

CIRCUMFIXATION: AN UNNOTICED PROBLEM FOR INDONESIAN STRESS

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This paper explores the nature of a heretofore unanalyzed phenomenon in Indonesian, namely circumfixation, and the effects of this phenomenon on stress patterns in the language. Specifically, I argue that Indonesian has three productive circumfixes, here defined as the concurrent and obligatory attachment of a prefix and a suffix to a root. Further, I argue that circumfixation in Indonesian represents a unitary morphological process, distinct from simultaneous prefixation and suffixation. Semantic and morphological evidence is here adduced (in Anderson's (1992) *A-morphous morphology* framework); however, the most striking evidence comes from prosodic considerations. The stress pattern in circumfixed words differs clearly from that of simultaneously prefixed and suffixed words.

Primary stress in Indonesian falls on the penult of the root, and reanalyzes to remain penultimate with the addition of suffixes (1):¹

<u>root</u>	<u>prefix + root + suffix</u>	<u>prefix + root + suffix + suffix</u>
(1) a. pátut proper 'proper'	mem-(p)atút-kan ACT-proper-CAUS 'to correct'	mem-(p)àtut-kán-nya ACT-proper-CAUS-3SG 'to correct him/her/it'
b. hántu ghost 'ghost'	meng-hantú-i ACT-ghost-LOC 'to frighten/haunt'	meng-hàntu-í-nya ACT-ghost-LOC-3SG 'to frighten/haunt him/her/it'

However, in circumfixed words, stress remains on the penult of the root, that is, on the antepenult of the new prosodic word in singly affixed elements (2):

(2) <u>root</u>	<u>circumfix + root</u>	<u>circumfix + root +suffix</u>
a. líhat see 'see'	ke-líhat-an CFX-see-CFX 'visible'	ke-ì hat-án-nya CFX-see-CFX-3SG 'it seems'
b. percáya believe 'believe'	ke-percáya-an CFX-believe-CFX 'belief'	ke-percàya-án-nya CFX-believe-CFX-3SG 'the belief'

If a circumfixed root is further suffixed, the stress reanalyzes to the penult of the new prosodic word (2)—the same pattern found in roots with multiple suffixation. Note that schwa does not support stress in Indonesian and that prefixes regularly fall outside of the domain of stress assignment.

Although Indonesian stress patterns have received quite a bit of attention in the recent literature, no author has yet noted or accounted for the differing stress pattern found in circumfixed elements. I follow Cohn and McCarthy's (1998) OT analysis of Indonesian stress. However, in that work there is no discussion of circumfixation or the variant stress pattern noted above for circumfixed elements. In order not to complicate their analysis, nor to introduce any new constraints or necessitate a cyclic analysis, yet at the same time to allow for the grammar to distinguish simply between circumfixed elements on the one hand, and

¹ Please note that in the paper, I discuss even and odd parity words, of one to seven syllables. The examples given here are representative, but the patterns described hold for words of all lengths.

simultaneously prefixed and suffixed elements on the other, I argue that circumfixation and prefixation in Indonesian represent adjunction structures (3), whereas suffixation is incorporation to the root (4):

- (3) a. [|ca(rí-kan|)] look-CAUS ‘look for s.t.’
 b. [(|bì jak)sa(ná-nya|)] wisdom-3SG ‘the wisdom/regulation’
 c. [(|càri)(-kán-nya|)] look-CAUS-3SG ‘look for it/him’
- (4) a. [ke-(|áda|)-an] *[ke-|ad(á|-an)] CFX-*ada*-CFX ‘situation’
 b. [ke-(|àda|)-(-án-nya)] *[(kè-|ad)(á|-an)-nya] CFX-*ada*-CFX-3SG ‘the situation’
 c. [|ad(á-nya|)] *[(|áda)-nya] *ada*-SFX ‘what there is’

As adjunction structures, prefixes and circumfixes fall outside of the domain of proper stress assignment, while suffixes are naturally incorporated into the stress-assigning domain. In circumfixed words that are subsequently suffixed, while both the suffix and the suffixal element of the circumfix will fall outside the proper domain of stress, together they constitute a footable sequence and can therefore receive stress (3b). Without this modification, the Cohn and McCarthy analysis is unable to account for the stress pattern in circumfixed words. However, my analysis allows us to generate the tableaux in (5, 6), with the same ranking of constraints, and to account successfully for the stress pattern demonstrated in circumfixed elements.

(5)

Candidates	Align-Root-Ft	ParseSyll	Align-L	All-Ft-Rt
☞ a. bu(dáya)-an		**	*	
b. (bùda)(yá -an)	*!		*	*
☞ a. bu(dàya)(-án-nya)		*	**	**
b. (bùda)(yá -an)-nya	*!	*	**	**
c. (bùda)ya (-án-nya)	*!	*	***	***

(6)

Candidates	Align-Root-Ft	ParseSyll	Align-L	All-Ft-Rt
☞ a. <i>ke</i> -(áda)-an		*		
b. <i>ke</i> - a(dá -an)	*!	*	*	*
☞ a. <i>ke</i> -(àda)(-án-nya)				**
b. <i>ke</i> - a(dá -an)-nya	*!	**	*	*

This analysis also provides clear and definitive arguments for the existence of circumfixes as unitary morphological processes, distinct from simultaneous prefixation and suffixation. It makes the further and more important suggestion that languages have access to various types of word-forming processes, such as adjunction and incorporation at the word level. This is not a particularly novel idea; however, its application here as a means to allow the phonological system to differentiate between two otherwise indistinguishable words—and thereby arrive at the proper assignment of stress—is novel. Further investigation of this phenomenon may prove to be helpful in other areas of prosody—for example, in explaining differing vowel harmony patterns in polymorphemic words of the same language (e.g., Javanese).

REFERENCES

- ANDERSON, STEVEN R. 1992. *A-morphous morphology*. Cambridge: Cambridge University Press.
- COHN, ABIGAIL. 1989. Stress in Indonesian and bracketing paradoxes. *Natural Language and Linguistic Theory* 7:167–216.
- COHN, ABIGAIL. 1993. The initial dactyl effect in Indonesian. *Linguistic Inquiry* 24:372–81.
- COHN, ABIGAIL, and JOHN J. MCCARTHY. 1998. Alignment and parallelism in Indonesian phonology. *Working Papers of the Cornell Phonetics Laboratory* 12:53–137.
- CORBIN, DANIELLE. 1987. *Morphologie dérivationnelle et structuration du lexique*. Linguistische Arbeiten 193. Tübingen: Max Niemeyer.
- DARMESTETER, Arsène. 1895. Formation des mots et vie des mots. t. III du *Cours de grammaire historique de la langue française*. Paris: Delagrave.
- DE LACY, PAUL. To appear. A correspondence theory of morpheme order. *Papers from the WCCFL XVIII Poster Session*. Tucson: University of Arizona.
- GOLDSMITH, JOHN. 1993. Harmonic phonology. *The last phonological rule*, ed. by John Goldsmith, 21–60. Chicago: University of Chicago Press.
- HALLE, MORRIS, and WILLIAM J. IDSARDI. 1994. A reanalysis of Indonesian stress. *MIT Working Papers in Linguistics* 21:1–9.
- HALLE, MORRIS, and JEAN-ROGER VERGNAUD. 1987. Stress and the cycle. *Linguistic Inquiry* 18:45–84.
- KAGER, RENÉ. 1999. *Optimality theory*. Cambridge: Cambridge University Press.
- KENSTOWICZ, MICHAEL. 1994. Cyclic vs. noncyclic constraint evaluation. *MIT Working Papers in Linguistics* 21:11–42.
- REINHEIMER-RIPEANU, SANDA. 1973. Différents types de parasynthétiques. *Revue Roumaine de Linguistique* 18(5):487–91.
- REINHEIMER-RIPEANU, SANDA. 1974. *Les dérivés parasynthétiques dans les langues romanes*. Paris: Mouton.
- SPENCER, ANDREW. 1988. Morpholexical rules and lexical representations. *Linguistics* 26:619–40.
- VERHAAR, JOHN W. M. 1984. Affixation in contemporary Indonesian. *NUSA* 18:1–26.

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