Echo Epenthesis and Reduplication

Echo epenthesis, where an epenthetic element is identical to a neighboring vowel, is a common process in natural languages, as exemplified by the data from Japanese loanword epenthesis in (1). In recent work, it has been suggested that echo epenthesis involves the same correspondence relationship as reduplication (Kitto and de Lacy 1999). This paper will show that, though echo epenthesis superficially resembles reduplication, it has properties that are not shared by reduplication:

i) blockage by certain types of segments
ii) lack of long-distance consonantal echo
iii) always echo the closest target

To account for these characteristics, I argue that echo epenthesis always involve spreading of a V-Place as in (2a) (Clements and Hume 1995), while reduplication involves copying via correspondence (McCarthy and Prince 1995) as in (2b). To derive this asymmetry, I propose that reduplication is the only source of correspondence between output segments within a same word, so that epenthesis cannot arise via copying.

i) *Blockage by intervening segments*: Echo epenthesis can be blocked by certain types of intervening segments, while reduplication is not. A good illustrative case is found in Japanese, where echo epenthesis in (1) fails when non-laryngeal segments intervene as in (3): In such cases, a default [u] is inserted instead (Ito and Mester 1999), a typical case of laryngeal transparency (e.g., Steriade 1987). If we assume strict locality - that spreading never skips intervening segments - this contrast is easy to account for. As illustrated in the tableau (4a), the reason that spreading is blocked by non-laryngeal segments is due to an undominated constraint that militates against the V-Place node associating with a non-laryngeal segment. On the other hand, as shown in (4b), spreading across a laryngeal segment is allowed because a constraint against a V-Place node associating with a laryngeal segment is low-ranked (Gafos and Lombardi 1999). Thus, treating echo epenthesis as spreading explains the blockage by intervening segments in a simple way (Shademan 2003). On the other hand, since reduplication never displays this type of blocking, it must involve a different mechanism, namely, copying with concomitant correspondence.

ii) *Lack of long-distance consonantal echo*: Long-distance consonantal echo epenthesis is never attested e.g., no language resolves hiatus by copying a neighboring consonant, as in /pao/→[pa<u>p</u>o] and /tao/→[ta<u>t</u>o]. On the other hand, long-distance copying of a consonant is ubiquitous in reduplication, as in [paa-paa] in Axininca Campa (McCarthy and Prince 1993). Again, assuming strict locality of spreading, the absence of long-distance consonantal echo epenthesis naturally follows. According to NíChiosáin and Padgett 1997 and Gafos 1998, as shown in (5), if a C-Place spreads onto an intervening vowel, then the vowel is now associated with consonantal constriction, and it is by definition no longer a vowel. Thus, long distance consonantal echo epenthesis would inevitably turn the intervening vowel into a consonant, with consequent serious disruption of syllable structure. By contrast, reduplication is free to copy consonants, as a copied C-place need not be imposed upon intervening segments.

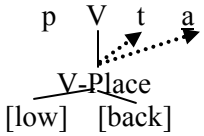
iii) *Always echoing the closest target*: echo epenthesis always targets the closest vowel (out of 65 patterns surveyed); i.e. a mapping like /patet/→ [pateta], where the most sonorous vowel is echoed regardless of its position, is never attested. This should be contrasted with a reduplicative pattern in Nakanai where the requirement to copy the most sonorous vowel takes precedence over copying the closest vowel, as in (6). Given strict locality of autosegmental spreading, the impossibility of /patet/→ [pateta] follows, as spreading [a] onto [e] necessarily changes [e] into [a], giving rise to [patata]. By contrast, reduplication, which involves copying, can exhibit such a pattern, as strict locality is not an issue.

In sum, echo epenthesis has properties distinct from reduplication, and thus it is best analyzed as spreading while reduplication must be analyzed as copying. This conclusion has two consequences for current phonological theory. First, reduplication is the only source of correspondence in the same word, as echo epenthesis cannot be achieved via correspondence; it thus suggests reexamination of any analysis that uses word-internal non-reduplicative correspondence (e.g. Kitto and de Lacy 1999; Kawu 2000; Rose and Walker 2001). Second, since echo epenthesis is best captured as spreading, it shows that spreading still plays a vital role in phonological theory (cf. Bakovic 2000; Kitto and de Lacy 1999; Krämer 1999).

(1)

bahh<u>a</u>	>	Bach		ihh<u>i</u>	>	ich (first person nominative)
doh<u>o</u>	>	doch (yes)		raatoburuh<u>u</u>	>	Radbruch

(2) a. Spreading



b. Copy via correspondence

/p a_i t/ → p a_i t $\underline{a_i}$

(3)

op<u>u</u>timar<u>u</u>	>	optimal
bas<u>u</u>	>	bus

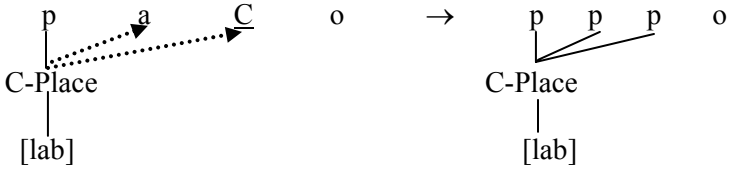
(4a)

/bʌs/	*V-PLA WITH NON-LARY	DEP	*V-PLA WITH LARYNGEAL
a. basa V-pl	*!		
b.☞ bas<u>u</u>		*	

(4b)

/bax/	*V-PLA WITH NON-LARY	DEP	*V-PLA WITH LARYNGEAL
a. ☞ bahh<u>a</u> V-pl			*
b. bahh<u>u</u>		*!	

(5)



(6) Nakanai reduplication (Spaelti 1997 after Johnston 1980)

a Copy V_1 by default

buli	b<u>u</u>-buli	'roll'
velo	v-<u>e</u>l-elo	'bubbling forth'

b. Copy V_2 if V_2 is more sonorous than V_1

beta	b<u>a</u>-beta	'wet'
kusa	k<u>a</u>-kusa	'shouting'

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