'DISCONTINUOUS' REDUPLICATION IN ULU MUAR*

LIONEL WEE

University of California, Berkeley

0 Introduction

The theory of Prosodic Morphology (McCarthy and Prince 1986, 1990) treats reduplication as the affixation of a prosodic template to a base. The affixation of a CV skeleton (cf Marantz 1982) is rejected on the grounds that 'no language process ... is known to depend on the raw number of segments in a form' (1986:3). On the other hand, in the realm of nonphonological allomorphy as well as phonology proper, it is the case that rules may count moras, syllable or feet (1986:2). In other words, rules count prosodic units, never segments. For a detailed discussion of the reasons for rejecting segments, see McCarthy and Prince 1986. Instead, I present below the conditions on the association of segments to a template in order to show how Prosodic Morphology is able to provide a highly constrained account of reduplication phenomena.

0.1 Prosodic Morphology

In reduplication, a prosodic template is affixed to a base. This affixation triggers off a complete copy of the melodic elements of the base, which then go on to link up with the template. There is a tendency called Maximization of Association (MA) where as many elements are associated as possible (McCarthy and Prince 1986).

However, this association process is constrained by the No Skipping Condition (NSC) and the Satisfaction Condition (SC). The NSC states that association of melodic elements to the template must be continuous. If a particular melodic element, for some reason, fails to associate, then the association stops. It is not possible for the association process to 'skip' over the recalcitrant melodic element in order to continue the association process, even if there happens to be a melodic element 'further down' that can satisfy the template. And the SC requires that all the elements in a template be satisfied. In other words, there must enough (appropriate) melodic elements to satisfy the template. Otherwise, the entire reduplication process fails and nothing is licensed. We see, then, that the NSC and the SC jointly serve to constrain the kinds of reduplication possible.

In so far as our goal is to seek a constrained account of reduplication phenomena, it is therefore desirable that both the

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NSC and the SC be maintained. Thus, any claim that the NSC and the SC need to be drastically relaxed or abandoned even, needs to be examined carefully. Such a claim can be found in Kroeger's discussion of reduplication in the Malay dialect Ulu Muar.

1 Ulu Muar And Kroeger's Solution
1.1 The Data
Kroeger's discussion of Ulu Muar is based on data taken from Hendon's (1966) monograph. The following are examples of a reduplication process that, according to Kroeger, pose major problems for the NSC and the SC.

(1)				
	a.	sie?	si?-sie?	'is torn repeatedly'
	b.	tari?	ta?-tari?	'accordion'
	c.	bele?	be?bele?	'is repeatedly turned over'
	d.	cakap	ca?-cakap	'talks'
	e.	sikit	si?-sikit	'various small quantities'
	f.	galap	ga?-galap	'repeatedly dark'
	g.	kawan	ka°-kawan	'friend'
	h.	dayaŋ	dan-dayaŋ	'hand-maidens'
	i.	diam	din-diam	'remains silent'
	j.	tanam	bo-tan-tanam	'gardens regularly'
	k.	paraŋ	pam-paraŋ	'sword-like decoration'
	l.	suko	su-suko	'to be enjoying (oneself)'
	m.	bilo	bi-bilo[1]	'whenever'
	n.	pukω	pu-pukω	'is repeatedly hit'
	o.	ula	*	'snake'
	p.	ameh	*	'gold'
	q.	adi?	*	'younger sibling'

Examples a-k show that the first CV of base are copied, as well as the final C. If the final C is a stop, it is neutralized to a laryngeal. If it is a nasal, it becomes homorganic to the first C of the base. This appears to be a violation of the NSC because it implies that the process is only sensitive to both edges of the base: the initial CV and the final C. Any intervening material is ignored.

Examples l-n show that where the base has no final consonant, the copy, too, has no final consonant. This is

problematic for the SC because although the presence of a consonant in initial-position is obligatory (as o-p show, vowel-initial stems cannot reduplicate), the presence of a consonant in final position is not (since vowel-final bases can reduplicate). The implication is that the part of the reduplication template that associates with the final C must remain unfilled for vowel-final bases.

1.2 Kroeger's Solution

To deal with the data just presented, Kroeger first assumes that both the initial CV and the final Cs which survive the reduplication process are licensed by the reduplication template itself. This is what leads him to characterise the reduplication as 'discontinuous'. He proposes to weaken the NSC by limiting cases of 'discontinuity' to just where the association is between edge elements. He recognizes that the Ulu Muar phenomenon 'does not involve ARBITRARY gaps or leaps in the copying process. Copying in these examples is strikingly and crucially edge-governed' (1989:198). One possibility, as Kroeger himself notes, is to apply the rule of Edge-In Association (Yip 1988) which will associate the initial and final melodic elements with the initial and final free slots, anchoring the two ends. Association then continues inwards until all slots are filled.

While such a move would allow us to maintain the NSC, albeit in a much weaker form, it is still problematic because of the requirements of the SC since the presence of the final consonant seems to be optional. And as Kroeger rightly points out, this violates a fundamental assumption of a templatic approach such as Prosodic Morphology: the persistence of templatic slots. That is, these templatic slots MUST always be filled if an appropriate melodic element is available. Thus, an edge-in approach would predict incorrect results for vowel-final stems so that a form like *suko* might be expected to produce either *so-suko* or *suk-suko*, depending on whether the association is melody-driven or template-driven (Kroeger 1989:199). As we saw, the correct form is actually *su-suko*. He then concludes 'that a template-and-association model of reduplication cannot provide an adequate analysis of these facts. We must look for a non-templatic solution' (1989:199).

Kroeger then proposes to use a parse (McCarthy and Prince 1990), which is a mechanism for prosodic circumscription. He invokes not just one, but two parses to deal with Ulu Muar. His solution is as follows. First, there is a full copy of the base. Then two separate parses apply

simultaneously to the copy. One of the parses will parse a light syllable (CV) on the left edge, while the other will parse a single consonant on the right edge. The intervening residue is deleted. In the case of a vowel-final stem, the second parse will simply fail to parse anything, and nothing would be licensed on the right edge of the copy. The following (p197) is one of his examples:

(2)   a. Base   diam

        b. Full Reduplication   diam-diam

        c. Parse (Left Edge: CV,
            Right Edge: C)   [di]a[m]-diam

        d. Delete Residue   [di][m]-diam

        e. Syllabify, Neutralize, Assimilate   din-diam

What is of interest to us is the way Kroeger's solution deals with the NSC and SC violations. Since Kroeger has weakened the NSC to allow it to be violated in edge-governed situations, the fact that the two parses ignore the intervening material is not a problem for him. Also, since he is using parses rather than templates, violation of the SC is no longer a problem either.

1.3   Problems With Kroeger's Solution

There are a number of problems with Kroeger's solution. I will mention the more specifie problems before going on to the more general ones.

First of all, Kroeger is not clear on whether his left edge parse is to be defined prosodically (in terms of a light syllable) or segmentally (CV). In his discussion of Ulu Muar, both ways of referring to the parse are used. Note, however, that the right edge parse must be defined segmentally (C) in order for it to not license a vowel. Apparently, then Kroeger's solution either forces us to mix prosodic and segmental criteria, or it must be segmentally defined only. If the former is the case, this mixing of 'apples and oranges' has the undesirable consequence of unconstraining the nature of the parse. If the latter is the case, then it is open to all the criticisms of segmentally defined processes that have been mentioned in McCarthy and Prince (1986).