

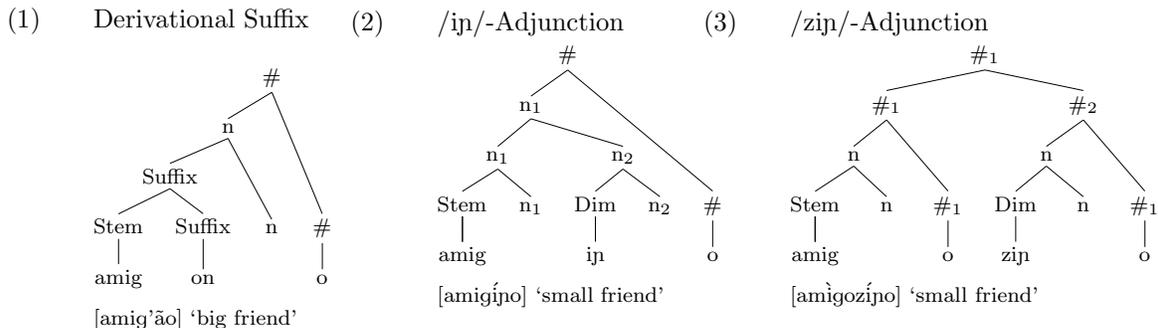
**Syntactically Driven Cyclicity vs. Output-Output Correspondence:  
The Case of Adjunction in Diminutive Morphology**

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Diminutives in Brazilian Portuguese (BP) exhibit morpho-phonological peculiarities that were used to argue for Output-Output Correspondence (OOC) (Kenstowicz, 1998; Ferreira, 2004). We show that a better understanding of the syntactic structure voids the need for OOC. Several new observations about the phonological pattern and the semantics of diminutives, we argue, follow from the syntactic structures involved, and their interaction with principles of syntax-phonology mapping. Opacity effects are explained as a reflex of cyclicity and cannot be accounted for in terms OOC.

**Apparent OO-Correspondence.** Stress conditioned regressive nasalization (4) and [+/- ATR] contrast (5) are preserved in the diminutive but not in other stress shifting suffixation. The plural diminutive preserves certain morphological and phonological features of the plural base, e.g. the choice of stem allomorphs. Ferreira (2004) argues that these peculiarities of the diminutive lend themselves to a straightforward OOC account where morphological identity translates to phonological correspondence, and cannot be captured in a cyclic approach.

**Proposal.** Derivational suffixes are heads taking a stem as their complement; the /ɨp/-diminutive attaches to stems of the category (*n*); the /zɨp/ diminutive adjoins higher, outside the number head:



**Evidence for Syntactic Structure.** Derivational suffixes are heads: They determine the category of the derivative (6a), and also the inflectional class and gender (8a). Diminutives are adjuncts: neither diminutive changes the grammatical category (6b,c). Further evidence for adjunction as opposed to complementation comes from stem allomorph selection: both diminutives are transparent for allomorph selection depending on higher heads. That both diminutives adjoin outside *n* is evidenced by the fact that they can only attach *outside* derivational affixes (7). The differences between the two affixes follow from the different attachment sites. In the case of /ɨp/, the inflectional class is determined by the stem (8b); /zɨp/ agrees in gender but not necessarily inflectional class, indicating that it adjoins higher than /ɨp/. The analysis of /zɨp/ can be extended to nominal co-compounds in general: the second conjunct is also an adjunct and not a head (10). We show that co-compounds have identical syntactic and phonological properties as /zɨp/ and require the same analysis in terms of adjunction outside of '#'. The proposed difference in attachment site between the two diminutive affixes is further motivated by new data concerning scope-properties: /zɨp/ but not /ɨp/ can outscope a pre-nominal adjective, and is thus compatible with idiomatic readings of adjective-noun combinations (11).

**Deriving the Phonological Differences.** The phonological properties follow from a single principle: The sister of a categorial *n*-node is spelled-out and undergoes a phonological cycle or 'phase' (cf. Marantz (2001); Marvin (2002); Arregi and Oltra-Massuet (2005)). The structure in (1) has the effect that derivational affixes undergo a cycle together with the stem, and are assigned a single word stress. The structure in (2) has the effect that the diminutive affix and the stem each undergoes separate cycles, and is assigned a separate stress. This immediately explains the segmental traces of words stress on the stem in the case of /ɨp/-affixation reported in (4b, 5b). Similarly in (3), (and in coordinate compounds more generally), the two noun stems undergo separate cycles, with the expected phonological consequences (4c), (5c). General rhythmic constraints (Sandalo and Truckenbrodt, 2002) result in a single surface stress in short words. A look at longer words reveals

the new observation that while secondary stress in mono-morphemes and derivatives can either be initial or alternating (12a,b), secondary stress both in the case of /iɲ/ and /ziɲ/ preserves stress assigned on an earlier cycle (12c,d).

**Against OO-Correspondence.** Ferreira (2004) proposes that OOC only applies in cases in which two output forms share the same head, as he argues is the case in diminutives. In the diminutive, the stem is predicted to be identical to the one in the base noun with the *same number specification*. Ximenes, however (2004) observes that the diphthongization in the *plural* diminutive in (13b) only occurs in the *singular* base. The choice of the diminutive form (/ziɲ/ vs. /iɲ/) is claimed to be also driven by OOC. E.g., in the case of ‘flor’, /ziɲ/ is chosen over /iɲ/ to preserve the base final [x]. The use of OOC to regulate morpheme selection wrongly rules out the attested plural form [floxzinhas] as it does not preserve the [r] from the plural base flo[r]es (compare to the dispreferred florinhas). OOC fails to capture the nature of the phonological generalization: the observed opacity calls for a cyclic analysis. Moreover, it does not capture the scopal differences between the two suffixes observed here. A theory in which phonology applies recursively to every cyclic syntactic node uses the independently motivated syntactic structures to capture the phonological generalization and voids the need for OOC.

- |     |                                     |     |                                     |
|-----|-------------------------------------|-----|-------------------------------------|
| (4) | Cyclic Stress Effects: Nasalization | (5) | Cyclic Stress Effects: [+/- ATR]    |
|     | a. fãm-a fam-os-o ‘fame (-ous)’     |     | a. bəl-o bel-ez-a ‘beauty (-full)’  |
|     | b. cãm-a cãm-ĩɲ-a ‘(small) bed’     |     | b. bəl-a bəl-ĩɲ-a ‘(small) ball’    |
|     | c. cãm-a cãm-a zĩɲ-a ‘(small) bed’  |     | c. bəl-a bəl-a zĩɲ-a ‘(small) ball’ |

- (6) Category of Derivative

ão		iɲo		(7)	porc-ad-iɲ-a
valêt-o <sub>Adj</sub>	valet-ã-o <sub>N</sub>	pequẽn-o <sub>Adj</sub>	pequẽn-ĩɲ-o <sub>Adj</sub>		vs. *porc-ĩɲ-ad-a
‘brave’	‘bully’	small	smallish		

- (8) Declension Class with /iɲo/

	poet-a	poet (fem. or masc.)
a.	poet-ã-o	‘big poet’ (masc)
b.	poet-ĩɲ-a	‘small poet’ (f. or m.)

- (9) Agreement with /ziɲo/ and Co-Compounds

	poet-a	poet (fem. or masc.)
a.	poet-a zĩɲ-o	‘small poet’ (masc)
	poet-a zĩɲ-a	‘small poet’ (fem)
b.	poet-a vampiro	‘poet-vampire’ (masc)
	poet-a vampira	‘poet-vampire’ (fem)

- (10) Headedness in Co-Compound

zebras porcos	porco zebras
zebra-pig (masc.)	pig-zebra (fem.)

- (11) Relative Scope of Prenominal Adjective

	/iɲ/	/ziɲ/
super amigo	super amiginho	super amigo zinho
great friend/super-hero	great small friend	great small friend
	?*small super-hero	small super-hero

- (12) Secondary Stress in Long Words

a.	elènora/èleonóra
b.	carótid-a càrotid-áda/caròtid-áda
c.	carótid-a caròtidĩɲ-a, *càrotidĩɲ-a
d.	carótida caròtida zĩɲ-a
	‘carotid’

- (13) Unfaithfulness in Plural Stems

	Singular	Plural	
a.	flox	flor-es	‘flower(s)’
	flox-zĩɲ-a	flox-zĩɲ-a-s	‘small flowers’
		??flor-ĩɲ-a-s	
b.	axɔjs	axɔs-es	rice(pl.)
	axɔj-zĩɲ-o	axɔj-zĩɲ-os	small ricer(pl.)

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