

The consequences of dissimilation in Sundanese*

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1 Introduction

Studies of phonological assimilation have played a central role in the development of current phonological theory. As widely discussed in the literature, assimilation is an extremely common phonological process cross-linguistically and therefore an adequate phonological theory should represent it simply and naturally. This has led to the current view of assimilation as spreading (Clements 1976; Goldsmith 1976; Hayes 1986; among others). Much less work has addressed itself to the issue of dissimilation, but recently it has been suggested that dissimilation should be analysed as delinking followed by default fill-in (Odden 1987; Poser 1987; McCarthy 1988; Yip 1988). This approach is schematised in (1):

(1) Dissimilation as delinking



Missing value filled in by default: $[\emptyset F] \rightarrow [-F]$

In the case of two tier-adjacent identical feature specifications, one of the specifications is delinked. The missing value is then filled in by a default rule. Dissimilation thus consists of two independent processes, delinking and default fill-in.

It has been argued that dissimilation is motivated by the Obligatory Contour Principle (OCP), the principle that adjacent identical elements are prohibited (McCarthy 1985, 1988; Kaisse 1988; Yip 1988). Yip (1988: 73), following earlier work by McCarthy, takes the position that 'all rules involving identity of target and trigger with an output in which they are no longer identical and adjacent are OCP-triggered rules'. It is thus an OCP violation which requires delinking of one of the offending specifications in a sequence of identical feature specifications. When this is followed by default fill-in, this yields dissimilation. 'Another possible result of deleting a feature matrix occurs if deletion is followed by application of redundancy rules that insert the opposite value of the

deleted feature(s)... This of course is dissimilation, and such rules are widely found in natural languages' (Yip 1988: 80-81).

Yip discusses what kind of language data would falsify the claim that such delinking is indeed motivated by the OCP:

The kind of case that would, I think, require a weakening of this claim would be a language with the following properties:

- (i) Dissimilation of F: $\alpha F \rightarrow -\alpha F / -\alpha F$
- (ii) Demonstrable morpheme-internal $\alpha F \alpha F$ sequences, as opposed to doubly linked αF
- (iii) would show that the OCP did not operate on $\alpha F \alpha F$ sequences. It thus could not act to trigger a rule like (i).

(Yip 1988: 73)

Turning Yip's prediction around, if dissimilation is motivated by the OCP, then other aspects of the phonology, as well as underlying phonotactic patterns, should display the same restrictions. Thus we need to examine rules of dissimilation in the broader context of the lexical structure and phonology of the languages in which such rules obtain. (See Goodman 1992 for a similar argument.)

Sundanese (an Austronesian language, spoken in West Java, Indonesia) displays a case of dissimilation in the form of the plural marker. At first blush, the factors conditioning the shape of this formative appear to violate the OCP; yet upon closer inspection, we will see that the constraints motivating the dissimilation hold more generally in the lexical and phonological representations of Sundanese. Thus Yip's prediction is borne out.

In Sundanese, a formative $=ar=$ or $=al=$ marks the plural, as exemplified in (2), where $=$ indicates infixation:

- (2) a. kusut ar → k = ar = usut
 'messy' PL
 dahar al → d = al = ahar
 'eat' PL
 litik al → l = al = itik
 'little' PL
- b. visualisasi 'visualise'
 di- visualisasi-kin ar → di-v = ar = isualisasi-kin
 PASS-visualise- VBL SUFF PL
 'visualised'

As exemplified in (2a), the plural marker, either $=ar=$ or $=al=$, is usually infixated after the first consonant of the root. The process is highly productive, as exemplified in (2b) by the pluralisation of a recent borrowing such as *visualisasi*. Verbs, adjectives and a few nouns exhibit such infixed forms.¹ The observed pattern of allomorphic alternation is triggered by both assimilation and dissimilation. As this morphophonemic process is productive and regular, it should be accounted for by rule. The

The pattern of infixation also provides an adequate account of the

The structure of the process of infixation. In §3, the proposal is that the allomorphy resulting from the process should be argued that $=ar=$ should be proposed. This alternation is proposed. This is not motivated by the constraints of markedness and underspecification, as concluded in §5. The data from Sundanese speakers from where what is considered

2 Infixation

Sundanese has a rich system of infixes. Both prefixes and infixes, on the other hand, linguistically and are fairly common, on the other hand, their structural representation is different. The shape VC: $=ar=$ / $=a$ is a marker is productive and the difference between Sundanese, as exemplified

- (3) a. CV affixes at
 i. CV+V-in
 ii. CV+C-in
- b. VC affixes at
 i. VC+V-in
 ii. VC+C-in

In (3) we observe that the process is prefixed, whether the root is a VC or a CV. In contrast, a VC affix is not prefixed to the initial root (3b.i), but

consonant-initial root.³ A generalisation emerges: the placement of infixes in Sundanese is prosodically conditioned and has the net effect of maximising open (CV) syllables and avoiding unallowable CC sequences. (Anderson 1972 makes a similar observation.) An adequate account of infixation in Sundanese needs to incorporate this generalisation.

McCarthy & Prince (1986, 1990) argue that infixation should be analysed as melodic extraprosodicity. Following this view, they sketch out an analysis of infixation in Sundanese, whereby the initial C is extraprosodic; the infix is really a prefix; and the ONSET RULE, which resyllabifies a consonant to become a syllable onset, applies twice. Their analysis is exemplified in (4) (following McCarthy & Prince 1986: 48):

- (4) a. [niʔis] 'to cool oneself' SG
[nariʔis] PL
- b. σ
 $\swarrow$
 a r
- c. a r
 $\swarrow$ $\searrow$
 σ σ σ
 $\swarrow$ $\downarrow$ $\swarrow$
 (n) i ʔ i s [nariʔis]

The infix is proposed to have the shape in (4b). (Note that the proposed representation seems to assume underlying syllabification.) The root-initial /n/ is extraprosodic, and the Onset Rule applies twice, yielding the derived representation in (4c). Basic to this analysis is Planar Segregation (see McCarthy 1989), which assumes that separate morphemes constitute independent phonological planes. In support of their analysis, McCarthy & Prince (1986: 48) claim that 'the representation of the affixal melody on a separate tier is independently required by Sundanese nasal harmony'.⁴

There are a number of problems with this view:

(i) The basic insight that the infix is located prosodically, not melodically, is missed. The pattern of infixation has to do with syllable structure, not melodic structure, as implied by McCarthy & Prince's view of melodic extraprosodicity. Under their account, all consonant-initial verbal and adjectival roots in the language would need to have an extraprosodic initial consonant.⁵

(ii) A widely held view is that there can be no phonological interaction between separate planes, before Plane Conflation (see McCarthy 1989 and Yip 1988 for discussion). Yet several phonological rules of Sundanese refer to both the infix and the rest of the form, including nasal harmony. These processes include both lexical and postlexical ones. This would require Plane Conflation before the relevant phonology, but there is no evidence that the intervening unconfliated stage exists in the derivation.

(iii) The facts of nasal harmony do not constitute an argument in favour of the plural infix being represented on a separate tier (plane). As argued by Cohn (1990), the facts of Sundanese nasal harmony can be accounted for in a straightforward manner by a cyclic analysis within the framework of Lexical Phonology. Nasal harmony is shown to be a lexical rule,

applying both before and after the infix, directly for the apparent

I propose, instead, a syllable-based analysis of infixes in Sundanese. Infixes are placed before the first mora of a syllable. In the case of *di-*, it is simply a syllable (= *um* = or = *in* = finally) or a marked syllable before the first mora of a syllable. The placement of the infix is known about the allowable syllable structure only affixes of the shape *di-* (mora). How the distinction is formally encoded is an

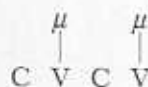
In order to see how syllabification are needed following syllabification

(5) Syllabification

Basic syllable structure

- Assign a mora to each syllable.
- Each mora is a syllable.
- Associate a pitch accent (as ONSET).
- Associate a final accent (as RHYME).

a.



c.



Following Hyman (1990), I argued to be the basic representation of stress, the aspects of syllabification in language with no underlying element by rule (5a). Such are no long vowels and

applying both before and after infixation. Such an analysis accounts directly for the apparent overapplication of the rule.

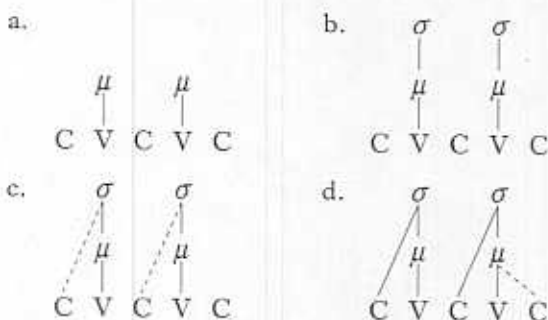
I propose, instead, a single-plane analysis of Sundanese infixation. The infixes in Sundanese are basically like prefixes, except that they are located before the first mora of the root. Infixation results in reapplication of the rules of syllabification. If a prefix constitutes an unmarked syllable, as in the case of *di-*, it is simply concatenated. If it constitutes an unallowable syllable (= *um* = or = *in* =, unless followed by a homorganic stop or word-finally) or a marked syllable (= *ar* =), the affix is prosodically located before the first mora of the root. While this analysis accounts correctly for the placement of the infix, it does not offer an explanation of how the speaker knows about the relationship between morpheme shape and allowable syllable structure. (As pointed out by an anonymous reviewer, only affixes of the shape VC, not CV(C), are located with respect to the mora.) How the distinction between affixes of the shape VC and CV is formally encoded is an issue that merits further attention.

In order to see how the analysis works, explicit principles of syllabification are needed. Following Hayes (1989), I will assume the following syllabification algorithm:

(5) Syllabification

Basic syllable structure in Sundanese is (C)V(C).

- Assign a mora to each vocalic element.
- Each mora is dominated by a syllable.
- Associate a preceding consonant directly to the syllable node (as ONSET).
- Associate a following consonant to the preceding mora (into the RHYME).



Following Hyman (1985) and McCarthy & Prince (1986), the mora is argued to be the basic unit of phonological weight, basic to the representation of stress, tone and the syllable. As widely noted, certain aspects of syllabification are universal and others language-specific. In a language with no underlying moras, a mora is assigned to each vocalic element by rule (5a). Sundanese allows only one mora per syllable, as there are no long vowels and coda consonants do not affect the weight count;

thus each mora is dominated by a syllable (5b). Hayes (1989) captures the fact that onsets (typically) do not contribute to phonological weight by associating onset consonants directly to the syllable node (5c). Finally, in a language where coda consonants do not contribute weight, an unsyllabified consonant following a vocalic element is associated to the preceding mora (5d).

Following this view of syllabification, the plural marker of Sundanese can be correctly positioned, occurring initially with a vowel-initial root or following the first consonant of a consonant-initial root, as shown in the derivations in (6):

(6) Sample derivations

UR	a. dahar	b. ayim	c. daman
syllabification			
affixation			
syllabification			
output	[di\$da\$har]	[a\$ra\$yim]	[da\$ra\$man]

(\$ = syllable division)

Assuming that syllabification is either an EVERYWHERE PROCESS or applies cyclically, the root is syllabified at the beginning of the derivation, as shown in each of the three examples. Affixation then occurs, triggering a reapplication of the syllabification algorithm. In (6a), *di-* is prefixed and syllabified as an additional syllable. In (6b) *=ar=* is positioned before the first mora of the root. The vowel is assigned a mora and a syllable, while the consonant is syllabified as the onset of the first syllable of the root. In (6c) *=ar=* is again located before the first mora of the root, necessarily detaching /d/ from the first root syllable. The vowel is again assigned both a mora and a syllable and then (5c) is applied twice, making /d/ the onset of the first syllable of the word and /r/ the onset of the first

syllable of the root. While application of the Onset syllabic structure is assumed to follow from the labification follow from the

We see then that the syllable structure of the first mora of the root is motivated principles of syllabification. The location of the plural marker in the prosodic structure, therefore, is determined by the Sundanese on a separate phonological domains in which Sundanese and avoids an Conflation.⁶

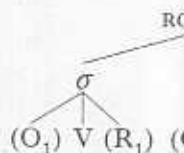
3 Allomorphy of the

As exemplified above in the Sundanese plural marker =ar= or =al=. This can be characterised in terms of the location of the consonant and vowel in the syllable structure (7a, b), respectively, and (8):

(7) a. Sundanese consonant

p	t	c	k
b	d	j	g
m	n	ɲ	ŋ
		s	
		l/r	
w		y	

(8) a. Canonical root

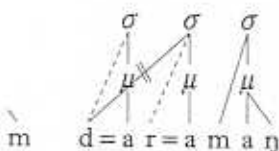
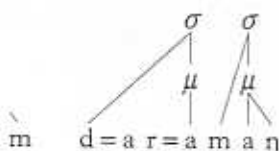
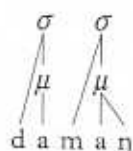


O = onset, R = r
O₁, O₂ = any consonant
R₁ = nasal homophone
few others
R₂ = most consonants
C₂ = /r/, /l/ after

ayes (1989) captures the phonological weight by the node (5c). Finally, in the case of a light syllable, an unsyllabified mora is associated to the preceding syllable.

al marker of Sundanese with a vowel-initial root or a light root, as shown in the

c. *daman*



[da\$ra\$man]

syllable of the root. While this approach is similar to McCarthy & Prince's application of the Onset Rule, it differs in the fact that no underlying syllabic structure is assumed for the infix and all aspects of its syllabification follow from the general rules of syllabification in the language.

We see then that the simple assumption that infixes are located before the first mora of the root in Sundanese, together with independently motivated principles of syllabification, account directly for the observed location of the plural marker in Sundanese. If we refer directly to the prosodic structure, there is no motivation for representing the infix in Sundanese on a separate plane. This accounts directly for the morphological domains in which phonological rules are observed to apply in Sundanese and avoids an unmotivated stage of the derivation before Plane Conflation.⁶

3 Allomorphy of the plural marker

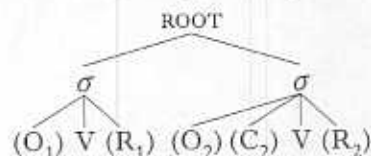
As exemplified above in (2a), the plural marker may take the shape of $=ar=$ or $=al=$. This allomorphic alternation is a systematic one and can be characterised in terms of the canonical root pattern of Sundanese. The consonant and vowel inventories of Sundanese are presented in (7a, b), respectively, and the canonical root patterns are schematised in (8):

(7) a. Sundanese consonant inventory b. Sundanese vowel inventory

p	t	c	k
b	d	j	g
m	n	ɲ	ŋ
		s ⁷	
	l/r		
w	y	h	(ʔ)

	front	back
high	i	ɨ
mid	e	ə
low	a	o

(8) a. Canonical root pattern of Sundanese



O = onset, R = rhyme

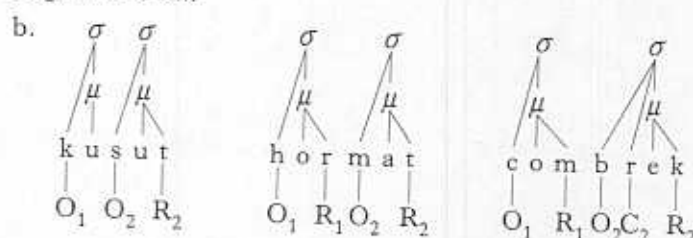
O₁, O₂ = any consonant

R₁ = nasal homorganic to the following stop, /r/ and (quite rarely) a few others

R₂ = most consonants, except palatal [-continuant] consonants

C₂ = /r/, /l/ after a stop (quite rare)

WHERE PROCESS or applies ng of the derivation, as then occurs, triggering a (6a), *di-* is prefixed and *ir=* is positioned before *d* a mora and a syllable, of the first syllable of the e first mora of the root, lable. The vowel is again is applied twice, making l /r/ the onset of the first



As schematised in (8a), most roots are disyllabic, with each syllable consisting minimally of a vowel. Both syllables have an optional onset (O_1 , O_2), typically consisting of a single consonant, although in the second syllable, a stop may be followed by a liquid (C_2). Both syllables may have an optional consonant in the rhyme (R_1 , R_2). These root patterns are exemplified in (8b).

As shown in the chart in (9), the allomorphic alternation between $=ar=$ and $=al=$ is conditioned by the presence of either /r/ or /l/ in the root. If neither /r/ nor /l/ is present, the $=ar=$ variant is used.⁸

(9)		/r/	/l/
O_1			a.
rVCVC	r=ar=VCVC	IVCVC	l=al=VCVC
rahit 'wounded'	r=ar=ahit	litik 'little'	l=al=itik
riwat 'startled'	r=ar=iwat	laga 'wide'	l=al=aga
R_1	b.		
CVrCVC	C=al=VrCVC	CVICVC	
hormat 'respect'	ha-h=al=ormat	not attested (so far)	
perceka 'handsome'	p=al=ərceka		predicted: C=ar=VICVC
O_2			
CV(C)rVC	C=ar=V(C)rVC	CV(C)IVC	C=ar=V(C)IVC
di-kirim 'sent' PASS	di-k=ar=irim	gilis 'beautiful'	g=ar=ilis
curiga 'suspicious'	c=ar=uriga	guliat 'stretch'	g=ar=uliat
C_2	c.		
CV(C)CrVC	C=al=V(C)CrVC	CV(C)CIVC	C=ar=V(C)CIVC
combrek 'cold'	c=al=ombrek	gajlən 'jump'	g=ar=ajlən
motret 'take a picture'	m=al=otret	goplok 'flop down'	g=ar=oplok
R_2	d.		
CVCVr	C=al=VCVr	CVCVI	C=ar=VCVI
bocor 'leaking'	b=al=ocor	gətol 'diligent'	g=ar=ətol
biḡhar 'rich'	b=al=iḡhar	mahal 'expensive'	m=ar=ahal

 O_3

CVCVrV

ḡumbara 'go abroad'

siduru 'sit by a fire'

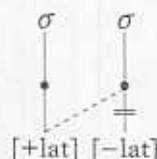
Consider first roots of three syllables, except root-initial variant. But in the case of three syllables, the form appears with the onset of either of the first two syllables. The first variant appears with the onset of the first syllable or second member of a core syllable. The second member of a core syllable is the onset of a third syllable. The pattern is the $=al=$ variant. The pattern study are very consistent. Robins (1959: 343): 'T' -al- is used with forms containing a following root.

Words of any other structure. With /l/-initial roots, to the initial /l/ (box (a) beginning of the first or two /r/'s (boxes (b-e)) facts, then, in the next rules should obtain.

In order to account for that the underlying form for account for the assimilation /r/-dissimilation, respectively specified for the feature.

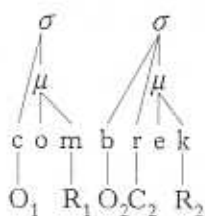
Following the view of Lateral Assimilation to a root-initial /l/:

(10) Lateral Assimilation



When the /r/ of the first syllable is [+lateral] specific for the comitant delinking of [r].

As discussed in §1, d.



llabic, with each syllable
ave an optional onset (O_1 ,
; although in the second
) Both syllables may have
These root patterns are

phic alternation between
ence of either /r/ or /l/
ie =ar= variant is used.⁸

/l/

a.

title'	l=al=VCVC
ide'	l=al=itik
	l=al=aga

VC	
ested	predicted:
)	C=ar=VICVC

IVC	C=ar=V(C)IVC
beautiful'	g=ar=ilis
'stretch'	η=ar=uliat

IVC	C=ar=V(C)IVC
'jump'	η=ar=ajlən
k 'flop'	η=ar=oplok
down'	

VI	C=ar=VCVI
'diligent'	g=ar=ətəl
'expensive'	m=ar=ahal

O_3
CVCVrV
numbara 'go abroad'
siduru 'sit by a fire'

e.
C=al=VCVrV
η=al=umbara
s=al=iduru

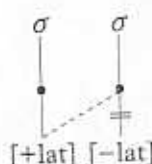
Consider first roots containing /l/. If an /l/ occurs anywhere in the root, except root-initially, the infixed form appears with the =ar= variant. But in the case of a root-initial /l/, as seen in box (a), the infixed form appears with the =al= variant. In the case of roots with /r/, if either of the first two syllables starts with an /r/ (O_1 or O_2), the infixed variant appears with the =ar= variant. But if /r/ occurs in the rhyme of the first syllable or second syllable (boxes (b, d), respectively) or as the second member of a complex onset to a second syllable (box (c)) or as the onset of a third syllable (box (e)), then the infixed form occurs with the =al= variant. The patterns observed for the two speakers in the present study are very consistent and concur with the observations made by Robins (1959: 343): 'The variants -ar/-al- are contextually determined; -al- is used with forms whose initial consonant is l, and with those containing a following r, except as initial consonant of the second syllable. Words of any other structure regularly infix -ar-.'

With /l/-initial roots, we have a case of assimilation: the infix assimilates to the initial /l/ (box (a)). When an /r/ occurs in the root, except as the beginning of the first or second syllable, we have dissimilation between the two /r/'s (boxes (b-e)). I first propose an analysis to account for these facts, then, in the next section (§4), I will turn to the question of why these rules should obtain.

In order to account for the observed pattern of allomorphy, I assume that the underlying form of the infix is =ar= and propose two rules to account for the assimilation and dissimilation: Lateral Assimilation and /r/-dissimilation, respectively. I assume that only the liquids /l r/ are specified for the feature [lateral] in Sundanese.⁹

Following the view of assimilation as spreading, I propose a rule of Lateral Assimilation to account for the assimilation of the /r/ of the infix to a root-initial /l/:

(10) Lateral Assimilation



applies to /r/ of the plural marker,
between two adjacent syllables

When the /r/ of the infix is preceded by an /l/ in the previous syllable, the [+lateral] specification of the /l/ spreads to the right, with concomitant delinking of [-lateral].

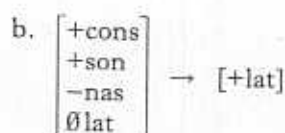
As discussed in §1, dissimilation has been argued to consist of delinking

of two tier-adjacent identical feature specifications, followed by default fill-in of the missing value. Following this approach, /r/-dissimilation can be represented as follows:

(11) /r/-dissimilation



- a. The first [-lat] is delinked (due to tier-adjacent [-lat] specifications).



When the /r/ of the plural infix is followed by a tier-adjacent [-lateral] specification, the first lateral specification is delinked. Delinking is then followed by a rule filling in a [+lateral] specification for liquids unspecified for [lateral]. Note, however, that the filling-in of [+lateral] is not a general default rule in Sundanese, as /r/ appears to be less marked than /l/, an issue we return to below. However, the rule as stated does not account for the fact that delinking is blocked if the second [-lateral] specification occurs as the onset of the second syllable. Thus it wrongly predicts that the plural of /curiga/ would be *[caluriga], rather than the attested [caruriga]. This condition on the rule is a point we return to below in §4.2.

Sample derivations of both Lateral Assimilation and /r/-dissimilation are presented in (12):

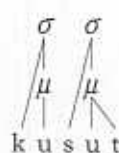
(12) Sample derivations

UR a. kusut

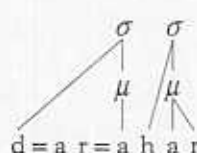
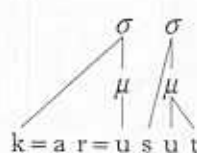
b. litik

c. dahar

syllabification



infixation



syllabification

Lateral Assimilation

/r/-dissimilation

a. delinking

b. [+lat]-insertion

output

[k=

In each case, the r syllabification discussed before the first mora of as there are no /r/'s or /r/-dissimilation is applied to the root-initial consonant. Lateral Assimilation spreads to the /r/ of specification, resulting is not applicable; but [-lateral] specification is inserted. two proposed rules, L account for the observ

4 Problems and i

Although the allomor forwardly under the p this view of dissimil specification? (ii) Ho Lateral Assimilation? (iii) Why is /r/-diss occur as onsets of two

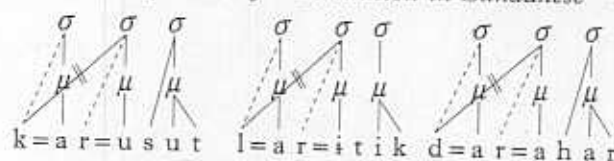
ions, followed by default
ach, /r/-dissimilation can

to /r/ of the
marker

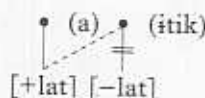
r-adjacent [-lat]

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syllabifi-
cation

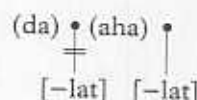


Lateral
Assimi-
lation

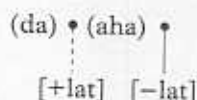


/r/-dissimilation

a. delinking



b. [+lat]-
insertion



output

[karusut]

[lalitik]

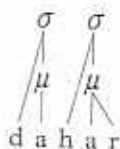
[dalahar]

In each case, the root is first syllabified, following the principles of syllabification discussed in §2. The plural marker =ar= is then inserted before the first mora of the root. This results in resyllabification. In (12a), as there are no /r/'s or /l/'s in the root, neither Lateral Assimilation nor /r/-dissimilation is applicable, resulting in the form [karusut]. In (12b), the root-initial consonant is an /l/, which triggers the application of Lateral Assimilation. The [+lateral] specification of the root-initial /l/ spreads to the /r/ of the infix, triggering delinking of the [-lateral] specification, resulting in the form [lalitik]. In (12c), Lateral Assimilation is not applicable; but /r/-dissimilation is, due to the root-final /r/. The [-lateral] specification of the /r/ of the infix is delinked and a [+lateral] specification is inserted, giving the form [dalahar]. We see, then, that the two proposed rules, Lateral Assimilation and /r/-dissimilation, basically account for the observed allomorphy of the plural marker in Sundanese.

4 Problems and issues

Although the allomorphy of =ar= / =al= is accounted for straightforwardly under the proposed analysis, some questions arise. (i) How does this view of dissimilation relate to questions of markedness and underspecification? (ii) How general are the rules of /r/-dissimilation and Lateral Assimilation? Do they apply only to the /r/ of the plural marker? (iii) Why is /r/-dissimilation blocked if the two [-lateral] specifications occur as onsets of two adjacent syllables? In other words, why tolerate

c. dahar



closer /r/'s, but not ones farther away? We address the first question in §4.1 and the remaining questions in §4.2.

4.1 Dissimilation: markedness and underspecification

Adequate formal accounts of dissimilation need to address issues of markedness and underspecification. In order to consider the nature of these issues, we turn to liquid dissimilation in Latin. As discussed by Steriade (1987: 351):

the adjectival suffix /-alis/ (as in /nav-alis/ 'naval') becomes /-aris/ when preceded by a stem containing /l/: /sol-aris/ 'solar', /milit-aris/ 'military', /Lati-aris/ 'of Latium'. Dissimilation fails only when the stem /l/ is separated from the suffix by an intervening /r/: /flor-alis/ 'floral', /sepulchr-alis/ 'funereal', /litor-alis/ 'of the shore'.

These facts can only be accounted for if both + and - specifications are present within the class of liquids at the time that the rule applies, since an intervening /r/ blocks dissimilation between two /l/'s. As argued by Steriade, these facts can be accounted for directly under the view of Contrastive Underspecification, whereby both values of a feature are specified within a contrasting class (in this case the class of liquids) and no value is specified otherwise, as exemplified in the following derivation:¹⁰

(13) <i>phonological input</i>	m i l i t - a l i s	l i t o r - a l i s
	+L +L	+L -L +L
<i>Liquid Dissimilation</i>		
a. <i>delinking</i>	m i l i t - a l i s	—
	+L +L	
b. <i>default fill-in</i>	m i l i t - a r i s	l i t o r - a l i s
	-L +L -L -L -L	+L -L -L +L -L
[] → [-L]		
<i>output</i>	[militaris]	[litoralis]

Following a view of Radical Underspecification (Kiparsky 1982; Archangeli & Pulleyblank 1986; among others), in which only one value is specified underlyingly, a default fill-in rule must apply before dissimilation to block the application of dissimilation in cases such as [litoralis]. But the rule must only provide default values to /r/, not to any other consonants, since only an intervening /r/, not any other intervening consonant, blocks the application of the rule. Since delinking is followed by default fill-in,

then separate default fill-in is exemplified in (14):

(14) *phonological input*

default fill-in

$\begin{bmatrix} +\text{cons} \\ +\text{son} \\ -\text{nas} \end{bmatrix} \rightarrow [-L]$

Liquid

Dissimilation

a. *delinking*

b. *default fill-in*

$[] \rightarrow [-L]$

output

As argued by Steriade in favour of Contrastive evidence of the stage be

As observed by Ode 'default rules introduce results of dissimilations [lateral], [+lateral] is a + values in general) and with this prediction.

The facts of dissimil liquid dissimilation in L triggered by /r/, not /l/, difference could be acc are language-specific (t that Sundanese differs marked in the former. U phonology of Sundane broader phonotactic dis per se that accounts for and Latin. In the ca segments (as predictec applies between unma (1988) makes a simila dissimilation in Mode

address the first question in

specification

need to address issues of to consider the nature of in Latin. As discussed by

'naval') becomes /-aris/ l-aris/ 'solar', /milit-aris/ lation fails only when the intervening /r/: /flor-alis/ /- of the shore'.

+ and - specifications are that the rule applies, since in two /l/'s. As argued by directly under the view of values of a feature are the class of liquids) and no the following derivation:¹⁰

l i t o r - a l i s
| | |
+L -L +L

l i t o r - a l i s
| | | |
+L -L -L +L -L

[litoralis]

then separate default fill-in rules must apply before and after delinking, as exemplified in (14):

(14) <i>phonological input</i>	m i l i t - a l i s	l i t o r - a l i s
	+L +L	+L +L
<i>default fill-in</i>	—	l i t o r - a l i s
[+cons]		
+son → [-L]		+L -L +L
<i>Liquid Dissimilation</i>		
a. <i>delinking</i>	m i l i t - a l i s	—
	+L +L	
b. <i>default fill-in</i>	m i l i t - a r i s	l i t o r - a l i s
[] → [-L]	-L +L -L -L -L	+L -L -L +L -L
<i>output</i>	[militaris]	[litoralis]

As argued by Steriade (1987), these facts constitute a strong argument in favour of Contrastive Underspecification, since there is no independent evidence of the stage before the first default rule applies.¹¹

As observed by Odden (1987: 237), following the assumption that 'default rules introduce unmarked feature values...this entails that the results of dissimilations should be relatively less marked'. For the feature [lateral], [+lateral] is usually assumed to be the marked value (as are +values in general) and thus liquid dissimilation in Latin is consistent with this prediction.

The facts of dissimilation in Sundanese are quite similar to those of liquid dissimilation in Latin, except that in Sundanese, the dissimilation is triggered by /r/, not /l/; thus /l/, not /r/, gets filled in by default. This difference could be accounted for if we assume that markedness relations are language-specific (though *contra* the basic notion of markedness) and that Sundanese differs from Latin in that it is /r/, and not /l/, that is marked in the former. Unfortunately this view is not tenable, as within the phonology of Sundanese, /r/ appears to be less marked, e.g. it has a broader phonotactic distribution. It is not then a difference in markedness *per se* that accounts for the difference between dissimilation in Sundanese and Latin. In the case of Latin, dissimilation results in unmarked segments (as predicted by Odden) while in Sundanese, dissimilation applies between unmarked segments resulting in marked ones. Kaisse (1988) makes a similar observation based on the facts of continuant dissimilation in Modern Greek. Dissimilation occurs between two ad-

on (Kiparsky 1982; Arch- which only one value is apply before dissimilation such as [litoralis]. But the it to any other consonants, rvening consonant, blocks followed by default fill-in,

jacent obstruents that agree in continuancy, resulting in the delinking and feature fill-in of both values of the feature [continuant]. Thus, although an attractive suggestion, the view that feature specifications lost due to the delinking of tier-adjacent identical specifications are filled in by general default rules cannot be maintained.

The fact that dissimilation may occur between unmarked values poses additional problems for a Radical Underspecification account of dissimilation. Following Radical Underspecification, it is generally assumed that it is marked values that are specified underlyingly (though cf. Archangeli & Pulleyblank 1989). Thus in Sundanese, only [+lateral] would be specified underlyingly. But before dissimilation applies, default fill-in must provide [-lateral] specifications to /r/'s, but not to other consonants, since it is between /r/'s that dissimilation occurs. Yet following delinking, it is [+lateral] specifications that must be provided to account for the observed outputs. Thus again two fill-in rules are required, the first to assign [-lateral] specifications to /r/, the second to reassign [+lateral] specifications to those /r/'s which lose their lateral specifications.

We conclude then that the facts of dissimilation in Sundanese lend additional support to the conclusion that both values are specified within a contrasting class, as dissimilation itself requires the presence of [-lateral] specifications. The facts of Sundanese, however, argue against the view that dissimilation necessarily occurs between more marked values, resulting in less marked ones. But following Contrastive Underspecification, this poses no formal problem, since both values are present underlyingly and plausibly either could be filled in by rule after delinking applies. In the case of Latin, it is the unmarked [-lateral] specification that is inserted after delinking, while in Sundanese it is the [+lateral] specification which is filled in.

4.2 Dissimilation and the OCP

Dissimilation in Latin and Sundanese differ, at least superficially, in another respect: in Latin the process of dissimilation is seen to be strictly local (on the [lateral] tier), while in Sundanese dissimilation appears to apply between /r/'s which are farther apart and not ones that are closer together, e.g. /s=ar=iduru/ → [saliduru], but /r=ar=ahit/ → [rarahit]. This brings us back to the two remaining questions posed at the beginning of this section, repeated here: (ii) How general are the rules of /r/-dissimilation and Lateral Assimilation? Do they apply only to the /r/ of the plural marker? (iii) Why tolerate /r/'s which are *close* to each other? These cases appear to be violations of the OCP, unless they constitute doubly linked structure. We turn now to these questions.

Other cases of dissimilation of /r/'s occur in Sundanese, as exemplified in (15):

(15) Other cases of dissimilation

- a. in borrowed forms
- b. other morphological forms
 - i. para putra¹
PL 'young'
 - ii. pira(ŋ)+kac
'type' 'face'
 - iii. baraŋ+siar
'thing' 'see'

As exemplified in (15a), which contain two /r/'s, logically complex forms. A occur across word boundaries or between a prefix and a suffix in Sundanese which is optional, but this is not so across stronger phonological boundaries. Additionally, the prefix *para-* is optional. The occurrence of *para-* suggests that dissimilation in the language, not limited to the plural marker.

As discussed in §1, if then morpheme structure observed rules and any tier occur morpheme-internal to a sequence of identical vowels, the distribution of morphemes is not limited.

In considering constraints on striking phonotactic constraints based on rough calculations from Basa & Sastra Sunda 19 with an estimated 17,000 consideration of /r/- and /l/-.

Of approximately 960 cases of /r/- and /l/-, these 105 cases fall into

(16) Phonotactic constraints

- | | | |
|----|-------------------------------------|----|
| | pattern | no |
| a. | rV ₁ rV ₂ ... | 67 |

(15) Other cases of dissimilation of /r/'s

- a. in borrowed forms: rapor, also lapor or rapot 'report'
direktur, also dalektur 'director'
- b. other morphologically complex forms:
- para putra¹² → pala putra
PL 'young male'
 - pira(η)+kadar → pilakadar 'only'
'type' 'fate'
 - baraη+siar → balarsiar 'seek a livelihood'
'thing' 'seek'

(Eringa 1949: 95)

As exemplified in (15a), dissimilation may occur in borrowed forms which contain two /r/'s. Dissimilation also occurs in other morphologically complex forms. As noted by Eringa (1949), in certain cases it may occur across word boundaries, in a phrase (15b.i), in a compound (15b.ii) or between a prefix and a root (15b.iii). *baraη-* is the only other indigenous affix in Sundanese which has an /r/ in it. In these cases, dissimilation is optional, but this is not surprising, as the rule may be less apt to apply across stronger phonological boundaries, such as a word boundary. Additionally, the prefix *baraη-* may function more like a compound than a prefix. The occurrence of dissimilation in such cases, although optional, suggests that dissimilation in Sundanese is a more systematic process in the language, not limited only to the plural marker.

As discussed in §1, if dissimilation is indeed motivated by the OCP, then morpheme structure constraints would be expected to parallel the observed rules and any tier-adjacent identical feature specifications which occur morpheme-internally must be doubly linked structures, rather than a sequence of identical values. In order to test this claim, let us examine the distribution of morpheme-internal liquids in Sundanese.

In considering constraints first on /r/'s, then on /r/'s and /l/'s, quite striking phonotactic constraints emerge. The following generalisations are based on rough calculations from the *Kamus Umum Basa Sunda* (Lembaga Basa & Sastra Sunda 1985), the most complete dictionary of Sundanese, with an estimated 17,000 entries. These observations are based on a consideration of /r/- and /l/-initial forms.

Of approximately 960 /r/-initial entries, 105 have more than one /r/. These 105 cases fall into the following three patterns:

(16) Phonotactic constraints on /r/'s (... = additional segments)

pattern	no.	examples
a. rV ₁ rV ₂ ...	67	57 V ₁ = V ₂ = copying of 1st syllable
		rara 'braid'
		rorod 'pull in (as in string of a kite)'

b. rVCrVC	20	19 $V_1C_1 = V_2C_2$ = copying of CVC form	ragrag	'fall'
			ribrib	'arms overly full'
c. r...r	18	17 are recent borrowings	radar	'radar'
			restoran	'restaurant'

As summarised in (16a), in the majority of /r/-initial cases with two /r/'s (67 forms), the form consists of a /rVrV.../ sequence, where the second /r/ is the onset of the second syllable. In 57 of these 67 cases, the first and second vowels are the same, thus they constitute a PHONOLOGICAL COPY of the first syllable.¹³ As shown in (16b), in 20 cases the /r/'s are onsets to the first and second syllables, both of which are heavy. In 19 of these 20 cases, the vowel and consonant of the rhyme in the first and second syllables are the same, thus the forms consist phonologically of a copy of a monosyllabic form. Finally, as shown in (16c), in 18 cases there is a second /r/ in the form, not occurring as an onset to the second syllable. Of these 18 cases, 17 are clearly recent borrowings. Based on /r/-initial forms, we conclude then that roots with two /r/'s in the indigenous vocabulary are almost non-existent, unless the form involves a phonological copy of the first syllable. In addition there are no cases with /r/'s in both the onset and rhyme of the same syllable.

Constraints also obtain on the distribution of /r/'s and /l/'s. Although /r/'s and /l/'s may cooccur in some positions within the word, clear restrictions apply in cases with /r/ and /l/ in the onset of the first two syllables:

(17) *Phonotactic constraints on /r/'s and /l/'s*

pattern	no.	examples
a. rVIV...	4 are recent borrowings	relatip 'relative' rolet 'roulette'
b. lVrV...	4 are recent borrowings	lori 'small train' larab 'arithmetic'
	12 have an alternate form /rVrV/	loris ~ roris 'check' lirih ~ ririh 'talk softly'

As summarised in (17a), of the approximately 960 /r/-initial roots, the pattern /rVIV.../, with /r/ as the onset of the first and /l/ as the onset of the second syllable, only occurs in four forms and all four of these forms are recent borrowings. As shown in (17b), of the approximately 990 /l/-initial entries, 26 are of the shape /lVrV.../, where /l/ is the onset of the first and /r/ the onset of the second syllable. Of these 26 cases, four are recent borrowings and of the remaining cases, twelve have alternate forms of the shape /rVrV.../. Thus we see that forms of the shape /# [ɔlateral] V [-ɔlateral] V.../ are rare, and when they occur they often have an alternate form of the shape /rVrV.../.

The following general morphologically complete the onset of adjacent syllable. (ii) There is a t of the initial two syllabl

In answer to the se distribution of two /r/' than just in the contex (optionally) in other m boundaries. Basic phono Although the behaviour a strong tendency again initial two syllables of t Sundanese display the alternation of the plural

This leads us to our indeed motivated by the should display similar sequences of /r/'s are dissimilation is motivat tier-adjacent like specif however, in Sundanese applies between more di situation? First we note Sundanese, even if the they are still tier-adjac syllables tolerated? If w of constituting two disc counterexamples are ju sequence of identical doubly linked, as illust

(18) a. r a r a
 V
 [-lat]

Such a representation i vowels are specified derivationally. In con violation.

If two /r/'s as the complex forms also cor why just in these case /r/'s constitute a linke these cases involve lin account for this, I pro

ragrag 'fall'
ribrib 'arms overly full'

radar 'radar'
restoran 'restaurant'

initial cases with two /r/'s in sequence, where the second of these 67 cases, the first and second /r/'s are onsets to the same syllable. In 19 of these 20 cases, the first and second syllables are of a copy of a monosyllabic form. There is a second /r/ in the second syllable. Of these 18 cases, in initial forms, we conclude that the vocabulary are almost always a copy of the first /r/'s in both the onset and

/r/'s and /l/'s. Although /r/'s within the word, clear the onset of the first two

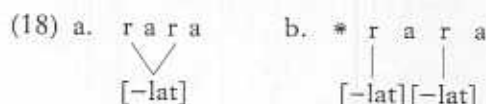
es
'relative'
'roulette'
'small train'
'arithmetic'
roris 'check'
ririh 'talk softly'

60 /r/-initial roots, the first and /l/ as the onset of all four of these forms: approximately 990 /l/-initial /r/ is the onset of the first syllable. In these 26 cases, four are /r/'s have alternate forms of the shape /# [αlateral] /r/'s occur they often have an

The following generalisations emerge: (i) In both monomorphemic and morphologically complex forms, two /r/'s are avoided unless they are in the onset of adjacent syllables, usually a phonological copy of an initial syllable. (ii) There is a tendency to avoid two unlike liquids in the onsets of the initial two syllables of a form.

In answer to the second question, we see that constraints on the distribution of two /r/'s and /r/'s and /l/'s hold much more generally than just in the context of the plural marker. /r/-dissimilation applies (optionally) in other morphologically complex forms and across word boundaries. Basic phonotactic patterns also conform to such constraints. Although the behaviour of Lateral Assimilation is less systematic, there is a strong tendency against dissimilar liquids occurring as onsets of the initial two syllables of the form. Thus other aspects of the phonology of Sundanese display the same restrictions exhibited by the allomorphic alternation of the plural marker.

This leads us to our third question. Yip argues that if dissimilation is indeed motivated by the OCP, then other aspects of a phonological system should display similar constraints. As predicted by Yip, we find that sequences of /r/'s are constrained more generally in Sundanese. Yet if dissimilation is motivated by the OCP, it should always apply between tier-adjacent like specifications (as seen to be the case above in Latin); however, in Sundanese dissimilation is blocked between closer /r/'s, but applies between more distant ones. How can we account for this surprising situation? First we note that in the more distant cases of dissimilation in Sundanese, even if the /r/'s are separated by as much as two syllables, they are still tier-adjacent. But why are /r/'s in the onset of two adjacent syllables tolerated? If we assume that these /r/'s are doubly linked instead of constituting two discrete [-lateral] specifications, then these apparent counterexamples are just as predicted. This suggests that underlyingly a sequence of identical liquids in two adjacent syllable onsets must be doubly linked, as illustrated in (18a):



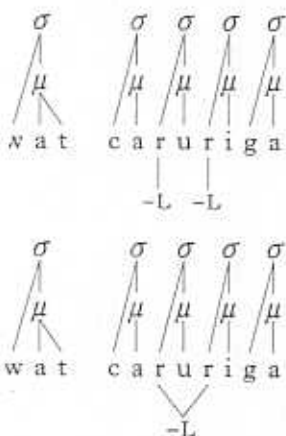
Such a representation is plausible, since there is no reason to assume that vowels are specified for the feature [lateral], either underlyingly or derivationally. In contrast, the structure in (18b) would be an OCP violation.

If two /r/'s as the onsets of adjacent syllables in morphologically complex forms also constitute linked structures, we have an explanation of why just in these cases /r/-dissimilation is blocked. If the two adjacent /r/'s constitute a linked structure, no OCP violation would occur. But if these cases involve linked structures, these must be created by rule. To account for this, I propose a rule of Lateral Node Merger:

ble onsets are merged into
e is represented under the
directly dominated by the
ode Merger applies before
e of Lateral Node Merger
does not apply if an /r/
able of a root. In addition,
i the plural marker, as was

ateral Node Merger and

c. curiga



In (20a) the environment for Lateral Node Merger is not met: the tier-adjacent [-lateral] specifications create an OCP violation, triggering the application of /r/-dissimilation. But, as exemplified in (20b), with an /r/-initial root, the outcome of infixation is a sequence of two /r/'s in the onset of adjacent syllables, which meets the structural description of Lateral Node Merger, thereby bleeding the application of /r/-dissimilation. Similarly, if the onset of the second syllable is an /r/, as shown in (20c), this also results in a sequence of two /r/'s in adjacent onsets, again triggering Lateral Node Merger.

As noted above, in a few cases where O_1 or O_2 is an /r/, =al= is observed instead of the expected =ar=, or both forms are acceptable. This can be accounted for if Lateral Node Merger fails to apply in these cases, thus allowing /r/-dissimilation to apply, yielding the =al= variant.

Lateral Node Merger does not apply when the /r/ of the root is in the rhyme of the first syllable, e.g. /pərceka/, /p = al = ərceka/, since the structural description of the rule is not met. I believe that this relates to a more general constraint whereby sequences of two /r/'s within a syllable are disallowed in Sundanese. Finally, Lateral Node Merger does not apply if the /r/ of the root appears in the second syllable as part of a complex onset, e.g. /motret/, /m = al = otret/. This suggests that there is something special about the structure of these complex onsets, though I do not have a formal mechanism to propose to block the application of Lateral Node Merger in these cases. We conclude that the interaction of Lateral Node Merger and /r/-dissimilation accounts for the observed pattern of allomorphy of the plural marker when an /r/ is present in the root (as summarised in (9)).

Finally, consider the case where the =al= allomorph appears in /l/-initial roots, e.g. /litik/, /l = al = itik/. These forms were accounted for with the proposed rule of Lateral Assimilation, in (10). The derivational outcome of the rule of Lateral Assimilation is parallel to the tendency to avoid sequences of two unlike liquids in the onsets of the two initial syllables of a word (* /# [ɹlateral] V [-ɹlateral] V ... /) discussed above for both /r/- and /l/-initial roots. The structure and output of Lateral Assimilation look suspiciously similar to the rule of Lateral Node Merger, except that the lateral specifications are opposite. This raises the possibility that Lateral Assimilation and the parallel constraint on underlying forms could be accounted for with a more general statement of Lateral Node Merger, involving any two lateral specifications, whether the same or the opposite. Two observations argue against such a generalised rule. First, the underlying constraint on * /# [ɹlateral] V [-ɹlateral] V ... / sequences is less systematic than that observed for forms with two /r/'s. Second, the =al= variant of the plural marker appears with /l/-initial roots, but not for roots where /l/ appears as the onset of the second syllable, e.g. /gilis/, [garilis], not *[galilis]. The environment of Lateral Assimilation is more limited than the environment of Lateral Node Merger. Thus, although the parallel is interesting, these differences argue that we need to maintain both Lateral Assimilation and Lateral Node Merger as distinct rules.¹⁴

In summary, assuming a rule of Lateral Node Merger, we see that the patterns of allomorphy observed in the plural marker are as expected, if the OCP holds both underlyingly and derivationally in Sundanese. These results lend strong support to the view that rules of dissimilation are motivated by the OCP.

5 Conclusions

We have examined in some detail the formal properties of the plural marker =ar= of Sundanese. We have considered both its behaviour as an infix and the allomorphic alternation between the =ar= and =al= variants. The unusual property of the plural marker, whereby it appears as both an infix and a prefix, results in maximising preferred syllable types. The allomorphy of the plural marker involves both assimilation and dissimilation, accounted for in the proposed analysis by three rules: /r/-dissimilation, Lateral Node Merger and Lateral Assimilation. The facts of Sundanese are compatible with the current view of dissimilation as delinking and subsequent feature fill-in. Yet Sundanese provides strong evidence that dissimilation does not always result in less marked segments, as had been previously suggested. Furthermore the case of Sundanese lends further support in favour of Contrastive Underspecification, rather than Radical Underspecification. Finally, examination of the general phonological patterns of Sundanese reveals that Sundanese offers clear support for the view that dissimilation is an OCP-driven process, in that both the rule of /r/-dissimilation and more general phonotactic patterns behave alike.

NOTES

- * Thanks to Inna Padmawidjaja and Engkus Kusdinar for their help and patience in producing many plural forms. Parts of this work were presented at the Cornell University DMLL Colloquium, December 1990 and the 65th Annual Meeting of the Linguistic Society of America, Chicago, January 1991. Thanks to both audiences for stimulating discussion. Thanks also to Nick Clements, Beverley Goodman, Bruce Hayes, Marie Huffman, David Silva, Draga Zec and two anonymous *Phonology* reviewers for helpful comments. A previous version of this paper appeared in *Working Papers of the Cornell Phonetics Laboratory* (1992) 7, 17-40.

- [1] Although the infix is typically referred to as a plural marker, Ewing (1991) has shown that the formative actually creates distributive forms. I will nevertheless continue to refer to it as a plural marker. The reader is referred there for discussion of both the semantics and pragmatics of such forms.
- [2] This process has also been briefly described in the literature on Sundanese (see Eringa 1949, Robins 1959 and Van Syoc 1959).
- [3] Root-initial consonant clusters are very rare and I have yet to find such a root from which a plural form can be constructed.
- [4] I understand the use of TIER here to be the same as PLANE as discussed by McCarthy (1989).
- [5] See also Anderson (1991) for a similar criticism of McCarthy & Prince's view of infixation.

- [6] A somewhat different (1977). They propose face; they are under rule. I believe that a affixation is to be pre
- [7] /s/ patterns as a pala
- [8] The patterns exempli In particular, in the c are observed instead shape /CVrVC.../, t occurs for both speal variants are acceptab patterns is suggested
- [9] /l/ and /r/ also differ assume that appropri change in specification
- [10] Steriade does not pro discussion is consister
- [11] Archangeli (1988) arg argument, other argu ferred there for consi
- [12] An anonymous review historically =ar= ma connection. *pa is no
- [13] I use the term PHONO material that is the same sequences are phonol term to distinguish reduplication. The for partial reduplication c of functions. Although partial reduplication.
- [14] Anderson (1991) sugg general phonological is difficult to determin phonological context. /l/'s morpheme-inter that Lateral Assimilat on /l/ sequences, in i straint on /r/ sequen

REFERENCES

- Anderson, S. R. (1972). O.
Anderson, S. R. (1991). W.
second position. Ms, Th
Archangeli, Diana (1988).
Archangeli, Diana & Do
phonological representati
California. Forthcoming
Archangeli, Diana & Dou
173-217.
Clements, G. N. (1976). V.
1980, Indiana University
Cohn, Abigail C. (1990).
sertation, UCLA. Also s

e Merger, we see that the marker are as expected, if ally in Sundanese. These rules of dissimilation are

l properties of the plural red both its behaviour as en the =ar= and =al= marker, whereby it appears imising preferred syllable olves both assimilation and analysis by three rules: Lateral Assimilation. The rent view of dissimilation Sundanese provides strong lt in less marked segments, re the case of Sundanese Underspecification, rather amination of the general at Sundanese offers clear CP-driven process, in that neral phonotactic patterns

nar for their help and patience . work were presented at the ber 1990 and the 65th Annual hicago, January 1991. Thanks hanks also to Nick Clements, n, David Silva, Draga Zec and mments. A previous version of ell *Phonetics Laboratory* (1992)

ural marker, Ewing (1991) has tive forms. I will nevertheless eader is referred there for dis- such forms.

ie literature on Sundanese (see

I have yet to find such a root

LANE as discussed by McCarthy

of McCarthy & Prince's view

- [6] A somewhat different approach is taken by Anderson (1972) and Moravcsik (1977). They propose that the infixes of Sundanese are only infixes on the surface; they are underlyingly prefixes which are metathesised via a reordering rule. I believe that an account which correctly locates the affix at the time of affixation is to be preferred.
- [7] /s/ patterns as a palatal in Sundanese.
- [8] The patterns exemplified here are very robust, but a few counterexamples occur. In particular, in the case where O_1 or O_2 is an /r/, a couple of instances of =al= are observed instead of the expected =ar=. For example, of 22 forms of the shape /CVrVC.../, the =ar= infix is attested in all but two forms where =al= occurs for both speakers. In addition, for one speaker both =ar= and =al= variants are acceptable in five forms. An account of the variability for these patterns is suggested below.
- [9] /l/ and /r/ also differ in their specifications for [continuant] (see Cohn 1990). I assume that appropriate [continuant] specifications result automatically from a change in specification for the feature [lateral].
- [10] Steriade does not provide explicit derivations of dissimilation in Latin, but her discussion is consistent with the view of dissimilation presented here.
- [11] Archangeli (1988) argues that, although the above facts constitute a convincing argument, other arguments suggest the opposite conclusion. The reader is referred there for consideration of these other arguments.
- [12] An anonymous reviewer wonders whether *para* has =ar= infixed in it. Although historically =ar= may be etymologically related to *para*, there is no synchronic connection. **pa* is not an occurring form and *para* is clearly monomorphemic.
- [13] I use the term PHONOLOGICAL COPY to refer to a sequence of phonological material that is the same as another sequence. I do not mean to imply that these sequences are phonologically derived through a process of copying. I use the term to distinguish them from the results of the morphological process of reduplication. The former may or may not be due to the latter. Morphologically, partial reduplication of an initial syllable occurs in Sundanese, serving a number of functions. Although a few of the cases of phonological copy result from such partial reduplication, most of them do not; rather they are monomorphemic.
- [14] Anderson (1991) suggests that the =al= allomorph in /l/-initial roots is not a general phonological rule of Sundanese, but specific to the plural marker. This is difficult to determine, as no other morphological contexts create a comparable phonological context. However, restrictions on the distribution of two or more /l/'s morpheme-internally are similar to those observed for /r/'s. This suggests that Lateral Assimilation is the derivational parallel to an underlying constraint on /l/ sequences, in much the same way that /r/-dissimilation parallels a constraint on /r/ sequences.

REFERENCES

- Anderson, S. R. (1972). On nasalization in Sundanese. *LI* 3. 253-268.
- Anderson, S. R. (1991). Wackernagel's revenge: clitics, morphology and the syntax of second position. Ms, The Johns Hopkins University.
- Archangeli, Diana (1988). Aspects of underspecification theory. *Phonology* 5. 183-207.
- Archangeli, Diana & Douglas Pulleyblank (1986). *The content and structure of phonological representations*. Ms, University of Arizona & University of Southern California. Forthcoming as *Grounded phonology*, Cambridge, Mass.: MIT Press.
- Archangeli, Diana & Douglas Pulleyblank (1989). Yoruba vowel harmony. *LI* 20. 173-217.
- Clements, G. N. (1976). *Vowel harmony in nonlinear generative phonology*. Distributed 1980, Indiana University Linguistics Club.
- Cohn, Abigail C. (1990). *Phonetic and phonological rules of nasalization*. PhD dissertation, UCLA. Also appeared as *UCLA Working Papers in Phonetics* 76.

- Eringa, F. S. (1949). *Loetoeng Kasaroeng. Verhandelingen van het Koninklijk Instituut voor Taal-, Land- en Volkenkunde* 8.
- Ewing, Michael (1991). Plural concord in Sundanese. Paper presented at the 6th International Conference on Austronesian Linguistics, Honolulu.
- Goldsmith, John (1976). *Autosegmental phonology*. PhD dissertation, MIT. Published 1979, New York: Garland.
- Goodman, Beverley (1992). Takelma dissimilation and the form of the OCP. *Working Papers of the Cornell Phonetics Laboratory* 7, 41–63.
- Hayes, Bruce (1986). Assimilation as spreading in Toba Batak. *LI* 17, 467–500.
- Hayes, Bruce (1989). Compensatory lengthening in moraic phonology. *LI* 20, 253–306.
- Hyman, Larry M. (1985). *A theory of phonological weight*. Dordrecht: Foris.
- Kaisse, Ellen (1988). Modern Greek continuant dissimilation and the OCP. Ms, University of Washington.
- Kiparsky, P. (1982). Lexical morphology and phonology. In I.-S. Yang (ed.) *Linguistics in the morning calm*. Seoul: Hanshin. 3–91.
- Lembaga Basa & Sastra Sunda (1985). *Kamus Umum Basa Sunda, cetatan kelima*. Bandung, Indonesia: Penerbit Tarate Bandung.
- McCarthy, John (1985). Features and tiers: the structure of Semitic roots. Paper presented at MIT.
- McCarthy, John (1988). Feature geometry and dependency: a review. *Phonetica* 45, 84–108.
- McCarthy, John (1989). Linear order in phonological representation. *LI* 20, 71–99.
- McCarthy, John & Alan Prince (1986). *Prosodic morphology*. Ms, University of Massachusetts, Amherst & Brandeis University.
- McCarthy, John & Alan Prince (1990). Foot and word in prosodic morphology: the Arabic broken plurals. *NLLT* 8, 209–283.
- Moravcsik, Edith A. (1977). On rules of infixing. Indiana University Linguistics Club.
- Odden, David (1987). Dissimilation as deletion in Chuckchi. *ESCOL '87*, 235–246.
- Poser, William J. (1987). An autosegmental theory of dissimilation. Paper presented at the 6th West Coast Conference on Formal Linguistics, Tucson, Arizona.
- Robins, R. H. (1959). Nominal and verbal derivation in Sundanese. *Lingua* 8, 337–369.
- Steriade, D. (1987). Redundant values. *CLS* 23:2, 339–362.
- Van Syoc, W. B. (1959). *The phonology and morphology of the Sundanese language*. PhD dissertation, University of Michigan, Ann Arbor.
- Yip, Moira (1988). The OCP and phonological rules: a loss of identity. *LI* 19, 65–100.

*Diminutive. in Mexican analysis**

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1 Introduction

This paper argues for a plural and augmentative form preceding diminutive (DI) must comprise an absolute melody cannot satisfy the [c] surfaces at the right pan).² In the analysis 1 mapped to stems from left or not a consonant (C) /s/ consequence of syllabification *korona* 'crown' vs. *maa* Obligatory Contour Principle *balkonsote* ← *balkon* 'balc

A close examination profitable on both empirically is that the account proposed of all the main patterns of constructions. Each of them in (1):

- | | |
|-----|---------------|
| (1) | stem |
| a. | la čamaka |
| b. | la korona |
| c. | el pan |
| d. | la madre |
| e. | la komadre |
| f. | el menu |
| g. | el pye |
| h. | el dinosawrye |