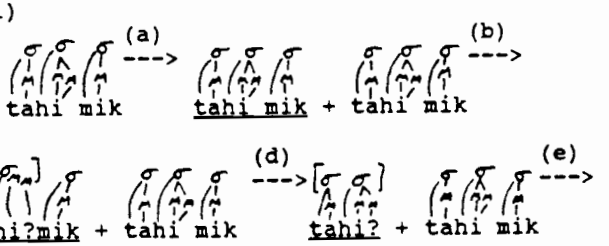
(16) (a) Copy the entire base, prosody as well as melody
(b) The template [$ $?] maps over the copied prosody
(c) If applicable, Weight by Position creates a new mora which maps over the old one created in step (b)
(d) All extratemplatic copied material is deleted
(e) ?-Deletion applies (with compensatory lengthening)

In order to test this model, we have to check four cases, namely cases where the second syllable of the base is: (i) open and monomoraic (as in palabas), (ii) open and bimoraic (as in tahi:mik), (iii) closed and bimoraic (as in baluktot) or (iv) closed and monomoraic (as in li:nis). In (17), these four words are worked through the steps given above, correctly deriving pala:-palabas, tahi:-tahi:mik, li:nis-li:nis and balu:-baluktot.

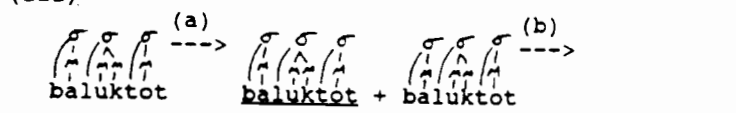
(17) (i)

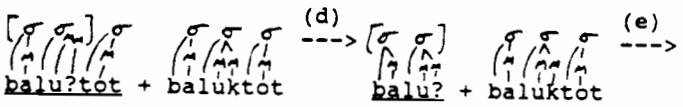


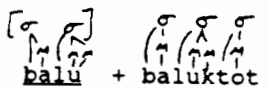
(ii)



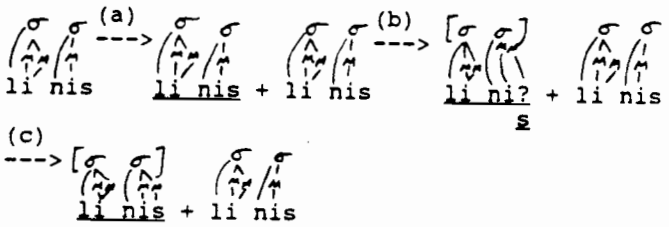
(iii)







(iv)



3. Conclusion.

Such apparent allomorphy in reduplicative morphemes is not limited to Tagalog. McCarthy and Prince (1988) cite Dyirbal, Cebuano and Makassarese as other possible examples. It may well be that allomorphy is necessary to explain reduplication in these languages. I have tried to show, however, that a close examination of the syllable structure in Tagalog indicates that such an analysis for this language is not desirable and that in fact, an alternative analysis that does not rely on R2 allomorphs is possible.

NOTES

*I'd like to thank Diana Archangeli, David Basilico, Mike Hammond, Rich Janda, and Jane Tsay for useful ideas and discussions. I am, of course, solely responsible for errors.

[1]In both templates the $ node will be satisfied if filled with a syllable of any weight. This makes the prediction that the structure of the first syllable of nonminimal bases is transferred intact in R2, just as it is with minimal bases. That is, just as vowel length is preserved in the first syllable of li:nis --> li:nis-li:nis and the final consonant is preserved in the first syllable of pantay --> pantay-pantay, the same should be true for hypothetical trisyllabic words like li:nisok --> li:ni:-li:nisok and pantasok --> panta:-pantasok. I have not been able to find any data with which I could either confirm or refute this prediction, however.

[2]Foreign borrowings are exceptional in many ways. For example, native stems are always stressed on one of the final two syllables, while foreign stems may be stressed on the antepenult: Amérika (Ramos, 1971). Moreover, in some borrowings stress appears on a nonfinal closed syllable: bénta (Spanish vénta "sale"), sínko (Sp. cínco "five") (Ramos 1971). In others, stress is shifted from its place in the source word so as to conform to the usual Tagalog pattern: libró (Spanish líbro "book"), martés (Spanish mártes "Tuesday") (Schachter and Otanes 1972). For still other exceptional characteristics involving intonation and vowel length, see Schachter and Otanes (1972). The generalizations given in this paper are therefore meant to apply to native morphemes only.

[3]Words represented orthographically as vowel-final, such as "aso" (smoke), are actually pronounced with final h (thus, [?asoh]) (Schachter and Otanes 1972). (Note that orthographically vowel-initial words always begin with a consonant as well.) Whether this h is inserted or underlying is irrelevant in the present discussion.

[4]Making this constraint any more formal would require rethinking the model of syllable structure I assume, adopted in toto from Hayes (1989) and McCarthy and Prince (1986, 1988). A vowel can't be identified as such solely on the melody tier, since words in Tagalog may end in a [-cons] segment: hintay (see (1) above). Unfortunately, however, in the model I'm assuming it can't be identified at the prosodic level, either, since, as we'll see, rhyme vowels and consonants in Tagalog must be assigned the same prosodic unit (a mora).

[5]Of course, since hindi? + ba becomes hindi: ba, as seen in (4) above, the ? must become moraic again via Weight by Position after the cliticization of ba.

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A FUNCTIONALIST ARGUMENT FOR THE AUTONOMY OF GRAMMAR

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Two approaches to grammatical description coexist uneasily in the field of linguistics today. For want of better terms, they could be called the 'formalist' and the 'functionalist'. The former approach, whose foremost exponent is Noam Chomsky, is exemplified by the cluster of theories that come under the heading 'generative grammar'. The key concept of the formalist approach is the 'autonomy of linguistic form', the idea that central aspects of language can and should be characterized as a formal system whose primitive elements and governing principles are not derivable from or reducible to concepts outside that system.

The concept of autonomy of form has both a broad and a narrow interpretation. Narrowly, it is sometimes referred to as 'the autonomy of syntax'. In this view, syntactic patterning is not explicable on the basis of the meanings or discourse functions of the elements involved, nor is there held to be a one-to-one correlation between syntactic constructs and semantic constructs and/or discourse function. In other words, the syntax-semantics-discourse interface is seen as a complex one.

Autonomy in its broad sense refers to properties of grammar as a whole. In this view, grammar (i.e. syntax, phonology, morphology, and certain aspects of semantics) forms a well-defined system, which, while interacting with systems based in discourse, cognition, sociology, and so on, is not derivable from any of them.[1]

These two senses of autonomy are logically independent. Thus one might plausibly accept the broad interpretation of autonomy, but reject the narrow, which I believe to be the position of Wierzbicka (1980). Conversely, one could logically espouse narrow autonomy, but reject broad autonomy, though I know of no one who has taken such a position.

Finally, most, but by no means all, formalists accept the idea that the central principles governing linguistic form are innate, and that these innate principles, known as 'universal grammar' (UG), help shape the acquisition of particular grammars.

The functionalist wing of the field, while quite diverse in many respects, shares the rejection of autonomy in both its forms. In its place, it advances the belief that grammatical patterning is grounded in what is seen as the most important 'function' of language, namely communication. Thus Tomlin (1989) dismisses autonomy in its narrow and broad forms respectively in the following two quotes, which seem